

APPENDIX B. SUPPLEMENTAL INFORMATION

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This appendix includes analysis methods, tables, and figures mentioned in the Draft Environmental Impact Statement (EIS).¹ For all citations and tables sources listed herein, the full reference listings are included in Chapter 8, References, of the EIS.

B.1. ALTERNATIVES CONSIDERED BUT DISMISSED FROM DETAILED ANALYSIS

This section describes alternatives that were considered but dismissed from detailed analysis using the screening process described in Section 2.1.3, Alternatives Screening Process, of the EIS.

B.1.1. Energy Efficiency and Conservation

Energy efficiency and conservation (such as replacing existing lines with more efficient transmission line materials or reducing energy use) are often raised as alternatives to energy projects. Although energy efficiency and conservation efforts help reduce energy demand, primary energy consumption in the United States is expected to increase by 16 to 57 percent by 2050 compared to 2022 (EIA 2023). Energy conservation efforts are long-term goals that require large-scale public education efforts, significant incentives, and government intervention, which extend beyond the scope and timeframe of the Project. Energy efficiency efforts, such as replacing and optimizing existing lines, still do not address the Project purpose, which is to connect the eastern and western electrical grids. Because improvement of energy efficiency and conservation would not meet the Project purpose and need, it was dismissed from detailed analysis.

B.1.2. Alternative Energy Development

Alternative energy resources could be a potential alternative to the Project, such as implementation of renewable energy sources; however, projected energy growth would need a combination of increased energy generation and increased transmission capacity. The Project is not proposing to provide new or alternative energy resources; rather, it is intended to connect the western and eastern electrical grids, which would increase energy resource access and the capacity to transport energy for both electrical grids. Therefore, this was not a viable alternative and dismissed from detailed analysis.

B.1.3. Design Alternatives

The Proponent reviewed design alternatives that would achieve the Project purpose and need while remaining technically and economically feasible. The use of alternating current (AC) transmission rather than direct current (DC) transmission and underground instead of aboveground transmission lines were both considered, as described below.

¹ There may be minor discrepancies between the EIS mileage and acreage and Project applications to cooperating federal agencies from geospatial assumptions, boundary interpretations, and mapping refinements.

B.1.3.1. Alternating Current Transmission Line

Most electricity in the United States is generated, transmitted, and distributed as AC power, making it easier to integrate into existing infrastructure and future connections; however, DC power is more advantageous for long-haul transmission, as it is simpler in design, requires fewer materials, has lower amounts of power loss, and can provide bi-directional flow of energy. A DC line requires high-cost converter stations to connect to an AC grid, but the additional costs are typically outweighed when the line is a few hundred miles long, which is achieved by the proposed approximately 422-mile interconnection. Construction of an AC line is possible but would require additional infrastructure such as extra conductors and more robust structures, which would require more space to allow bi-directional transmission. Overall, the additional materials and construction costs for the AC line weigh against AC technology for the Project. Due to the economic and technical challenges, AC transmission was dismissed from detailed analysis.

B.1.3.2. Underground Transmission

Electric transmission lines are typically constructed aboveground because they are easier and cheaper to build, inspect, maintain, and repair. In addition to easier access, aboveground transmission line conductors have lower resistance, resulting in lower energy loss during transmission, which provides more efficient and higher system performance and lower operational costs.

While underground transmission lines are protected from severe weather, they can be damaged by ground movement, groundwater, and insulation degradation over time. The damage to underground transmission lines is difficult to pinpoint and can result in wider outages and longer repair times. The lifespan of an underground transmission line is estimated to be approximately 50 years as compared to 80 for aboveground (Xcel Energy 2025).

Aboveground transmission lines typically require less expensive and complex materials and less specialized equipment and labor than underground transmission lines. Underground cable, insulated conductors, and protective sheaths are more expensive, and more cables are needed to match the capacity of an aboveground circuit. Underground installation would also require a continuous trench of at least 3 feet wide and 5 feet deep, resulting in a substantial increase in ground disturbance compared to overhead lines, where ground disturbance would be limited to the structure placement (Xcel Energy 2025). Underground transmission lines are estimated to cost 10 and 15 times more than aboveground transmission lines (Xcel Energy 2025).

Although an underground transmission line could meet the Project purpose and need and may be technically feasible, this alternative is not economically feasible due to its substantial additional construction cost, reduced transmission efficiency and system performance, more challenging inspection and ability to repair or upgrade the lines, additional ground disturbance that would result from trenching over 400 miles of transmission line, and overall shorter lifespan.

B.1.4. Route Alternatives

As discussed in Section 2.1.3, Alternatives Screening Process, of the EIS, the Joint Lead Agencies reviewed several route alternatives against the screening criteria and conducted a preliminary assessment of impacts on human and environmental resources to determine which route alternatives to carry forward for detailed analysis. The following route alternatives were considered in the screening process but were ultimately dismissed from detailed analysis.

B.1.4.1. Route Alternative A (Northern Route Alternative)

The Northern Route Alternative (Alternative A) would encompass approximately 9,448.3 acres of maintained right-of-way (ROW) (including approximately 417.4 permanent acres of auxiliary facilities and access roads) and have an approximate 389.6-mile centerline (Figure 2.1-1).

Alternative A was developed based on a Bureau of Land Management (BLM) recommendation to prioritize colocation with existing linear utilities near I-94 and to minimize routing through the Greater Sage Grouse General Habitat Management Area. The Montana Greater Sage Grouse Stewardship Act of 2015 and Montana Executive Order (EO) 12-2015 are state laws that contain specific requirements for protecting the greater sage-grouse. Active sage-grouse leks are typically assigned a 2-mile protective buffer to represent the area most likely used by birds during breeding and nesting. Alternative D crosses the most miles within these active 2-mile buffers, followed by Alternatives B, C, E, and A (Alternative A crosses between 5.0 and 38.6 miles less greater sage-grouse general habitat than the other alternatives). The Proponent presented this alternative to the community during pre-scoping engagement, and landowners expressed concerns about structure placement in agricultural fields within the Yellowstone River Valley, especially fields with irrigation and prime farmland. Of the route variations developed, this route crosses within 1,000 feet of 28 residences, the second most among the alternatives.

A review of state records showed a large number of tribal and cultural resources (244) within 1 mile of Alternative A, as well as the Yellowstone River and Tongue River corridors, which are areas of increased tribal and cultural concerns (Montana SHPO 2023; State Historical Society of North Dakota 2020). In addition, these river corridors contain sensitive species, including bats, fish, and eagles, as well as sensitive riparian habitats, which would require surveying, monitoring, and mitigation.

As Alternative A extends north out of Colstrip, the route crosses an area of land between Colstrip and Forsyth, Montana, with multiple parcels that are under easements with an energy company. These easements allow the company to use some or all of the parcels for the construction, replacement, relocation, and maintenance of transmission facilities, including structures, wires, cables, foundations, and ingress and egress to these facilities (Clearwater Energy Resources LLC 2016, 2019; Clearwater Wind Land Holdings, LLC 2021). These existing easement agreements would conflict with the placement of the Project transmission facilities. Acquiring easements that would not conflict with the existing ones would be difficult. The existing energy easements in this area limit the technical feasibility of Alternative A.

As discussed in Section 2.1.2, Scoping Comments, of the EIS, a landowner suggested a variation of Alternative A in Custer County, Montana, to avoid feedlot operations, visual and aesthetic

resources, and commercial property value. Given the complications of the energy easements, landowner feedback, and tribal and cultural resource and natural resource concerns, Route Alternative A was dismissed from detailed analysis.

B.1.4.2. Route Alternative B (Central Route Alternative)

The Central Route Alternative (Alternative B) would encompass approximately 9,102.5 acres of maintained ROW (including approximately 417.4 permanent acres of auxiliary facilities) and have an approximate 375.3-mile centerline (Figure 2.1-1).

The Proponent developed Alternative B to avoid the Yellowstone River Valley and development along highway corridors and Miles City. This route generally crosses open country with limited opportunities to collocate with existing linear infrastructure. To avoid energy easements north of Colstrip, as discussed in Section B.1.4.1, Route Alternative A (Northern Route Alternative), the route would cross approximately 3 miles of the Hoodoo Land Holdings LLC conservation easements managed by the Montana Fish, Wildlife & Parks (FWP) between Butte Creek Road and Sweeney Creek Road in Rosebud County, Montana. This conservation easement is intended to “conserve, protect, and enhance wildlife habitat,” and prohibits the removal, destruction, control, or manipulation of native vegetation (Hoodoo Land Holdings, LLC 2021). The terms on these easements are incompatible with the construction of a transmission line in the areas north of Butte Creek Road and west of Sweeney Creek Road. This route also crosses the Tongue River approximately 0.6 mile south of Twelve Mile Dam, a state fishing access site and campground that could be visually affected by this route.

In addition to the easement land use conflict, Alternative B did not offer significant environmental advantages over other routes. Therefore, Route Alternative B was dismissed from detailed analysis.

B.1.4.3. Route Alternative C (Southern Route Alternative)

The Southern Route Alternative (Alternative C) would encompass approximately 8,937.3 acres of maintained ROW (including approximately 417.4 permanent acres of auxiliary facilities and access roads) and have an approximate 368.5-mile centerline (Figure 2.1-1). This route was developed through refinement of another route (Alternative E, Tongue River Route Alternative) to address concerns identified during early landowner and agency coordination associated with the Tongue River corridor.

Alternative C takes advantage of the gentler topography east of Colstrip compared to the other alternatives that routed northeast past Rosebud Creek. However, east of the Powder River crossing, the route traverses rugged topography with several abrupt elevation changes of up to 800 feet. The route also crosses predominantly open country with limited existing roads.

Alternative C crosses approximately 2.5 miles of the Bice Ranch LLC Conservation Easement approximately 0.7 mile west of its intersection with Moon Creek Road and Road 611 in Custer County, Montana. The purpose of the conservation easement, managed by the Montana FWP, is to “preserve and protect in perpetuity the conservation values of the Land, particularly the habitat the Land provides for a variety of wildlife species” (Bice Ranch, LLC 2002). The easement prohibits the “removal of trees... the control, removal, or manipulations of any

riparian vegetation... and any commercial or industrial use or activity.” Although the installation of a utility line is not expressly prohibited, it may be considered a commercial or industrial activity, and the Montana FWP recommends avoidance of these and similar easements to the extent practicable.

During community engagement between 2022 and 2024, landowners expressed land use conflicts where Alternatives C and D diverge (approximately mileposts [MPs] 20 to 80), indicating the route would negatively affect ongoing ranching and farming operations (Grid United 2024, 2026b). Additionally, this route crosses approximately 4.3 miles of subdivided residential properties along Cherry Creek Road approximately 3.5 miles east of Rosebud Creek Road in Rosebud County, Montana, which would require easements across more than 14 private properties and come within close proximity (0.5 mile) of several houses.

While Alternative C was slightly shorter (approximately 1 mile shorter with a 45-acre smaller footprint) and crossed less miles of greater sage-grouse general habitat (10.9 miles less) and leks (10.7 miles less) within a 2-mile buffer compared to the Proposed Alternative (Alternative D), there were also 55 more tribal/cultural resources within 1 mile and a greater number of residences within 1,000 feet (Montana SHPO 2023; State Historical Society of North Dakota 2020).

Based on stakeholder engagement, the Proponent revised Alternative C to address landowner concerns and avoid easements and challenging terrain, which resulted in the development of Alternative D (Proposed Alternative). Because Alternative C was refined into Alternative D, it is similar enough in overall design that its inclusion would not better inform decision making (DOE 2025). Community feedback also indicated a preference for Alternative D over Alternative C. Therefore, Route Alternative C was dismissed from detailed analysis.

B.1.4.4. Route Alternative E (Tongue River Route Alternative)

The Tongue River Route Alternative (Alternative E) is a variation of Alternative C that runs along the Tongue River Valley. Alternative E would encompass approximately 8,744.0 acres of maintained ROW (including approximately 417.4 permanent acres of auxiliary facilities and access roads) and have an approximate 359.7-mile centerline (Figure 2.1-1).

Alternative E aligns with Alternative C for the majority of its route but diverges in Custer County, Montana, where Alternative E turns north to run parallel to Tongue River Road and the Tongue River corridor rather than continuing east toward Montana Highway 59 South, as reflected in Alternative C. The segment of Alternative E between Tongue River Road and the location where it reconverges with Alternative C was approximately 34 miles long, compared to approximately 39 miles for the corresponding segment of Alternative C.

Alternative E was created to avoid developed areas around highways and the natural environment of the Yellowstone River. Although Alternative E is the second shortest route alternative, it crossed the most miles of BLM Visual Resource Management (VRM) Class II lands (5.9 miles), which have an objective of retaining the existing character of the landscape. In addition, early coordination efforts by the Proponent in February 2022 with landowners (including local irrigators) and agencies (including Montana State Tribal and Cultural Resource officer) identified concerns related to potential impacts on tribal resources, sensitive wildlife

species (including raptors and prairie dog colonies that had been identified during siting surveys for a different project), and the Tongue River corridor (Grid United 2024, 2026b).

To address these concerns, the Proponent reevaluated and adjusted the more southerly alignment, Alternative C, to follow another route heading north along Montana Highway 59 near Pumpkin Creek in Custer County. Alternative E, a derivative of Alternative C that was refined upon stakeholder and agency input, is similar to Alternative C in design and environmental impacts. As a result, its inclusion would not better inform decision making. Therefore, Route Alternative E was dismissed from detailed analysis.

B.1.4.5. Eastern Route Alternative

The Eastern Alternative is an alternative route within North Dakota only. It was developed to collocate with existing linear utilities and I-94 upon the recommendation of the North Dakota Game and Fish Department to avoid designated greater sage-grouse primary range and by the U.S. Department of Agriculture (USDA) Forest Service to cross the Little Missouri River on private lands. The Eastern Alternative would encompass approximately 7,858.3 acres of maintained ROW (including approximately 417.4 permanent acres of auxiliary facilities and access roads) and have an approximate 323-mile centerline (Figure 2.1-1).

The Eastern Alternative would have the most residences (34) within 1,000 feet of the route alternatives. The Eastern Alternative was developed prior to the addition of the Morton Transmission Line to the Project and was not designed to accommodate the designated SPP interconnection near St. Anthony. To serve both the Oliver County Substation and Morton County Switchyard, the proposed Rosebud County Converter Station would need to be moved to a point on the alternative route and would need to adopt the portion of Alternative D serving the switchyard. Because the route does not serve the purpose and need of the Project, the Eastern Alternative was dismissed from detailed analysis.

B.2. ANALYSIS METHODS

B.2.1. Air Quality

The analysis area for direct and secondary impacts is the geographic vicinity of the Project area² in which Project air emissions would occur that could potentially increase ambient air concentrations. All counties crossed by the Project are included in the air quality analysis area.

Greenhouse gas (GHG) emissions resulting from human activity are a major contributor to climate change. Trends in temperature and precipitation patterns were evaluated in Montana and North Dakota to determine how climate change is affecting the region. In addition, estimated GHG emissions resulting from Project construction were evaluated against state and national levels for the energy sector.

² "Project area" is the permanent, operational ROW and areas with temporary/permanent impacts within and outside of the ROW.

B.2.1.1. Regulatory Framework

National Ambient Air Quality Standards

Under the federal Clean Air Act (CAA), initially published in 1970, the U.S. Environmental Protection Agency (USEPA) sets National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA Amendments of 1990 created the Title V permit program for major sources of criteria air pollutants and expanded the hazardous air pollutants (HAPs) regulatory program to address specific industrial source categories of toxic air pollutants.

The USEPA has set NAAQS for six criteria pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO₂); particulate matter (PM) with an aerodynamic diameter less than or equal to 10 and 2.5 microns (PM₁₀ and PM_{2.5}, respectively); ozone (O₃); and sulfur dioxide (SO₂), as defined in 40 CFR Part 50. The NAAQS is incorporated into the air quality standards in the Administrative Rules of Montana (ARM) and the North Dakota Century Code (NDCC) (ARM 17.8.202 and NDCC § 33-15-02-07).

The federal CAA established two types of standards for criteria pollutants. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The NAAQS are presented in Table 3.2-1.

When existing concentrations in an area, as determined by air monitoring, are below the NAAQS for a given criteria pollutant, the area is designated an “attainment area.” An area is designated as “nonattainment” when existing concentrations of one or more regulated pollutants / averaging time combinations are above the NAAQS. Areas redesignated from “nonattainment” to “in attainment” are considered “maintenance areas.” An “unclassifiable” designation applies when adequate data have not been collected to demonstrate attainment but, due to the location and/or lack of emission sources, is expected to be in attainment. Attainment status designations are on the USEPA’s Green Book website (USEPA 2025d).

Federal Class I Areas

The USEPA categorizes attainment areas as Class I, Class II, or Class III. These categories determine the increment of acceptable air quality deterioration. Under the Prevention of Significant Deterioration (PSD) program, all international parks, national wilderness areas and national memorial parks that exceed 5,000 acres, and national parks that exceed 6,000 acres are designated as mandatory federal Class I areas. When evaluating the impacts from a new major source or major modification subject to PSD permitting, special impact analyses are required to determine if the emission increases could potentially impair visibility in Class I areas. According to the USEPA, if a PSD project is located within 62 miles (100 kilometers) of a Class I area, that project must notify the appropriate federal Land Manager in addition to assessing air pollution impacts on the Class I area (USEPA 1979).

The Project is located within 62 miles of two Class I areas: the Theodore Roosevelt National Park in North Dakota, a federal Class I area; and the Northern Cheyenne Reservation in Montana, a tribal-designated non-federal Class I area. These areas are detailed in Table 3.2-2.

No PSD sources would be included in the Project; therefore, no further analysis would be required to assess the impact from air emissions on the nearby Class I areas.

State Air Permitting Regulations

The Proponent would use concrete batch plants during construction, which requires an air quality registration through the Montana Department of Environmental Quality (MTDEQ). The Proponent would apply for this registration prior to construction (MTDEQ 2019). The Project would not include the addition or modification of any permanent stationary emission sources as part of normal operations. There would be a backup generator with a liquid propane gas tank at the Morton County Switchyard, and backup generators at the fiber repeater stations with liquefied petroleum gas storage tanks. These generators are for backup power use only and do not require additional air permits from the states. The Project would comply with all state air quality rules as detailed in the following subsections. If final engineering designs include any stationary emission sources subject to state permitting requirements, the Proponent would apply for a state air permit and comply with the applicable standards outlined in ARM 17.8.743 and NDCC § 33.1-15-14.

Greenhouse Gas Reporting Rule

The USEPA established a mandatory “Greenhouse Gas Reporting Program” in 2009 for over 40 source categories (40 CFR Part 98). The requirements for emission calculation, recordkeeping, and annual reporting apply if individual facility annual emissions exceed 25,000 metric tons of carbon dioxide equivalent (CO₂e).

The Project would not include any new or modified stationary emission sources and, therefore, would not be subject to the GHG Reporting Rule.

General Conformity

Section 176 of the 1990 CAA amendments required the USEPA to develop rules to ensure federal actions conform to the appropriate State Implementation Plan (SIP). These rules, known together as the General Conformity Rule (40 CFR §§ 51.850–860 and 40 CFR §§ 93.150–160), require any federal agency responsible for an action in a nonattainment or maintenance area for any criteria pollutant to determine if the action conforms to the applicable SIP or is exempt from the General Conformity Rule requirements. To conform with the SIP, federally supported or funded activities cannot do the following:

- Cause or contribute to any new air quality standard violations;
- Increase the frequency or severity of any existing standard violation; or
- Delay the timely attainment of any standard, interim emission reduction, or other milestone.

General Conformity applies in designated nonattainment or maintenance areas on a pollutant-by-pollutant basis. A General Conformity Analysis consists of two steps:

- Step 1 is an applicability analysis that compares estimated project emissions from construction and operation (excluding emission sources covered by the New Source Review permitting program) to the *de minimis* thresholds defined in the General Conformity Rule.

- Step 2 requires a General Conformity determination for each pollutant where the total of direct and secondary emissions caused by a federal action will equal or exceed *de minimis* levels as specified in 40 CFR § 93.153, with the exceptions specified in 40 CFR § 51.853(c), (d), (e), or (f). Emissions regulated by any permit issued under minor and major PSD permitting/licensing or nonattainment New Source Review are exempt. General Conformity does not apply to federal actions in attainment or unclassified/attainment areas.

The Project would not be located in a nonattainment or maintenance area; therefore, the General Conformity Rule would not be applicable. There is a nonattainment area in a portion of Rosebud County, Montana; however, the Project is not directly located in the nonattainment area; therefore, there is limited potential to exceed the conformity threshold.

New Source Performance Standards

Several New Source Performance Standards (NSPS) (40 CFR Part 60) provide emissions standards along with operating practices, monitoring, recordkeeping, and reporting requirements for many industrial categories of new or modified sources.

The Project would not include any new or modified stationary emission sources and would, therefore, not be subject to NSPS regulations. If final engineering designs include equipment subject to NSPS, the Proponent would comply with the applicable standards.

National Emission Standards for Hazardous Air Pollutants

The Project would not include any new or modified stationary emission sources and, therefore, would not be subject to National Emissions Standards for Hazardous Air Pollutants regulations. If final engineering designs include equipment subject to National Emissions Standards for Hazardous Air Pollutants, the Proponent would comply with the applicable standards.

B.2.2. Cultural/Tribal/Historic Resources

Cultural resources include the following categories:

- Historic properties include historic districts, buildings, sites, objects, and standing structures typically over 50 years of age. This can include in-use buildings; neglected and abandoned structures; cemeteries; and roads, bridges, and other infrastructure.
- Archaeological sites include physical evidence of past human activity, often buried or partially buried, and remains of built structures, including precontact and historic remains older than 50 years. This can include, but is not limited to, camps, villages, wells, privies, trash dumps, graves, and building foundations.
- Resources of cultural or religious significance to Indian tribes as identified by participating Indian tribes through survey and consultation. This can include both of the above categories, natural resource harvesting locations, traditional use areas, traditional cultural places, and sacred sites.

Cultural resources are described as being either precontact, referring to any cultural resource that predates European arrival to the area, or historic, referring to any cultural resource that postdates European arrival to the area.

B.2.2.1. Regulatory Setting

Compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA; 54 USC § 306108) and its implementing regulations in 36 CFR Part 800 is required in addition to National Environmental Policy Act (NEPA) compliance. Section 106 of the NHPA requires federal agencies to identify and assess the effects of the Project on historic properties in consultation with State Historic Preservation Offices (SHPOs), Indian tribes, local governments, and the public. A Programmatic Agreement³ that would guide compliance with Section 106 has been developed and is included as Appendix J of the EIS. The Project crosses lands administered by the BLM, USDA Forest Service, and USDA Agricultural Research Service (ARS), which have designated the U.S. Department of Energy (DOE) as the lead federal agency pursuant to 36 CFR § 800.2(a)(2). The MTDEQ is the lead state agency responsible for compliance with the Montana Environmental Policy Act (MEPA), which will be satisfied through completion of the EIS, including § 75-1-103 (2)(e), MCA, regarding historic and cultural preservation.

Cultural resources listed on or eligible for listing on the National Register of Historic Places (NRHP)—or cultural resources that remain unevaluated for listing on the NRHP—warrant consideration under Section 106 of the NHPA and are referred to as historic properties. NRHP eligibility can be evaluated for districts, sites, buildings, structures, and objects that possess significance and integrity of location, design, setting, materials, workmanship, feeling, and association.

The four criteria for which historic properties may be considered eligible for listing on the NRHP are defined as follows (NPS 1995):

- 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.

Certain types of properties are not typically considered for NRHP listing unless there are unusual circumstances, including cemeteries, religious properties, birthplaces, graves or cemeteries, reconstructed or moved properties, or properties whose significant features are less than 50 years old.

Section 106 of the NHPA requires that for the identified federal undertaking, the lead federal agency will identify the Area of Potential Effects (APE), identify historic properties, assess whether any historic properties would be adversely affected, and determine how the impacts could be avoided, minimized, or mitigated. The physical APE encompasses any physical impacts from the Project. The DOE has determined the physical APE for the Project includes a

³ Programmatic Agreements allow for the resolution of adverse effects for complex projects through negotiation and agreement between the lead federal agency, SHPOs, tribal historic preservation offices (THPOs), and the Advisory Council on Historic Preservation (36 CFR § 800.14(b)).

300-foot-wide corridor for the transmission lines, with the exception of a 3-mile stretch for the Rosebud Transmission Line, where the physical APE was expanded to a 420-foot corridor due to a wider Project ROW in that area. The physical APE consists of 70-foot-wide corridors for access routes and temporary impact areas to account for all physical impacts. A 750-foot buffer around structures where cable pulling and tensioning locations may be needed was included in field surveys, as some of those areas may be subjected to physical impacts and are included within the physical APE (DOE 2025a, 2025b).

The non-physical APE includes visual and acoustic impacts from the Project and is informed by research showing that visual impacts from up to 500 kilovolt (kV) transmission lines are generally limited to 3 miles (Pay et al. 2020). The non-physical APE for the Project includes a 3-mile buffer on each side of the physical APE to account for visual, audible, and other non-physical impacts (DOE 2025a, 2025b). Both the physical and non-physical APEs include all direct and indirect effects.

Physical and non-physical impacts would be considered. Physical impacts on buried cultural remains (e.g., archaeological sites) occur when the depositional context for the buried cultural remains are changed in some way that is critical to the stability and preservation of the remains, such as physical disturbance of the soil matrix, changes in the normal moisture levels in the soil, changes in surface waters and increased erosion, or other disturbances to the soil matrix (e.g., ongoing vibration or compression). Non-physical impacts on cultural resources, including historic properties, archaeological sites, and tribal resources occur when the viewshed or other aspects of the setting of the resource change significantly. For the purposes of this Project, non-physical impacts on cultural resources are considered only when the site's setting has been identified as a contributing factor or for sites of tribal significance, such as stone feature sites, rock art, eagle traps, and more.

The DOE has initiated Section 106 consultation for the Project. Through discussions with the Proponent, Montana SHPO, North Dakota SHPO, and Indian tribes, the APE for physical and non-physical effects did not receive any objections. Federal agencies with jurisdiction over lands crossed by the Project would have the opportunity to review and comment on all reports, including eligibility determinations and findings of effect, prior to submission to SHPOs. After incorporating comments received from other federal agencies, the DOE would provide the reports detailing results and recommendations to the Montana and North Dakota SHPOs and Indian tribes for comment.

B.2.2.2. Survey Methodology

The Proponent conducted cultural resources surveys and literature searches for the Project footprint, which is in development. Background desktop research and cultural resource field survey methodologies considered federal agency and state agency requirements, including *Montana SHPO Consultation Guide: A Handbook for Cultural Resource Review and Compliance in Montana* (Montana SHPO 2023) and the *North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects* (SHSND 2020).

For the non-physical APE, a literature review, including SHPO records and historic topographic and aerial maps, was conducted to identify previously recorded cultural resources within the

3-mile non-physical APE. In situations where the Project would not be visible or otherwise cause non-physical impacts on an identified resource, additional review was not conducted. If an identified resource may be visually affected, the nature of the resource was considered to evaluate whether visual integrity is integral to its significance to determine the potential for adverse effects.

Background file and literature searches were conducted within a 1-mile radius of the Project area using the Montana Cultural Records Database and files stored at the Archaeology and Historic Preservation section of the State Historical Society of North Dakota.

Background research methodologies included:

- Identification of any recorded archaeological sites and burial sites or cemeteries;
- Identification of any recorded historical architectural properties;
- Review of relevant cultural resource management surveys conducted within the counties the Project passes through;
- Review of primary and secondary historic information, including maps and county histories, to help locate previous structures and archaeological sites; and
- Review of historic documents and maps available through online sources.

All field survey crew leads meet the Secretary of the Interior's professional qualification standards (36 CFR Part 61). Final results of field surveys of the physical and non-physical APEs are pending, and impacts on cultural resources are presently unknown. Per Stipulation IV.D.5.b. of the Programmatic Agreement (included as Appendix J of the EIS), once the DOE has reviewed and approved the Proponent's Class III reports and non-physical effects reports, the DOE would prepare a determination of eligibility and assessment of effects and address any adverse effects through the measures described in Stipulation V, Resolution of Adverse Effects.

For the field surveys in Rosebud, Custer, and Fallon counties, Montana, the following methods were used for the area within the physical APE:

- Pedestrian survey by archaeologists to identify surface features, foundations, densities of surface artifacts, and other surface indications of archaeological sites. When an artifact or artifacts were identified on the surface, the pedestrian survey interval decreased to 16.4-foot (5.0-meter) interval transects.
- Limited shovel testing in areas without adequate ground surface visibility to assess the potential for cultural resources or verify surface observations.
- Selective shovel testing at isolated find spots to explore whether additional buried material may be present.
- Shovel testing conducted outside of identified site boundaries to verify that resources would not be affected by activity in those areas.
- Shovel testing within identified sites to define site boundaries and evaluate the density and distribution of artifacts.
- Shovel test probes generally measured up to 15.7 inches (40.0 centimeters) in diameter, and at least 11.8 inches (30.0 centimeters) below surface, but no more than 27.6 inches (70.0 centimeters). Soil was hand-screened through 0.25-inch hardware mesh.
- No shovel tests within or near stone features or culturally sensitive locations identified by Tribal Cultural Specialists.

- For standing structures over 50 years old, either use an Architecture/Engineering Record or a Cultural Site Record, as appropriate.

Tribal Cultural Specialists joined archaeologists in conducting surveys of the physical APE. A Tribal Cultural Specialist is a tribal historian or specialist in traditional ecological knowledge who knows the landscape and locations of traditional cultural value to a specific Indian tribe. The Proponent's tribal engagement team coordinated with Indian tribes throughout the region, providing logistical support to the Tribal Cultural Specialists from each participating Indian tribe and arranging access to survey the corridors.

Tribal Cultural Specialists representing the following Indian tribes participated in the field surveys: Assiniboine and Sioux tribes of the Fort Peck Indian Reservation, Montana; Blackfeet Nation; Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota; Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota; Crow Tribe of Montana; Flandreau Santee Sioux Tribe of South Dakota; Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Little Shell Tribe of Chippewa Indians of Montana; Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana; Oglala Sioux Tribe; Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota; Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota; Spirit Lake Tribe of Fort Totten, North Dakota; Standing Rock Sioux Tribe of North and South Dakota; Three Affiliated Tribes (Mandan, Hidatsa, and Arikara Nation) of the Fort Berthold Reservation, North Dakota; Turtle Mountain Band of Chippewa Indians of North Dakota; and Yankton Sioux Tribe of South Dakota.

Representatives of the following Indian tribes participated in coordination but did not have Tribal Cultural Specialists in the field: Chippewa Cree Tribe of the Rocky Boy's Reservation; Confederated Salish and Kootenai tribes of the Flathead Reservation; Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota; and Santee Sioux Nation, Nebraska.

When Tribal Cultural Specialists identified a resource within the Project area significant to their Indian tribe, the following methodologies were followed:

- Archaeologists assisted the Tribal Cultural Specialists in documenting the area boundary and other important information.
- Tribal Cultural Specialists documented initial recommendations for avoidance of tribally identified sites.
- Tribal Cultural Specialists documented finds for their THPO.
- The Proponent held a monthly meeting with participating THPOs to discuss tribal-identified sites.

During the physical APE field surveys, archaeologists documented the location and condition of recorded resources and newly identified resources and recommended whether further work was advised if the resource could not be avoided. The archaeologists did not formally test any sites to establish NRHP eligibility.

Reports assessing previously recorded resources within the non-physical APE are pending. For historic properties for which adverse non-physical impacts are identified, the DOE would determine appropriate mitigation in accordance with the Programmatic Agreement.

B.2.3. Public Health and Safety

Public health and safety issues include electromagnetic fields (EMFs) generated along the transmission line, proximity to major population centers and public services, and public infrastructure that crosses the proposed alignment. Requirements that form the regulatory framework for analyzing impacts on public safety include, but are not limited to, the National Electrical Safety Code (NESC), National Institute of Environmental Health Sciences, and Occupational Safety and Health Administration standards. The Proponent would comply with industry-standard codes and practices during construction and operations.

The public health and safety analysis area includes a typical 200-foot ROW (100 feet on each side of the centerline) along the length of the proposed transmission line and the permitted limit of disturbance surrounding all proposed structures. In the Project area with two parallel transmission lines, the permitted ROW and limit of disturbance would account for the 200-foot ROWs crossing, with a total analyzed ROW of 320 feet. The period of analysis would include the estimated 3- to 4-year construction period and continue through operations. The approximate lifespan of aboveground transmission lines is 80 years.

B.2.3.1. Electromagnetic Fields

The electric field from a transmission line can interact with nearby conductive objects, such as vehicles or metal fences, and cause an induced voltage. The strength of this voltage depends on factors like weather conditions and the object's size, shape, capacitance, resistance to ground, and its position along the ROW. If these objects are insulated or partially insulated from the ground and someone touches them, a small current could flow through their body to the ground. This may result in a mild shock or a spark, which would not lead to a fatality. To prevent unsafe discharge levels, the NESC requires that any discharge from an AC line must not exceed 5 milliamperes. Any such current may also produce a magnetic field in the area around the conductive material. The magnetic field has the highest impact at the source conductor and decreases the impact with increasing distance. The 5 milliampere requirement does not apply to high-voltage direct current (HVDC) transmission lines.

EMFs from the extra-high voltage (EHV) AC transmission line and HVDC Transmission Line were modeled to evaluate their environmental performance. The primary model used was the Bonneville Power Administration (BPA) Corona and Field Effects (CAFE) Program for EHV AC lines. Specific conductor bundle configurations were assessed for both static and space charge electric fields in HVDC lines. For EHV AC, EMFs were modeled using field-strength guidelines and software tools. For AC lines, field strength varies at 60 hertz, and the modeling results focus on the EMFs within and at the edge of the ROW. For HVDC lines, the EMF includes static and space charge components, with the configuration of conductors affecting the field strength. The EMF results were provided in terms of electric field (kV/meter) and magnetic field (milligauss [mG]) strengths, with detailed comparisons for different conductor bundles used in both AC and HVDC lines. Tables and values were provided for EMFs within the ROW and at the edges approximately 3.3 feet above the ground, along with the standard maximum exposure limits.

Implantable Medical Devices

Strong EMFs may affect implantable medical devices like pacemakers, defibrillators, neurostimulators, and insulin pumps. The EMF calculations within and at the edge of the ROW provide electric and magnetic field strengths to evaluate their impact on implantable medical devices.

Radio and Television Interference

Radio interference from transmission lines is primarily caused by corona discharge, which generates high-frequency currents due to the ionization and deionization of air molecules around the conductors. These high-frequency currents produce electromagnetic radiation in the form of radio waves, causing interference, particularly with AM radio signals. The level of interference depends on the radio signal strength and the signal-to-noise ratio, which measures the difference between the two.

The Proponent used BPA Field and Corona Effects software developed by the Manitoba Hydro International to evaluate AM radio interference levels for the HVDC Transmission Line and its associated conductors in a conductor optimization study completed by the Proponent (Grid United 2024d). Additionally, BPA CAFE software was used for evaluating AM radio interference levels for the Oliver, Morton, and Rosebud Transmission Lines. These tools helped assess the potential for radio interference across the ROW in fair-weather conditions and under normal radio signal strength.

B.2.3.2. Stray Voltage

Stray voltage may occur between AC and DC lines due to the changing magnetic field of the AC line interacting with the DC line. The induced voltage from the AC and DC lines can result from electric fields inducing voltage in nearby metallic structures, unbalanced grounding systems, or faults in electrical components.

B.2.3.3. Public Services

Public services provided by government entities may include educational and outreach facilities, emergency services, utilities, and more. They are typically concentrated in urban areas.

Airspace

Airports within a 1-mile radius of the proposed transmission line are most likely to be affected by construction and operations activities. Public airport data were analyzed for proximity to the ROW.

Traffic

The Proponent has developed a Traffic and Transportation Management Plan that outlines safety measures to prevent impacts on traffic and transportation during construction. Further discussion of long-term traffic impacts is presented in Section 3.10, Socioeconomics, of the EIS.

Utilities

The Proponent used public location data to map major utilities that cross the proposed transmission line (Grid United 2024a). Prior to any subsurface work, the Proponent would

either place an 811 call or conduct a private utility location to ensure any underground lines are flagged and teams are notified. In the event of unexpected contact with underground utilities, risk to construction personnel could include electrical shock, exposure to hazardous liquids or gases, or trench destabilization due to flooding. Damaged utilities could cause temporary outages for essential services in nearby areas.

B.2.3.4. Corona Effect

The corona effect is the ionization of air molecules near high-voltage transmission line conductors, typically triggered by imperfections in electrical equipment such as unintentional sharp edges, scratches, or moisture. Compromised electrical equipment can generate a more intense electric field in the surrounding air, which can strip electrons from neutral air molecules, restructuring atmospheric oxygen (O₂) into ozone (O₃) and nitrogen (N₂) into nitrogen oxides (NO_x). The rate of O₃ and NO_x production increases with temperature and sunlight and is reduced by humidity. O₃ and NO_x are highly reactive compounds, making their presence in the air short-lived.

Federal regulations set limits on the permissible levels of O₃ and NO_x in the air, and these standards are reflected in state air quality rules. The ambient air quality standard for O₃ is 0.075 parts per million (ppm) based on a 3-year average of the fourth-highest daily maximum 8-hour concentration (40 CFR § 50.15). The ambient air quality standard for NO₂ (the indicator pollutant for all NO_x compounds) is 53 ppb annual average concentration (40 CFR § 50.11). Inhalation of O₃ or NO_x can pose a major public health and safety risk to humans (USEPA 2025); they are lung irritants that can trigger acute (lung infections, minor coughs) and chronic (asthma, chronic obstructive pulmonary disease) respiratory issues.

The analysis methods for air quality are discussed in Section B.2.1 of this appendix. Section 3.4, Public Health and Safety, of the EIS uses the results of those methods to discuss the risks of affected air on human health.

B.2.3.5. Other Resources Considered

Erionite Features

Erionite is a fibrous mineralogical material found within several geologic formations in North Dakota and is a known carcinogenic when ingested or inhaled; therefore, it would be a health risk if excavated during construction (NTP 2021). Section 3.7.2.5, Geologic Hazards, of the EIS discusses the properties of erionite along the proposed line in detail.

Agricultural Operations

There is no known impact of high-voltage power lines similar to the proposed transmission line on livestock behavior (Amstutz and Miller 1980), health (Wenzel et al. 2020), or mortality (Angell et al. 1990). Cattle, sheep, and swine all exhibit typical behavior, growth patterns, breeding patterns, and lifespans when grazing under transmission lines. No studies have been conducted by the Proponent to assess impacts on livestock; however, studies performed on EMFs would apply to livestock.

Floodplains

In the event of a major flood, transmission line structures constructed within a floodplain may be susceptible to structural failure or compromised transmissivity (FEMA 2022) and pose a safety risk to the public. To prevent hazards associated with floods, all structures within floodplains employ conservative design criteria and ample stormwater controls. The Proponent conducted floodplain studies and designed the Project to avoid or span floodplains where possible (Grid United 2024b). Floodplain impacts are discussed in Section 3.6, Surface Water Hydrology, of the EIS.

Extreme Weather Interactions

Transmission lines in Montana and North Dakota face risks from extreme weather events such as severe thunderstorms, tornadoes, heavy snowfall, ice storms, wildfire, high winds, and flooding. These conditions can cause structural damage, power outages, and maintenance challenges. Additionally, risks like overgrown vegetation and avian collisions can also contribute to transmission line failures. Extreme weather events, especially winter storms with heavy snow and ice accumulation, have been significant factors in transmission line failures, leading to mechanical stress, sagging, electrical faults, and potential equipment damage.

The frequency and intensity of extreme weather events, including heat waves, storms, and severe winters, are expected to increase. Changes in precipitation patterns could result in more frequent flooding, posing further risks to infrastructure stability. According to the Fifth National Climate Assessment, the increased occurrence of extreme events could heighten the vulnerability of transmission infrastructure (USGCRP 2023). The need for robust design standards and proactive resilience measures will be crucial to mitigate the impacts of these evolving extreme weather risks on transmission lines.

The Federal Emergency Management Agency (FEMA) National Risk Index is a quantification of extreme weather risks mapped by county. Each county crossed by the Project is mapped with relative risk on a scale of 1 to 100 for earthquakes, thunderstorms, high winds, winter weather, wildfires, and other natural disasters.

B.2.4. Groundwater Hydrology

This section focuses on assessing and managing groundwater resources within the groundwater hydrology analysis area (i.e., Project area).

Existing data sets including published works on the Project area hydrogeology were used in this analysis (Whitehead 1996). Existing contamination sources were identified by reviewing USEPA records (Grid United 2024, 2026; USEPA 2025). MTDEQ and North Dakota Department of Environmental Quality (NDDEQ) data were reviewed for groundwater source water protection areas (MTDEQ 2024; NDDEQ 2012), and private well data were sourced from publicly available data from the USEPA, MTDEQ, NDDEQ, North Dakota Department of Water Resources, and the Montana Bureau of Mines and Geology (MBMG) (USEPA 2024; MTDEQ 2024; NDDEQ 2024; NDDWR 2024; Grid United 2024, 2026).

B.2.5. Surface Water Hydrology

Surface waters (wetlands and waterbodies such as lakes, streams, ponds, and stormwater features) were identified using the following data sources (Grid United 2024, 2026a; WEST 2025, 2026):

- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) Plus High Resolution
- USGS 7.5-minute topographic maps
- Montana Wetland and Riparian Framework (MWRF)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI)
- FEMA's National Flood Hazard Layer mapping
- Field surveys conducted between 2022 and 2025

B.2.6. Minerals and Geology

This section describes the methods and sources used to assess the region's physiography, bedrock geology, mineral resources, paleontology, seismicity, geologic hazards, and other relevant factors within the minerals and geology analysis area (i.e., Project area).

Information was gathered from government agencies, geological surveys, and specialized databases to provide an understanding of the area's geological conditions and inform decision-making regarding geologic hazards and mineral resources. These sources are cited throughout Section 3.7, Minerals and Geology, of the EIS. Note that when discussing federally managed lands, the EIS refers to only the surface estate unless the text clearly states that it is referring to the subsurface federal estate. This subsurface federal estate can occur in areas where the surface is owned by a non-federal entity.

B.2.7. Land Use and Recreation

B.2.7.1. Land Use

The land use analysis area includes temporary (construction) and permanent (operations) Project impact areas. Changes in land use were calculated based on the Project area acreage. In terms of predominant land uses and patterns, lands within 0.25 mile (1,320 feet) of Project components are discussed to provide context for impacts. County and regional planning documents and federal and state land management documents were reviewed to determine the relationship between Project components and local or regional land use policies.

B.2.7.2. Recreation

Recreation resources include natural resources and facilities that offer opportunities for leisure activities. The recreation analysis area includes the temporary and permanent Project impact areas and a 0.25-mile (1,320-foot) radius surrounding the permanent Project components. Project activities and components were reviewed for the following impacts on recreation resources: permanent or temporary access restrictions and construction-related or operational-related noise, lighting, traffic, and land disturbance. Visual resources are addressed in Section 3.9, Visual and Aesthetics, of the EIS.

B.2.8. Visual and Aesthetics

The visual and aesthetics analysis area encompasses lands within a 1-mile buffer of the proposed transmission line corridor and associated facilities (Grid United 2024, 2026). The impact analysis encompasses both temporary construction areas and permanent structures and facilities during operations. The assessment methodology follows established federal agency guidance to provide consistency across all land ownership within the Project area.

Federal and state management documents were reviewed to determine compliance between the Project and applicable land use policies. Visual impact assessment employed standardized methodologies adapted from BLM and USDA Forest Service guidance to evaluate the degree to which Project features would contrast with existing landscape characteristics. In Montana, there are no county or statewide visual standards to assess impacts on visual resources. To assess equal impacts between federal and non-federal lands, the EIS has adapted federal visual guidance to all lands to treat all viewsheds the same. The agencies did not want to discount viewsheds on private and state lands compared to federal lands. The analysis included visual contrast evaluation comparing Project features against existing landscape elements in terms of form, line, color, and texture. Form refers to the mass or shape of landscape features, line describes the real or imagined boundaries created by changes in form, color represents the hues visible in the landscape, and texture indicates the visual surface characteristics created by light and shadow patterns.

Computer-generated visual simulations (Appendix G, Visual Simulations and Viewsheds, of this EIS) were developed to illustrate baseline and operational conditions and appearance from each key observation point (KOP). These simulations incorporate anticipated Project design specifications for operations, including structure heights, spacing, and colors, to provide realistic representations of post-construction conditions. The simulations account for atmospheric conditions, seasonal variations, and viewing angles typical of each KOP. The simulations do not include construction impacts or additional impacts by access roads, structure pads, or permanent landscape modifications from construction.

The assessment considered impacts based on viewing distance, viewer sensitivity, and the landscape's ability to absorb visual modifications. Both temporary construction impacts and permanent operational impacts were evaluated within this framework. Visual impact assessment for the Project employed comprehensive methodologies to evaluate impacts on landscape character and viewer experience. The assessment methodology draws from established BLM and USDA Forest Service guidance documents, applying consistent evaluation criteria across all land ownerships within the Project area.

Furthermore, the assessment considers multiple factors that influence the magnitude of visual impacts. Viewing distance significantly affects impact perception, with foreground views generally experiencing stronger impacts than background views. Viewer sensitivity varies among user groups, with recreational viewers typically showing higher sensitivity than commuters or ranchers. The landscape's absorption capability depends on topographic variety, vegetative screening, and the presence of similar existing features. Duration and frequency of views also influence impact significance, distinguishing between brief glimpses from highways and prolonged views from residences or recreation areas.

B.2.9. Socioeconomics

Socioeconomic resources evaluated in Section 3.10, Socioeconomics, of the EIS include population; economy, employment, and income; housing; public services and facilities; taxes and revenues; transportation; public health, welfare, and safety; and property value. Baseline information was obtained from federal and state government sources. Primary sources include the U.S. Census Bureau, U.S. Bureau of Labor Statistics, and State of Montana and State of North Dakota agency websites. In all cases, the most recent and reliable data were used in the analysis.

The socioeconomic analysis area (Figure 3.10-1) includes the counties crossed by the Project and counties that have communities and transient housing (e.g., hotels, lodges, campgrounds) within an estimated 90-minute drive of the Project impact areas.

Table 3.10-1 lists the counties in the socioeconomic analysis area along with the associated Project components. Additional counties and/or population centers included in the socioeconomic analysis area but not crossed by any Project components are noted as such in Table 3.10-1.

B.2.10. Soils

The soils analysis area includes the specific impact areas needed for construction:

- Permanent structure foundations and associated temporary structure pad impact areas, located entirely within the ROW;
- Temporary impact areas for guard structures;
- ROW vegetation clearing areas for clearing of trees and tall shrubs, located entirely within the ROW;
- Temporary and permanent access roads (25 to 50 feet wide), existing access roads requiring improvements, and overland travel paths both within and outside of the ROW;
- Temporary impact areas for pulling and tensioning sites extending outside of the ROW; and
- Permanent and temporary impact areas required for the expansion of the Colstrip Substation and the construction of the Rosebud County Converter Station, Morton County Converter Station, and Morton County Switchyard.

Additional information about these components is provided in Chapter 2, Description of Alternatives. Following construction, operational impacts would occur where the Proponent would operate and maintain facilities and access roads.

B.2.10.1. Information Sources

At a regional scale, the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* handbook (USDA NRCS 2022) provides descriptions of the land resource regions crossed by the Project. At a local scale, the Web Soil Survey (Grid United 2026) provides descriptions and Geographic Information System (GIS) data of county soil map units crossed by the Project and detailed soil characteristics of soil map units. In addition, information regarding prime farmland and other soils can be obtained from the USDA soils data source (USDA 2025).

B.2.10.2. Methods of Analysis

GIS data from the Web Soil Survey (Grid United 2026) were used to determine acreages of each soil map unit within Project impact areas. By cross-referencing characteristics of each soil map unit, acreages of soils with selected important characteristics were calculated. Assessments of impacts based on these soil characteristics were then performed. The important characteristics evaluated includes the following: prime farmland and state important soils, compaction-prone soils, water and wind erodible soils, rock soils, shallow bedrock soils, low revegetation vegetation potential, topsoil depth, and slope gradient.

B.2.11. Noise

The noise analysis area includes the area within 0.5 mile (2,640 feet) from the Project facilities (e.g., converter stations, switchyard) and 2,000 feet from the transmission line segments.

B.2.11.1. General Information on Noise

Federal agencies use two measures to relate the time-varying quality of environmental noise to its impact on people: the 24-hour equivalent sound level ($L_{eq(24)}$) and the day-night sound level (L_{dn}).

The $L_{eq(24)}$ is the level of steady sound with the same total (equivalent) energy as the time-varying sound, averaged over a 24-hour period. The L_{dn} considers the duration and time the noise is encountered. The L_{dn} is the $L_{eq(24)}$ with 10 decibels (dB) on the A-weighted decibel (dBA) scale added to sound levels between 10:00 p.m. and 7:00 a.m. to account for human's greater sensitivity to sound during nighttime hours.

The Proponent estimated existing ambient (i.e., background) noise levels based on land use classification reference values from American National Standards Institute (ANSI) Standard 12.9-2013 (Quantities and Procedures for Description and Measurement of Environmental Sound) Part 3 (Short-Term Measurements with an Observer Present). Regulatory thresholds for noise impacts were derived from the *Protective Noise Levels: Condensed Version of EPA Levels Document* (USEPA 1978) and applicable local noise regulations.

B.2.11.2. Noise Ordinances and Guidelines

The USEPA (1978) publication evaluates noise impacts with respect to health and safety. The document provides information for governments to develop their own ambient noise standards. The USEPA determined that to protect the public from interference and annoyance in outdoor residential areas, noise levels should not exceed an L_{dn} of 55 dBA, which is equivalent to a continuous noise level of 48.6 dBA for facilities that operate at a constant level of noise. This guidance level was developed without regard to technical or economic feasibility and, as such, should not be viewed as a standard, criterion, regulation, or goal (USEPA 1978).

Noise impacts are evaluated based on federal and local regulations and modeled to predict impacts on noise-sensitive areas (NSAs). Local noise regulations were identified by jurisdiction. Montana (ARM 17.20.1607(2)(a)(i)) limits sound levels to 50 dBA L_{dn} at transmission ROW edges in residential and subdivided areas unless the affected landowner waives this condition; it also limits sound levels to no greater than 55 dBA L_{dn} at the edge of the property boundaries of

substations in residential and subdivided areas. In the Montana counties relevant to the Project—Custer, Fallon, and Rosebud—no local rules were identified with measurable noise limits for construction or operations.

North Dakota does not impose statewide noise limits applicable to the Project. Similarly, Golden Valley, Oliver, and Slope counties have no specific quantitative noise standards. Grant County (2025) Zoning Ordinance limits noise to 80 dB during the day and 70 dB at night. Hettinger County (2007) Land Use Regulations limits noise to 75 dB during the day and 65 dB at night. Morton County Land Use Code states that noise (excluding construction-related activity) for any source in a Limited Industrial zone must remain below 65 dB during the day (7:00 a.m. to 11:00 p.m.) and 60 dB at night (11:00 p.m. to 7:00 a.m.), measured at or beyond the property boundary where the noise originates (Morton County 2025). The remaining counties relevant to the Project do not have applicable quantitative noise regulations.

B.2.12. Vegetation

The vegetation analysis area is the Project area. Within the vegetation analysis area, surveys occurred in 971.5 acres (WEST 2024) on National Forest System (NFS) lands within the Little Missouri National Grassland (LMNG) in North Dakota. The Project area spans six ecoregions and four landcover types.

B.2.12.1. Information Sources for Vegetation and Ecological Communities

The presence/probable absence vegetation surveys for USDA Forest Service Regional Forester's Sensitive Species (RFSS) and watchlist species were conducted in 2022, 2023, and 2024 to characterize baseline conditions within NFS lands within the LMNG (WEST 2022, 2023, 2024; Grid United 2026b). The EIS analysis used these data to evaluate impacts on USDA Forest Service RFSS within these same NFS lands. Biological resources such as wetlands, waterbodies, and invasive and noxious weed occurrences were documented within the Project area.

B.2.12.2. Information Sources for Threatened and Endangered Species and Species of Concern

Threatened and endangered (T&E) species, Montana Species of Concern (SOC), North Dakota Species of Conservation Priority (SCP), and noxious weeds and invasive species data were retrieved from the Montana Natural Heritage Program (MTNHP), the North Dakota Game and Fish Department (NDGFD), and North Dakota Parks and Recreation. Data for ecoregion and habitat mapping were retrieved from the USEPA and the Montana Land Cover Framework (MLCF).

B.2.12.3. Methods of Analysis

The survey area on NFS lands within the LMNG included a 300-foot-wide transmission line corridor, a 100-foot-wide access road survey corridor, and pulling and tensioning sites on NFS lands and temporary construction impact areas (WEST 2022, 2023, 2024).

Habitat mapping was done through desktop and ground-based surveys. Surveyors walked transects to confirm findings from desktop analyses and documented notable plant species in tree/canopy, sapling/shrub, and herb strata in each land cover type (Grid United 2024).

B.2.13. Fisheries and Wildlife

The Proponent conducted various wildlife and wildlife habitat surveys between 2022 and 2025, including:

- Aerial raptor nest surveys in 2022 and 2023 (WEST 2023b, 2023d);
- Aerial surveys for greater sage-grouse (*Centrocercus urophasianus*) and sharp-tailed grouse (*Tympanuchus phasianellus*) leks Project-wide in 2022 and across Montana only in 2023 (WEST 2023c, 2023a);
- Dakota skipper (*Hesperia dacotae*) reproductive and foraging habitat surveys in 2023 and 2024 (WEST 2024b) and Dakota skipper presence/probable absence surveys in 2024 (both surveys are ongoing in 2025);
- Bat acoustic presence / probable absence surveys in summer habitat in 2023 and 2024 (ongoing in 2025), supplemental mist netting surveys in select locations in 2023 (WEST 2024a, 2025a), bat hibernacula assessment surveys in 2023 and 2024, and presence / probable absence at suitable hibernacula planned for the fall of 2025;
- Black-tailed prairie dog (*Cynomys ludovicianus*) colony mapping;
- Incidental observations for sensitive species identified during wetland/waterbody and general habitat surveys for the USDA Forest Service- and BLM-sensitive species and federally listed or protected species; and
- Aquatic resource inventory (ARI) during the summer and fall between 2022 and 2025 (WEST 2025a, 2026).

Desktop analysis for the Project was conducted by reviewing species listed under Montana's SOC, North Dakota's State Wildlife Action Plan (SWAP), BLM Special Status Species (SSS), USDA Forest Service RFSS, USFWS Birds of Conservation Concern (BCC), and the USFWS Information for Planning and Consultation (IPaC) resource list. The wildlife and fisheries analysis area is defined as the 300-foot-wide transmission line survey corridor, 50-foot-wide access road survey corridors, pulling and tensioning sites, laydown yards, facility footprints, additional construction areas (as needed), and wider 100-foot-wide access road survey corridors on the LMNG (Grid United 2025a). The IPaC assessment included a 1-mile buffer outside of the Project area. A list of species that could potentially occur in the wildlife and fisheries analysis area was compared to occurrence records (based on publicly available data, natural heritage inventory data, and/or survey data) and whether preferred habitats were available. Species with potential to occur in Project impact areas and with suitable habitat were evaluated for impacts. Aquatic species surveys were not conducted due to the Project spanning most waterbodies and anticipating few impacts.

The Migratory Bird Treaty Act (MBTA) of 1918 is a U.S. federal law designed to protect migratory bird species by making it illegal to hunt, capture, kill, or harm listed migratory birds, or their parts, nests, or eggs without prior authorization. The MBTA is based on treaties between the United States, Canada, Mexico, Japan, and Russia, which aim to safeguard migratory bird populations across international borders. The act covers over 1,000 bird species, ensuring their conservation and promoting sustainable management of habitats critical to their survival. Enforcement of the MBTA is key to preventing population declines and maintaining biodiversity.

The Bald and Golden Eagle Protection Act (BGEPA) prohibits the take, possession, transport, export, or import of bald or golden eagles, their parts, nests, or eggs, unless permitted. Take includes actions such as pursuing, shooting, or disturbing eagles to the point of causing injury, decreased productivity, or nest abandonment. If a project is proposed in areas where eagles nest, feed, or roost, additional conservation measures may be required to comply with the BGEPA.

B.2.14. Cumulative

NEPA requires not only an analysis of the reasonably foreseeable effects of the proposed agency action but also any reasonably foreseeable adverse environmental effects, which cannot be avoided, should the proposal be implemented (42 USC § 4332(c)(ii)). Federal agency guidance further clarifies that such reasonably foreseeable effects should have a “close causal relationship to the proposed action or alternatives” (7 CFR § 1b.11(a)(12)). The EIS also relies on DOE NEPA Implementing Procedures and the DOI Handbook of NEPA Implementing Procedures, both dated June 30, 2025.

For work areas in Montana, the analysis of such reasonably foreseeable effects was expanded to include the “collective or secondary impacts on the human environment, which are the impacts of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location or generic type,” as well as further impacts on the human environment that may be stimulated or induced by, or otherwise result from, a direct impact of the action (ARM 17.4.603(7) and (18)).

The following approach was used to identify and analyze reasonably foreseeable collective or secondary impacts:

- Identify the resources at risk or likely experience interactions with the Project (Chapter 3, Affected Environment and Environmental Consequences, of the EIS);
- Determine the geographic extent of evaluation for each potentially affected resource;
- Identify relevant past, present, and reasonably foreseeable future activities, including all federal, nonfederal, and private actions occurring within suitable boundaries surrounding the Project for consideration; and
- Determine and address potential additive, countervailing, and synergistic cumulative impacts from spatial or temporal overlap between the Project and the identified activities.

B.2.14.1. Resources and Geographic Extent of Evaluation

The area and location of a potentially affected resource provide the geographic extent of cumulative impacts and vary depending on resource and impact. Resources such as soil and vegetation may have direct, secondary, and cumulative impacts limited to within the Project area⁴, whereas resources such as noise and air quality may require a wider geographic extent.

Resources have been grouped as physical (non-living environmental components, including landscape, air, soils, and water), biological (living environmental components, including vegetation, wildlife, and aquatic ecology), social, and cultural for the purposes of the

⁴ “Project area” is the permanent, operational ROW and areas with temporary/permanent impacts within and outside of the ROW.

cumulative impact analysis due to potentially overlapping or similar impacts among these resource groups.

The general analysis area for cumulative impacts includes all counties crossed by the Project, with a wider area evaluated for impacts on social resources. Resource categories and their respective areas of evaluation for cumulative impacts are shown in Table 4.1-1.

B.2.14.2. Identification of Relevant Past, Present, and Reasonably Foreseeable Future Activities

Historically, Montana has undergone significant changes in vegetative cover and habitat suitability due to anthropogenic influences, particularly since Euro-American settlement in the 19th century. Since that time, the native grasslands that used to dominate eastern Montana have been partially converted, with approximately 66 percent of land converted to farms and ranches for livestock grazing pasture and rangeland and 28 percent converted to cropland (USDA NASS 2023). Agricultural and urban development has resulted in draining and filling of wetlands, further converting land use types. Current land cover in Montana is predominantly grass/pasture, shrubland, and mixed forest (USDA NASS 2024; USGS 2024).

Much of North Dakota was historically dominated by native mixed-grass and tallgrass prairies before development, which have been extensively converted to row-crop agriculture—primarily spring wheat, corn, soybean, canola, and sunflowers (USDA NASS 2024; USGS 2024). Generally, the larger shifts in land cover are due to urban development (i.e., major cities) and changes in land use from open prairie land to widespread ranching and agriculture.

Historical development and land transitions have been captured in the Affected Environment and Environmental Consequences sections by resource in Chapter 3.

In addition to the NEPA definition above, MEPA defines cumulative impacts as “the collective impacts on the human environment within the borders of Montana of the proposed action when considered in conjunction with other past, present, and future actions related to the proposed action by location or generic type” (§ 75-1-220, MCA). Under ARM 17.4.603(7), related future actions are those that are related to the Project by either location or generic type and “must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.”

Information on past, present, and reasonably foreseeable future activities within the geographic extent of the resources was provided by federal and state agencies and through research of publicly available resources (e.g., county and company websites). Activities include substation and transmission line upgrades, a coal ash pond cleanup, residential subdivisions and road projects, mining activities, oil and gas developments, ranching/grazing, a solar development, and multiple wind farms throughout the counties crossed by the Project in Montana and North Dakota.

The timeframe in which other activities may overlap with the Project includes construction and operations of the Project. Construction is expected to begin in 2027 and finish by 2032, with operations expected to last indefinitely. Operations would involve regular inspections and

occasional maintenance activities (e.g., tree removal, maintaining vegetation to approved heights within the ROW, possible spraying for weeds or invasive species, and maintenance of the transmission line infrastructure). Project construction and operation are discussed in detail in Chapter 2, Description of Alternatives, and impacts are discussed by resource in Chapter 3, Affected Environment and Environmental Consequences, of the EIS.

Impacts from past and existing projects within the Project area, such as those from ongoing agricultural grazing and air quality impacts from past or existing projects outside of the Project area, have generally been incorporated into the analysis of baseline conditions and impacts (Chapter 3 of the EIS). Relevant activities, including their locations and timeframes, were used to determine whether an activity would overlap in time and space with resources affected by the Project (Table 4.1-2).

B.3. TABLES

The following key terms used in tables in this appendix are defined as such:

- “Project area” is the permanent, operational ROW and areas with temporary/permanent impacts within and outside of the ROW.
- “Project impact areas” include temporary and permanent impacts (as defined below) for any part of the Project. Temporary and permanent impacts may be located within and outside of the maintained ROW.
 - “Temporary impacts” include ground disturbance activities (e.g., temporary access roads, overland travel, structure pads, wire pulling/tensioning sites, fiber/line splicing sites, guard structures, and fiber repeater stations) and vegetation clearing (allowed to regrow after construction). Temporary impacts would last through the construction period (short- to medium-term) or past construction (long-term).
 - “Permanent impacts” include ground disturbance activities (e.g., structures, facilities, and permanent access roads that would continue through operations) and vegetation clearing (permanently converted/removed). Permanent impacts would last after the construction period throughout operations (permanent).
- “ROW” is the permanent, operational ROW that would be maintained, which is different from the full length of the transmission line. The typical transmission line ROW would extend 100 feet on either side of the centerline (total ROW of 200 feet), but the Rosebud Transmission Line would have a typical ROW of 320 feet due to co-location of parallel lines.
- “Impact durations” are defined as short-term, medium-term, long-term, or permanent, as defined below:
 - “Short-term impacts” would occur from the start of construction through the first year of the Project.
 - “Medium-term impacts” would occur through the end of the 3- to 4-year construction window.
 - “Long-term impacts” would persist past construction.

B.3.1. Chapter 2

Table 2.1-1
Summary of Public Meeting Attendance

Location	Meeting Date and Time	Number of Attendees
Mandan, North Dakota	November 6, 2024, 4–7 p.m. (Central Standard Time)	37
Dickinson, North Dakota	November 7, 2024, 6–9 p.m. (Mountain Standard Time)	5
Miles City, Montana	November 12, 2024, 4–7 p.m. (Mountain Standard Time)	24
Colstrip, Montana	November 13, 2024, 6–9 p.m. (Mountain Standard Time)	7
Virtual	November 19, 2024, 12–3 p.m. (Mountain Standard Time)	40
Total		113

B.3.2. Chapter 3

B.3.2.1. Air Quality

Table 3.2-1
National Ambient Air Quality Standards

Criteria Pollutant	Class of Standard	Averaging Time	Level	Form
CO	Primary	8-Hour	9 ppm	Not to be exceeded more than once per year
		1-Hour	35 ppm	
Pb	Primary and Secondary	Rolling 3-Month Average	0.15 µg/m ³ ^a	Not to be exceeded
NO ₂	Primary	1-Hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	Annual	53 ppb ^b	Annual Mean
O ₃	Primary and Secondary	8-Hour	0.070 ppm ^c	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM ₁₀	Primary and Secondary	24-Hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
PM _{2.5}	Primary	Annual	9 µg/m ³	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24-Hour	35 µg/m ³	98th percentile, averaged over 3 years

Criteria Pollutant	Class of Standard	Averaging Time	Level	Form
SO ₂	Primary	1-Hour	75 ppb ^d	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	Annual	10 ppb	Annual mean, averaged over 3 years

Source: USEPA 2024c

µg/m³ = micrograms per cubic meter; CO = carbon monoxide; NO₂ = nitrogen dioxide; O₃ = ozone; Pb = lead; PM₁₀ = particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 microns or less; ppb = parts per billion; ppm = parts per million; SO₂ = sulfur dioxide

Notes:

^a Final rule signed October 15, 2008. The 1978 Pb standard (1.5 micrograms per cubic meter [µg/m³] as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as nonattainment for the Final rule signed October 15, 2008.

^b The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

^c Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

^d Final rule signed June 2, 2010; the 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Table 3.2-2
Federal Class I Areas

Class I Area	State	Nearest Project Component	Distance and Direction from Project
Theodore Roosevelt National Park	North Dakota	HVDC Transmission Line	26 miles north
Northern Cheyenne Reservation	Montana	Rosebud County Converter Station	14 miles southeast

Source: NPS 2025b

HVDC = high-voltage direct current

**Table 3.2-3
Regional Climate Data**

Meteorological Station	Station Name, State	Average Maximum Daily Temperature (°F)	Average Minimum Daily Temperature (°F)	Average Annual Precipitation (inches)
USW00024037	Miles City Airport, Montana	58.96	33.30	12.04
USW00094055	Baker Municipal Airport, Montana	56.88	31.13	14.29
USC00320995	Bowman, North Dakota	55.17	30.99	16.95
USW00024011	Bismarck Municipal Airport, North Dakota	56.19	32.06	17.60

Source: NOAA 2025

°F = degrees Fahrenheit

**Table 3.2-4
Ambient Air Quality Concentrations at Miles City, Montana**

Pollutant	Averaging Period	Rank	2021	2022	2023	2-Year Average	Units	Monitor Number	NAAQS
PM ₁₀	24-Hour	2nd	N/A	61	94	78	µg/m ³	30-017-0005	150
PM _{2.5}	24-Hour	98%	N/A	13	48.0	31	µg/m ³	30-017-0005	35
	Annual	Mean	N/A	5.2	8.2	6.7	µg/m ³	30-017-0005	9
NO ₂	Annual	Mean	N/A	3.8	3.6	3.7	ppb	30-017-0005	53
	1-Hour	98%	N/A	29	24	27	ppb	30-017-0005	100
O ₃	8-Hour	4th	N/A	0.058	0.059	0.0585	ppm	30-017-0005	0.070

Source: USEPA 2025c

µg/m³ = micrograms per cubic meter; N/A = data not available; NAAQS = National Ambient Air Quality Standards; NO₂ = nitrogen oxides; O₃ = ozone; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM₁₀ = particulate matter with an aerodynamic diameter of 10 micrometers or less; ppb = parts per billion; ppm = parts per million

**Table 3.2-5
Ambient Air Quality Concentrations at Bismarck, North Dakota**

Pollutant	Averaging Period	Rank	2020	2021	2022	3-Year Average	Units	Monitor Number	NAAQS
SO ₂	1-Hour	99%	11	12	7	10.0	ppb	38-015-0003	75
	Annual	Mean	0.43	0.46	0.4	0.43	ppb	38-015-0003	500
PM ₁₀	24-Hour	2nd	64	135	83	94	µg/m ³	38-015-0003	150

Pollutant	Averaging Period	Rank	2020	2021	2022	3-Year Average	Units	Monitor Number	NAAQS
PM _{2.5}	24-Hour	98%	15	47	21	27.7	µg/m ³	38-015-0003	35
	Annual	Mean	5.4	9.8	8.2	7.8	µg/m ³	38-015-0003	9
NO ₂	Annual	Mean	4.6	4.5	4.4	4.5	ppb	38-015-0003	53
	1-Hour	98%	28	30	32	30	ppb	38-015-0003	100
CO	8-Hour	2nd	0.5	0.8	0.4	0.6	ppm	38-015-0003	9
	1-Hour	2nd	0.6	1.3	0.7	0.9	ppm	38-015-0003	35
O ₃	8-Hour	4th	0.051	0.06	0.046	0.052	ppm	38-015-0003	0.070

Source: USEPA 2025c

µg/m³ = micrograms per cubic meter; CO = carbon monoxide; NAAQS = National Ambient Air Quality Standards; NO₂ = nitrogen oxides; O₃ = ozone; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM₁₀ = particulate matter with an aerodynamic diameter of 10 micrometers or less; ppb = parts per billion; ppm = parts per million; SO₂ = sulfur dioxide

Table 3.2-6
Summary of Criteria Pollutant Construction Emissions (tons)

Proposed Alternative Component / State / Emission Source	Criteria Pollutants						HAPs	
	CO	NO _x	SO ₂	VOC	PM ₁₀	PM _{2.5}	Formaldehyde	Total HAPs
Rosebud Transmission Line (Montana)								
Emissions from construction engines	1.11	6.63	0.01	0.25	0.20	0.19	0.07	0.19
Fugitive dust from unpaved roads	--	--	--	--	1.35	0.14	--	--
Fugitive dust from earthmoving	--	--	--	--	5.36	0.57	--	--
Emissions from concrete batch plants	--	--	--	--	0.09	0.09	--	--
Emissions from helicopters	1.13	30.71	--	0.95	0.34	0.34	0.18	0.29
<i>Subtotal</i>	<i>2.24</i>	<i>37.33</i>	<i>0.01</i>	<i>1.20</i>	<i>7.35</i>	<i>1.33</i>	<i>0.24</i>	<i>0.48</i>
HVDC Transmission Line (Montana)								
Emissions from construction engines	12.45	90.61	0.10	3.10	2.37	2.30	0.82	2.41
Fugitive dust from unpaved roads	--	--	--	--	5.42	0.54	--	--
Fugitive dust from earthmoving	--	--	--	--	196.28	20.68	--	--
Emissions from concrete batch plants	--	--	--	--	1.79	1.79	--	--
Emissions from helicopters	2.66	71.97	--	2.23	0.81	0.81	0.42	0.68
<i>Subtotal</i>	<i>15.11</i>	<i>162.58</i>	<i>0.10</i>	<i>5.33</i>	<i>206.67</i>	<i>26.12</i>	<i>1.23</i>	<i>3.09</i>

Proposed Alternative Component / State / Emission Source	Criteria Pollutants						HAPs	
	CO	NO _x	SO ₂	VOC	PM ₁₀	PM _{2.5}	Formaldehyde	Total HAPs
HVDC Transmission Line (North Dakota)								
Emissions from construction engines	11.60	90.14	0.10	2.71	2.30	2.23	0.73	2.16
Fugitive dust from unpaved roads	--	--	--	--	5.39	0.54	--	--
Fugitive dust from earthmoving	--	--	--	--	62.75	6.61	--	--
Emissions from concrete batch plants	--	--	--	--	1.64	1.64	--	--
Emissions from helicopters	2.66	71.97	--	2.23	0.81	0.81	0.42	0.68
<i>Subtotal</i>	<i>14.26</i>	<i>162.11</i>	<i>0.10</i>	<i>4.94</i>	<i>72.88</i>	<i>11.83</i>	<i>1.15</i>	<i>2.84</i>
Morton Transmission Line (North Dakota)								
Emissions from construction engines	5.69	29.99	0.04	1.09	1.03	1.00	0.29	0.87
Fugitive dust from unpaved roads	--	--	--	--	2.70	0.27	--	--
Fugitive dust from earthmoving	--	--	--	--	17.87	1.89	--	--
Emissions from concrete batch plants	--	--	--	--	0.24	0.24	--	--
Emissions from helicopters	1.27	34.54	--	1.07	0.39	0.39	0.20	0.33
<i>Subtotal</i>	<i>6.96</i>	<i>64.53</i>	<i>0.04</i>	<i>2.16</i>	<i>22.23</i>	<i>3.78</i>	<i>0.49</i>	<i>1.19</i>
Oliver Transmission Line (North Dakota)								
Emissions from construction engines	5.58	27.75	0.03	1.05	1.02	0.99	0.28	0.83
Fugitive dust from unpaved roads	--	--	--	--	4.05	0.41	--	--
Fugitive dust from earthmoving	--	--	--	--	51.89	5.47	--	--
Emissions from concrete batch plants	--	--	--	--	0.60	0.60	--	--
Emissions from helicopters	1.56	42.22	--	1.31	0.47	0.47	0.24	0.40
<i>Subtotal</i>	<i>7.14</i>	<i>69.97</i>	<i>0.03</i>	<i>2.36</i>	<i>58.02</i>	<i>7.93</i>	<i>0.53</i>	<i>1.23</i>
Rosebud County Converter Station (Montana)								
Emissions from construction engines	17.47	128.40	0.14	4.29	3.27	3.17	1.13	3.34
Fugitive dust from unpaved roads	--	--	--	--	7.59	0.76	--	--
Fugitive dust from earthmoving	--	--	--	--	11.87	1.25	--	--
Emissions from concrete batch plants	--	--	--	--	0.03	0.03	--	--

Proposed Alternative Component / State / Emission Source	Criteria Pollutants						HAPs	
	CO	NO _x	SO ₂	VOC	PM ₁₀	PM _{2.5}	Formaldehyde	Total HAPs
Emissions from helicopters	--	--	--	--	--	--	--	--
<i>Subtotal</i>	<i>17.47</i>	<i>128.40</i>	<i>0.14</i>	<i>4.29</i>	<i>22.76</i>	<i>5.21</i>	<i>1.13</i>	<i>3.34</i>
Morton County Converter Station (North Dakota)								
Emissions from construction engines	16.78	129.55	0.14	3.94	3.21	3.12	1.06	3.14
Fugitive dust from unpaved roads	--	--	--	--	7.59	0.76	--	--
Fugitive dust from earthmoving	--	--	--	--	6.50	0.69	--	--
Emissions from concrete batch plants	--	--	--	--	0.03	0.03	--	--
Emissions from helicopters	--	--	--	--	--	--	--	--
<i>Subtotal</i>	<i>16.78</i>	<i>129.55</i>	<i>0.14</i>	<i>3.94</i>	<i>17.34</i>	<i>4.59</i>	<i>1.06</i>	<i>3.14</i>
Morton County Switchyard (North Dakota)								
Emissions from construction engines	7.39	42.58	0.05	1.55	1.32	1.28	0.42	1.23
Fugitive dust from unpaved roads	--	--	--	--	3.80	0.38	--	--
Fugitive dust from earthmoving	--	--	--	--	1.39	0.15	--	--
Emissions from concrete batch plants	--	--	--	--	0.00	0.00	--	--
Emissions from helicopters	--	--	--	--	--	--	--	--
<i>Subtotal</i>	<i>7.39</i>	<i>42.58</i>	<i>0.05</i>	<i>1.55</i>	<i>6.50</i>	<i>1.80</i>	<i>0.42</i>	<i>1.23</i>
Total Proposed Alternative								
Emissions from construction engines	78.07	545.64	0.61	17.97	14.72	14.28	4.81	14.18
Fugitive dust from unpaved roads	--	--	--	--	37.89	3.79	--	--
Fugitive dust from earthmoving	--	--	--	--	353.92	37.31	--	--
Emissions from concrete batch plants	--	--	--	--	4.40	4.40	--	--
Emissions from helicopters	9.28	251.40	0.00	7.80	2.82	2.82	1.45	2.38
Proposed Alternative Total	87.35	797.04	0.61	25.78	413.76	62.60	6.26	16.55

Source: USEPA 2025b; Grid United 2026

CO = carbon monoxide; HAP = hazardous air pollutant; HVDC = high-voltage direct current; NO_x = nitrogen oxides; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM₁₀ = particulate matter with an aerodynamic diameter of 10 micrometers or less; SO₂ = sulfur dioxide; VOC = volatile organic compound

Table 3.2-7
Proposed Alternative Summary of Greenhouse Gas Construction Emissions

Proposed Alternative Component / State / Emission Source	CO₂ (tons)	CH₄ (tons)	N₂O (tons)	CO_{2e} (tons)	CO_{2e} (metric tons)
Rosebud Transmission Line (Montana)					
Emissions from on-road commuter vehicles	--	--	--	529.00	479.90
Emissions from construction engines	2,872.47	0.01	0.01	2,874.77	2,607.95
Emissions from helicopter engines	3,897.59	0.16	0.03	3,910.70	3,547.73
<i>Subtotal</i>	<i>6,770.06</i>	<i>0.17</i>	<i>0.04</i>	<i>7,314.47</i>	<i>6,635.57</i>
HVDC Transmission Line (Montana)					
Emissions from on-road commuter vehicles	--	--	--	3,538.89	3,210.43
Emissions from construction engines	15,414.38	0.13	0.10	15,444.02	14,010.59
Emissions from helicopter engines	9,134.97	0.38	0.08	9,165.70	8,314.99
<i>Subtotal</i>	<i>24,549.35</i>	<i>0.51</i>	<i>0.17</i>	<i>28,148.62</i>	<i>25,536.00</i>
Rosebud County Converter Station (Montana)					
Emissions from on-road commuter vehicles	--	--	--	3,173.98	2,879.39
Emissions from construction engines	18,102.43	0.13	0.15	18,145.59	16,461.40
Emissions from helicopter engines	--	--	--	--	--
<i>Subtotal</i>	<i>18,102.43</i>	<i>0.13</i>	<i>0.15</i>	<i>21,319.57</i>	<i>19,340.79</i>
HVDC Transmission Line (North Dakota)					
Emissions from on-road commuter vehicles	--	--	--	3,514.40	3,188.21
Emissions from construction engines	15,411.69	0.13	0.04	15,424.87	13,993.21
Emissions from helicopter engines	9,134.97	0.38	0.08	9,165.70	8,314.99
<i>Subtotal</i>	<i>24,546.65</i>	<i>0.50</i>	<i>0.11</i>	<i>28,104.97</i>	<i>25,496.41</i>
Morton Transmission Line (North Dakota)					
Emissions from on-road commuter vehicles	--	--	--	1,763.32	1,599.66
Emissions from construction engines	15,411.69	0.13	0.04	15,424.87	13,993.21
Emissions from helicopter engines	4,384.78	0.18	0.04	4,399.54	3,991.19
<i>Subtotal</i>	<i>19,796.47</i>	<i>0.31</i>	<i>0.07</i>	<i>21,587.73</i>	<i>19,584.06</i>
Oliver Transmission Line (North Dakota)					
Emissions from on-road commuter vehicles	--	--	--	2,644.98	2,399.49
Emissions from construction engines	15,411.69	0.13	0.03	15,423.37	13,991.85
Emissions from helicopter engines	5,359.18	0.22	0.04	5,377.21	4,878.13
<i>Subtotal</i>	<i>20,770.87</i>	<i>0.35</i>	<i>0.08</i>	<i>23,445.57</i>	<i>21,269.47</i>
Morton County Converter Station (North Dakota)					
Emissions from on-road commuter vehicles	--	--	--	3,173.98	2,879.39
Emissions from construction engines	18,102.43	0.13	0.15	18,145.24	16,461.09

Proposed Alternative Component / State / Emission Source	CO ₂ (tons)	CH ₄ (tons)	N ₂ O (tons)	CO _{2e} (tons)	CO _{2e} (metric tons)
Emissions from helicopter engines	--	--	--	--	--
<i>Subtotal</i>	<i>18,102.43</i>	<i>0.13</i>	<i>0.15</i>	<i>21,319.22</i>	<i>19,035.02</i>
Morton County Switchyard (North Dakota)					
Emissions from on-road commuter vehicles	--	--	--	1,586.99	1,439.69
Emissions from construction engines	18,102.43	0.13	0.05	18,118.94	16,437.23
Emissions from helicopter engines	--	--	--	--	--
<i>Subtotal</i>	<i>18,102.43</i>	<i>0.13</i>	<i>0.05</i>	<i>19,705.93</i>	<i>17,876.92</i>
Total Proposed Alternative					
Emissions from on-road commuter vehicles	--	--	--	19,925.55	18,076.16
Emissions from construction engines	118,829.22	0.91	0.55	119,001.66	107,956.52
Emissions from helicopter engines	31,911.48	1.33	0.27	32,018.86	29,047.03
Proposed Alternative Total	150,740.70	2.24	0.82	170,946.06	155,079.70

Source: USEPA 2025b; Grid United 2026

CH₄ = methane; CO₂ = carbon dioxide; CO_{2e} = carbon dioxide equivalent; HVDC = high-voltage direct current; N₂O = nitrous oxide

Table 3.2-8
Total Reported Emissions of Criteria Pollutants in Montana and North Dakota

State	Criteria Pollutants (tons)					
	CO	NO _x	SO ₂	VOC	PM ₁₀	PM _{2.5}
Montana	707,219	76,731	4,142	518,973	443,861	105,031
North Dakota	346,560	128,239	37,531	450,050	313,663	67,601

Source: USEPA 2023

CO = carbon monoxide; NO_x = nitrogen oxides; PM_{2.5} = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM₁₀ = particulate matter with an aerodynamic diameter of 10 micrometers or less; SO₂ = sulfur dioxide; VOC = volatile organic compound

B.3.2.2. Cultural/Tribal/Historic Resources

Table 3.3-1
Previously Recorded Sites that Cross the Project Impact Areas in Montana

Site ID	Category	Site Type	NRHP
24CR0452	Precontact	Lithic material concentration	Undetermined
24CR0455	Precontact	Lithic material concentration	Undetermined
24CR0739	Precontact	Lithic material concentration	Undetermined
24CR0767	Historic	Historic homestead/farmstead	Ineligible
24CR0771	Historic	Historic irrigation system	Eligible

Site ID	Category	Site Type	NRHP
24CR0908	Precontact	Lithic material concentration	Not eligible
24CR909	Precontact	Stone circle and lithic material concentration	Undetermined
24CR1264	Historic	Lewis and Clark National Historic Trail on the Yellowstone	Undetermined
24CR1277	Precontact	Lithic material concentration	Undetermined
24CR1617	Historic	Historic road/trail	Undetermined
24CR1624	Historic	Historic road/trail	Undetermined
24FA0011	Precontact	Lithic material concentration	Undetermined
24FA0012	Precontact	Lithic material concentration	Ineligible
24FA0155	Precontact	Lithic material concentration and carin	Ineligible
24FA0286	Precontact	Campsite	Ineligible
24FA0287	Historic	Historic trash dump	Undetermined
24FA0334	Precontact	Lithic material concentration	Unevaluated
24FA0382	Historic	Historic railroad	Eligible
24FA0608	Historic	Historic energy development	Ineligible
24FA0764	Precontact	Lithic material concentration and fire hearths or roasting pit	Undetermined
24FA0765	Precontact	Lithic material concentration and fire cracked rock	Ineligible
24FA0963	Historic	Butte Pipeline	Ineligible
24FA0985	Historic	Historic energy development	Ineligible
24RB0860	Precontact	Lithic material concentration	Ineligible
24RB0991	Precontact	Historic energy development	Ineligible
24RB0994	Precontact	Workshop	Ineligible
24RB2234	Historic	Historic railroad	Eligible

Source: Grid United 2025

ID = identification; NRHP = National Register of Historic Places

Table 3.3-2
Previously Recorded Sites that Cross the Project Impact Areas in North Dakota

Site ID	Category	Site Type	NRHP
32GTX5	Precontact	Cultural material scatter	Unevaluated
32GTX61	Precontact	Rock art	Unevaluated
32HT129	Historic	Chicago, Milwaukee, St. Paul Railroad Segment	Not Eligible
32MOX39	Historic	Custer Military Camp	Unevaluated
32SLX59	Precontact	Chipped stone	Not Eligible
32SLX88	Historic	Coal mine	Unevaluated

Source: Grid United 2024, 2025

ID = identification; NRHP = National Register of Historic Places

B.3.2.3. Public Health and Safety

Table 3.4-1
Calculated Electromagnetic Field Strength in and at the Edge of the Right-of-Way for the Chosen Conductors

Conductor/Field Impact	Maximum Within ROW	At Edge of ROW
3-2156 Bluebird Conductor— HVDC Transmission Line		
Static electric field	7.0 kV/meter	3.5 kV/meter
Space charge electric field (fair weather)	20.8kV/meter	9.9 kV/meter
Magnetic field	462 mG	345 mG
2-1590 Falcon Conductor— Oliver and Morton Transmission Lines		
Electric field	6.4 kV/meter	0.4 kV/meter
Magnetic field	260 mG	30 mG
3-1590 Falcon Conductor— Rosebud Transmission Line		
Electric field	9.9 kV/meter	1.3 kV/meter
Magnetic field	370 mG	70 mG

Source: Grid United 2026

kV = kilovolt; mG = milligauss; ROW = right-of-way

Table 3.4-2
Typical Electromagnetic Field Values for Commonly Used Electrical and Electronic Gadgets

Device	Frequency	Electric Field (kV/meter)	Magnetic Field (mG)
Cell phone	800 MHz–2.6 GHz	0.00–0.01 kV/meter	1.00–70.00 mG
Laptop	50 Hz / wi-fi 2.4–5 GHz	0.00–0.02 kV/meter	5.00–30.00 mG
Tablet	Wi-Fi 2.4 –5 GHz	0.00–0.01 kV/meter	1.00 –10.00 mG
Microwave oven	2.45 GHz	Up to 0.10 kV/meter	1.00–100.00 mG
Wi-fi router	2.4 GHz / 5 GHz	0.00–0.01 kV/meter	<1.00 mG
Bluetooth device	2.4 GHz	<0.00 kV/meter	<0.10 mG
Smartwatch	2.4 GHz	<0.00 kV/meter	<0.10 mG
Electric stove	50/60 Hz	0.01–0.20 kV/meter	5.00–500.00 mG
Hair dryer	50/60 Hz	0.08–0.20 kV/meter	1.00–300.00 mG
Refrigerator	50/60 Hz	0.01–0.03 kV/meter	1.00–10.00 mG
Television	50/60 Hz	0.00–0.02 kV/meter	1.00–10.00 mG

GHz = gigahertz; Hz = hertz; kV = kilovolt; mG = milligauss; MHz = megahertz; wi-fi = Wireless Fidelity

B.3.2.4. Groundwater Hydrology

Table 3.5-1
Private Water Supply Wells within 150 Feet of Project Impact Areas

County/State	Nearest MP	Distance from Project Impact Areas (feet)	Site/Well Name	Well ID
Rosebud Transmission Line				
Rosebud, Montana	0.0	Within impact area	Colstrip Landfill	137801
Rosebud, Montana	0.0	Within impact area	Colstrip Landfill	137802
Rosebud, Montana	0.0	Within impact area	Colstrip Landfill	137803
Rosebud, Montana	0.0	Within impact area	Colstrip Landfill	137804
Rosebud, Montana	0.3	45	MBMG	168397
Rosebud, Montana	0.3	51	Montana Power Company	138342
Rosebud, Montana	0.3	110	PPL Montana, LLC	203276
Rosebud, Montana	0.3	110	PPL Montana, LLC	203277
Rosebud, Montana	2.8	Within impact area	Western Energy Company	124250
Rosebud, Montana	2.8	29	MBMG	168396
Rosebud, Montana	3.0	142	MBMG MW S-12	1103
HVDC Transmission Line				
Rosebud County, Montana	0.0	39	PPL Montana, LLC	181844
Rosebud County, Montana	0.1	133	PPL Montana, LLC	181843
Rosebud County, Montana	0.5	59	PPL Montana, LLC	180341
Rosebud County, Montana	1.9	42	Western Energy Company	231187
Rosebud County, Montana	2.4	36	Western Energy Company	124195
Rosebud County, Montana	2.4	36	Western Energy Company	124200
Rosebud County, Montana	2.4	36	Western Energy Company	124240
Rosebud County, Montana	2.4	141	Western Energy Company	203208
Rosebud County, Montana	2.5	82	Western Energy Company	203204
Rosebud County, Montana	3.2	Within impact area	Western Energy Company	203194
Rosebud County, Montana	3.2	Within impact area	Western Energy Company	203199

County/State	Nearest MP	Distance from Project Impact Areas (feet)	Site/Well Name	Well ID
Rosebud County, Montana	5.4	38	East Fork Armells Near Colstrip, Montana	1225
Rosebud County, Montana	6.8	53	Wimer, T.; 4 MI NE Rosebud Mine	1117
Rosebud County, Montana	13.5	50	Rosebud Creek Below Spring Creek near Rosebud, Montana	191122
Rosebud County, Montana	17.1	127	Rosebud Creek Ranch LLC	247842
Rosebud County, Montana	22.4	Within impact area	Davison, V.P.; 1.6 MI S Crain Place, Montana	1238
Rosebud County, Montana	23.3	142	Davison, V.P.; 1.75 MI S Crain Place, Montana	1237
Rosebud County, Montana	25.9	62	NPRR-1	903577
Rosebud County, Montana	40.0	72	Vision Enterprises RMC LLC	315888
Rosebud County, Montana	41.8	Within impact area	MBMG Research Well Hathaway – 1A	1557
Rosebud County, Montana	41.8	Within impact area	MBMG Research Well Hathaway – 1B	1558
Rosebud County, Montana	41.8	Within impact area	MBMG Research Well Hathaway – 1C	1559
Custer, Montana	63.3	Within impact area	Jones, Bill	18981
Custer, Montana	83.7	127	Giesicke, R.	17423
Custer, Montana	110.2	17	Almy, Patricia	297770
Custer, Montana	116.4	116	Oster, George	21937
Fallon County, Montana	132.5	58	Stat. No. 44-36	898483
Fallon County, Montana	132.5	129	Stat. No. 44-36	907137
Fallon County, Montana	138.9	2	Lang, Christ	22035
Fallon County, Montana	139.2	146	St. Anthony Catholic Cemetery	22030
Fallon County, Montana	139.3	Within impact area	Husky	304030
Fallon County, Montana	149.0	42	Pennell-I	700354
Fallon County, Montana	149.1	1	Schell, Herb	22060

County/State	Nearest MP	Distance from Project Impact Areas (feet)	Site/Well Name	Well ID
Fallon County, Montana	150.7	150	State 31-36	905717
Fallon County, Montana	151.4	118	Govt-Vinsel 24-30C	899396
Fallon County, Montana	156.9	112	Losing, Ralph	1682
Fallon County, Montana	157.1	Within impact area	Losing, Ralph	186266
Golden Valley County, North Dakota	174.9	Within impact area	Gregory Water & Energy	136106200ACD
Slope County, North Dakota	194.1	Within impact area	Gregory Drilling (test hole drilled in 1991)	13510308BB
Slope County, North Dakota	240.2	114	Earth Energy and Water Systems	13509822AB
Slope County, North Dakota	240.4	50	Earth Energy and Water Systems	13509822A
Hettinger County, North Dakota	247.4	Within impact area	Tysver Well Drilling	13509728AAA
Oliver Transmission Line				
Morton County, North Dakota	23.2	82	Zachmeier Well Drilling	13808215
Morton County, North Dakota	25.9	44	Zachmeier Well Drilling	13908234DC
Morton County, North Dakota	26.2	53	Wetch & Sons Drilling	13908234DBB
Morton Transmission Line				
Morton County, North Dakota	2.3	Within impact area	Zachmeier Well Drilling	13508306DBD

Source: Grid United 2024, 2026; NDDWR 2024

ID = identification; MBMG = Montana Bureau of Mines and Geology

Table 3.5-2
Contaminated Sites within 1 Mile of Project Impact Areas

Transmission Line / County / State	Nearest MP	Distance from Project Impact Areas (miles)	USEPA Facility Type	Primary Name
Rosebud Transmission Line				
Rosebud County, Montana	0	0.6	SEMS, ACRES, RCRA	City of Colstrip, City Shop
Rosebud County, Montana	0	0.8	RCRA	City of Colstrip, District 19
Rosebud County, Montana	0	0.9	RCRA	Valley Motor Supply Co.
Rosebud County, Montana	0	0.9	RCRA	Sage
Rosebud County, Montana	0	1.0	RCRA	Westmoreland Rosebud Mining, LLC
Rosebud County, Montana	0.1	0.4	SEMS, TRI, RCRA	PPL Colstrip Steam Electric Station
Rosebud County, Montana	0.2	0.1	TSCA	Unnamed
HVDC Transmission Line				
Rosebud County, Montana	5.5	0.2	SEMS, TRI, RCRA	Colstrip Energy LP Rosebud Power Plant
Fallon County, Montana	138.8	0.6	RCRA	BNSF Railway Company MP 1030
Oliver Transmission Line				
Morton, North Dakota	30.6	0.4	RCRA	Mayo Systems
Morton Transmission Line				
No contaminated sites within 1 mile	NA	NA	NA	NA

Source: Grid United 2024, 2026

ACRES = Assessment, Cleanup, and Redevelopment Exchanged System; MP = Milepost; NA = not applicable; RCRA = Resource Conservation and Recovery Act; SEMS = Superfund Enterprise Management Systems; TRI = Toxic Release Inventory; TSCA = Toxic Substances Control Act; USEPA = U.S. Environmental Protection Agency

B.3.2.5. Surface Water Hydrology

**Table 3.6-1
Hydrologic Unit Code Watersheds Crossed by the Project**

Transmission Line / County / State	MP	Watershed Name (HUC 8)
Rosebud Transmission Lines (1, 2, 3, and 4)		
Rosebud County, Montana	0.0–0.8 (Rosebud 1)	10100001–Lower Yellowstone-Sunday
	0.8–2.8 (Rosebud 1)	10100003–Rosebud
	0.0–1.1 (Rosebud 2)	10100001–Lower Yellowstone-Sunday
	1.1–3.2 (Rosebud 2)	10100003–Rosebud
	0.0–0.3 (Rosebud 3)	10100003–Rosebud
	0.0–0.4 (Rosebud 4)	10100003–Rosebud
HVDC Transmission Line		
Rosebud County, Montana	0.0–24.9	10100003–Rosebud
	24.9–25.3	10090102–Lower Tongue
	25.3–25.5	10100003–Rosebud
	25.5–27.5	10090102–Lower Tongue
	27.5–29.3	10100001–Lower Yellowstone-Sunday
Custer County, Montana	29.3–32.0	10100001–Lower Yellowstone-Sunday
	32.0–32.5	10090102–Lower Tongue
	32.5–32.6	10100001–Lower Yellowstone-Sunday
	32.6–33.1	10090102–Lower Tongue
	33.1–33.2	10100001–Lower Yellowstone-Sunday
	33.2–33.2	10090102–Lower Tongue
	33.2–35.5	10100001–Lower Yellowstone-Sunday
Rosebud County, Montana	35.5–42.9	10100001–Lower Yellowstone-Sunday
Custer County, Montana	42.9–57.8	10100001–Lower Yellowstone-Sunday
	57.8–81.2	10090102–Lower Tongue
	81.2–86.5	10090210–Mizpah
	86.5–114.5	10090209–Lower Powder
	114.5–117.9	10100005–O'Fallon
Fallon County, Montana	117.9–157.0	10100005–O'Fallon
	157.0–163.2	10110203–Middle Little Missouri
	163.2–170.8	10110204–Beaver
	170.8–171.8	10110203–Middle Little Missouri
	171.8–173.5	10110204–Beaver
Golden Valley, North Dakota	173.5–174.6	10110204–Beaver
	174.6–186.6	10110203–Middle Little Missouri

Transmission Line / County / State	MP	Watershed Name (HUC 8)
Slope County, North Dakota	186.6–215.7	10110203–Middle Little Missouri
	215.7–242.8	10130204–Upper Cannonball
Hettinger County, North Dakota	242.8–286.8	10130204–Upper Cannonball
	286.8–288.5	10130202–Upper Heart
	288.5–290.5	10130203–Lower Heart
	290.5–290.6	10130202–Upper Heart
	290.6–290.9	10130203–Lower Heart
	290.9–291.5	10130202–Upper Heart
	291.5–293.7	10130203–Lower Heart
Grant County, North Dakota	293.7–293.9	10130203–Lower Heart
	293.9–296.2	10130202–Upper Heart
	296.2–297.1	10130203–Lower Heart
	297.1–298.1	10130202–Upper Heart
	298.1–302.6	10130203–Lower Heart
	302.6–302.7	10130202–Upper Heart
	302.7–335.0	10130203–Lower Heart
Morton County, North Dakota	335.0–341.6	10130203–Lower Heart
Oliver Transmission Line		
Morton County, North Dakota	0.0–0.5	10130203–Lower Heart
	0.5–9.2	10130206–Lower Cannonball
	9.2 – 17.9	10130102–Upper Lake Oahe
	17.9–30.7	10130203–Lower Heart
Oliver County, North Dakota	30.7–41.2	10130101–Painted Woods-Square Butte
	41.2–51.7	10130101–Painted Woods-Square Butte
Morton Transmission Line		
Morton County, North Dakota	0–0.6	10130203–Lower Heart
	0.6–8.3	10130206–Lower Cannonball
	8.3–8.6	10130102–Upper Lake Oahe
	8.6–10.9	10130206–Lower Cannonball
	10.9–17.7	10130102–Upper Lake Oahe
	17.7–21.8	10130206–Lower Cannonball

Source: Grid United 2025a, 2026a

HUC = hydrologic unit code; HVDC = high-voltage direct current; MP = Milepost

Table 3.6-2
Summary of Potentially Affected Areas of Hydrologic Unit Code 8 Watersheds Crossed by the Project

Transmission Line / HUC 8 Subbasin	HUC 8 No.	Total HUC 8 Area (acres) ^a	Waterbodies Crossed by Temporary Impact Areas (count)	Temporary Waterbody Impacts in HUC 8 (acres)	Percent of HUC 8 with Direct Temporary Waterbody Impacts (%)	Waterbodies Crossed by Permanent Impact Areas (count)	Permanent Waterbody Impacts in HUC 8 (acres)	Percent of HUC 8 with Direct Permanent Waterbody Impacts (%)	Temporary Impact Area Within HUC 8 (acres)	Percent of HUC 8 that is Temporary Impact Areas (%)	Permanent Impact Area Within HUC 8 ^b (acres)	Percent of HUC 8 that is Permanent Impact Area (%)	Total Impact Areas Within HUC 8 ^b (acres)	Percent of HUC 8 that is Impact Area (%)	Tree Clearing Acres in HUC 8 ^c (acres)	Percent of HUC 8 Tree Clearing (%)
MONTANA																
Rosebud Transmission Lines 1, 2, 3, and 4																
Lower Yellowstone-Sunday	10100001	3,075,711	1	0.02	<0.001	0	0.00	0.000	23.03	0.001	0.05	<0.001	23.08	0.001	5.03	<0.001
Rosebud	10100003	837,053	0	0.00	0.000	0	0.00	0.000	41.53	0.005	0.94	<0.001	42.47	0.005	24.16	0.003
HVDC Transmission Line																
Rosebud	10100003	837,053	12	0.04	<0.001	9	0.05	<0.001	277.54	0.033	106.20	0.013	383.73	0.046	114.60	0.014
Lower Tongue	10090102	1,838,103	6	0.02	<0.001	18	0.12	<0.001	231.40	0.013	106.20	0.006	383.73	0.021	67.39	0.004
Lower Yellowstone-Sunday	10100001	3,075,711	22	0.09	<0.001	29	0.16	<0.001	264.05	0.009	41.66	0.001	305.71	0.010	99.59	0.003
Mizpah	10090210	514,324	1	0.01	<0.001	40	0.21	<0.001	39.95	0.008	42.24	0.008	82.19	0.016	11.39	0.002
Lower Powder	10090209	1,201,402	26	0.14	<0.001	1	0.01	<0.001	307.89	0.026	16.36	0.001	324.25	0.027	72.28	0.006
O'Fallon	10100005	1,011,091	14	0.27	<0.001	1	0.03	0.000	464.92	0.046	5.95	0.001	470.87	0.047	38.63	0.004
Middle Little Missouri	10110203	1,390,766	1	0.02	<0.001	2	0.01	<0.001	81.39	0.006	5.33	<0.001	86.72	0.006	20.95	0.002
Beaver	10110204	557,930	0	0.00	0.000	0	0.00	0.000	99.16	0.018	0.19	<0.001	99.35	0.018	3.81	0.001
Facilities																
Rosebud	10100003	837,053	0	0.00	0.000	0	0.00	0.000	19.25	0.002	24.04	0.003	43.29	0.005	0.82	<0.001
Lower Yellowstone-Sunday	10100001	3,075,711	0	0.00	0.000	0	0.00	0.000	0.07	<0.001	14.67	<0.001	14.74	<0.001	1.17	<0.001
NORTH DAKOTA																
HVDC Transmission Line																
Beaver	10110204	557,930	0	0.00	0.000	0	0.00	0.000	6.40	0.001	0.02	<0.001	6.42	0.001	0.00	0.000
Middle Little Missouri	10110203	1,390,766	17	0.26	<0.001	0	0.00	0.000	409.65	0.029	14.06	0.001	423.70	0.030	5.76	<0.001
Upper Cannonball	10130204	1,046,373	7	0.09	<0.001	0	0.00	0.000	694.54	0.066	1.30	<0.001	695.85	0.067	0.21	<0.001
Upper Heart	10130202	1,097,252	0	0.00	0.000	0	0.00	0.000	43.23	0.004	0.21	<0.001	43.44	0.004	0.93	<0.001
Lower Heart	10130203	1,045,195	0	0.00	0.000	1	<0.01	<0.001	443.63	0.042	4.93	<0.001	448.56	0.043	3.55	<0.001

Transmission Line / HUC 8 Subbasin	HUC 8 No.	Total HUC 8 Area (acres) ^a	Waterbodies Crossed by Temporary Impact Areas (count)	Temporary Waterbody Impacts in HUC 8 (acres)	Percent of HUC 8 with Direct Temporary Waterbody Impacts (%)	Waterbodies Crossed by Permanent Impact Areas (count)	Permanent Waterbody Impacts in HUC 8 (acres)	Percent of HUC 8 with Direct Permanent Waterbody Impacts (%)	Temporary Impact Area Within HUC 8 (acres)	Percent of HUC 8 that is Temporary Impact Areas (%)	Permanent Impact Area Within HUC 8 ^b (acres)	Percent of HUC 8 that is Permanent Impact Area (%)	Total Impact Areas Within HUC 8 ^b (acres)	Percent of HUC 8 that is Impact Area (%)	Tree Clearing Acres in HUC 8 ^c (acres)	Percent of HUC 8 Tree Clearing (%)
Oliver/Morton Transmission Line																
Lower Heart	10130203	1,045,195	0	0.00	0.000	0	0.00	0.000	4.90	<0.001	0.00	0.000	4.90	<0.001	0.00	0.000
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	25.94	0.005	0.00	0.000	25.94	0.005	0.00	0.000
Oliver Transmission Line																
Lower Heart	10130203	1,045,195	3	0.04	<0.001	0	0.00	0.000	153.77	0.015	2.98	<0.001	156.74	0.015	5.40	0.001
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	61.93	0.011	0.17	<0.001	62.09	0.011	0.00	0.000
Upper Lake Oahe	10130102	2,327,253	0	0.00	0.000	0	0.00	0.000	78.92	0.003	4.24	<0.001	83.16	0.004	1.85	<0.001
Painted Woods-Square Butte	10130101	1,617,190	2	0.04	<0.001	0	0.00	0.000	257.29	0.016	2.38	<0.001	259.66	0.016	3.47	<0.001
Morton Transmission Line																
Lower Heart	10130203	1,045,195	0	0.00	0.000	0	0.00	0.000	7.68	0.001	0.02	<0.001	7.70	0.001	0.00	0.000
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	117.92	0.021	13.70	0.002	131.61	0.023	0.87	<0.001
Upper Lake Oahe	10130102	2,327,253	0	0.00	0.000	0	0.00	0.000	60.15	0.003	3.90	<0.001	64.05	0.003	2.05	<0.001
Facilities																
Lower Heart	10130203	1,045,195	0	0.00	0.000	0	0.00	0.000	40.57	0.004	24.13	0.002	64.71	0.006	0.00	0.000
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	90.12	0.016	5.31	0.001	95.43	0.017	0.00	0.000
Total ^d		18,132,251	112	1.03	<0.001	101	0.57	<0.001	4,346.78	0.024	425.20	0.002	4,771.98	0.026	483.91	0.003

Source: Grid United 2025d, 2026a, 2026c

HUC = hydrologic unit code; HVDC = high-voltage direct current; NLCD = National Land Cover Database; ROW = right-of-way

Notes:

^a HUC 8 is the total acres of the HUC 8 watershed crossed. This is repeated for each transmission line in the table, where appropriate.

^b Existing access roads with no planned improvements for Project use outside of the ROW and existing portions of the Colstrip Substation have been omitted from the provided acreages. Permanent impacts associated with ROW tree clearing are addressed separately and are not included in the permanent impact acreage.

^c Tree clearing acreage is based on desktop land cover data sources and estimates potential tree cover within the Project impact areas and ROW. The Montana Landcover Framework was used for the tree cover estimate in Montana, and the NLCD was used for the tree cover estimate in North Dakota.

^d Values of less than an amount (e.g., <0.001%) have been summed using 0.001% as the value; thus, these totals are slight overestimations.

Table 3.6-3
100-Year Federal Emergency Management Agency Floodplains Crossed by the Project Impact Areas

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type ^a	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Map ID	Date of Flood Insurance Rate Map
Rosebud Transmission Lines								
No floodplains crossed								
HVDC Transmission Line								
Rosebud County, Montana	10100003 - Rosebud	5.5	Hay Creek	Temporary Impact Area	NA	0.17	3000690037A	9/1/1997
	10100003 - Rosebud	8.5	Spring Creek	Overland Travel	NA	0.72	3000690037A	9/1/1997
	10100003 - Rosebud	8.5	Spring Creek	Structure Footprint	<0.01	NA	3000690037A	9/1/1997
	10100003 - Rosebud	8.5	Spring Creek	Temporary Impact Area	NA	1.80	3000690037A	9/1/1997
	10100003 - Rosebud	8.5	Spring Creek	ROW Tree Clearing	0.87	NA	3000690037A	9/1/1997
	10100003 - Rosebud	8.6	Spring Creek	Existing, Needs Improvement	0.91 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	8.6	Spring Creek	Temporary Impact Area	NA	0.06	3000690037A	9/1/1997
	10100003 - Rosebud	13.1	Spring Creek	Existing, Needs Improvement	0.86 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.1	Spring Creek	Temporary Impact Area	NA	0.06	3000690037A	9/1/1997

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type ^a	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Map ID	Date of Flood Insurance Rate Map
	10100003 - Rosebud	13.5	Rosebud Creek	Existing, Needs Improvement	3.49 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.5	Rosebud Creek	Temporary Impact Area	NA	0.23	3000690037A	9/1/1997
	10100003 - Rosebud	13.5	Spring Creek	Existing, Needs Improvement	0.36 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.5	Spring Creek	Temporary Impact Area	NA	0.05	3000690037A	9/1/1997
	10100003 - Rosebud	14.0	Sprague Creek	Overland Travel	NA	0.53	3000690037A	9/1/1997
	10100003 - Rosebud	14.0	Sprague Creek	New, Temporary	NA	0.44	3000690037A	9/1/1997
	10100003 - Rosebud	14.0	Sprague Creek	Temporary Impact Area	NA	<0.01	3000690037A	9/1/1997
	10100003 - Rosebud	14.0	Sprague Creek	ROW Tree Clearing	0.70	NA	3000690037A	9/1/1997
	10100003 - Rosebud	16.7	Udee Creek	New, Temporary	NA	0.75	3000690037A	9/1/1997
	10100003 - Rosebud	16.7	Udee Creek	Structure Footprint	<0.01	NA	3000690037A	9/1/1997
	10100003 - Rosebud	16.7	Udee Creek	Temporary Impact Area	NA	1.44	3000690037A	9/1/1997
	10100003 - Rosebud	16.7	Udee Creek	ROW Tree Clearing	2.93	NA	3000690037A	9/1/1997
	10100003 - Rosebud	16.9	Rosebud Creek	Temporary Impact Area	NA	0.11	3000690037A	9/1/1997

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type ^a	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Map ID	Date of Flood Insurance Rate Map
	10100003 - Rosebud	16.9	Rosebud Creek	Existing, Needs Improvement	1.75 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	16.9	Rosebud Creek	Overland Travel	NA	0.40	3000690037A	9/1/1997
	10100003 - Rosebud	17.0	Rosebud Creek	ROW Tree Clearing	1.87	NA	3000690037A	9/1/1997
	10100003 - Rosebud	17.0	Rosebud Creek	Overland Travel	NA	0.22	3000690037A	9/1/1997
	10100003 - Rosebud	17.0	Rosebud Creek	Structure Footprint	0.01	NA	3000690037A	9/1/1997
	10100003 - Rosebud	17.0	Rosebud Creek	Temporary Impact Area	NA	1.65	3000690037A	9/1/1997
	10100003 - Rosebud	18.7	Goodman Creek	Existing, Needs Improvement	4.83 ^b	NA	3000690037A	9/1/1997
	10100003 - Rosebud	18.7	Goodman Creek	Temporary Impact Area	NA	0.40	3000690037A	9/1/1997
Total floodplain impacts in Rosebud County, Montana					18.59 ^c	9.00 ^c		
Grant County, North Dakota	10130203 - Lower Heart	316.2	Antelope Creek	Overland Travel	NA	0.03	38037C0275B	11/16/2023
	10130203 - Lower Heart	316.2	Antelope Creek	Temporary Impact	NA	0.71	38037C0275B	11/16/2023
	10130203 - Lower Heart	322.7	Pump Coulee	ROW Tree Clearing	0.07	NA	38037C0275B	11/16/2023
	10130203 - Lower Heart	322.9	Unnamed Tributary to Pump Coulee	ROW Tree Clearing	0.13	NA	38037C0275B	11/16/2023

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type ^a	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Map ID	Date of Flood Insurance Rate Map
	10130203 - Lower Heart	331.5	Unnamed Tributary to Otter Creek	Overland Travel	NA	0.07	38037C0350B	11/16/2023
	10130203 - Lower Heart	334.9	Cow Creek	Overland Travel	NA	<0.01	38037C0350B	11/16/2023
	10130203 - Lower Heart	334.9	Cow Creek	New, Temporary	NA	0.06	38037C0350B	11/16/2023
Total floodplain impacts in Grant County, North Dakota					0.20 ^c	0.87 ^c		
Oliver Transmission Line								
Morton County, North Dakota	10130203 - Lower Heart	27.0	Heart River	New, Temporary	NA	0.95	38059C0460E	10/16/2015
	10130203 - Lower Heart	27.0	Heart River	Temporary Impact	NA	2.45	38059C0460E	10/16/2015
	10130203 - Lower Heart	27.0	Heart River	Structure Footprint	0.01	NA	38059C0460E	10/16/2015
	10130203 - Lower Heart	27.0	Heart River	ROW Tree Clearing	0.60	NA	38059C0460E	10/16/2015
Total floodplain impacts in Morton County, North Dakota					0.61 ^c	3.41 ^c		
Morton Transmission Line								
No floodplains crossed								
Montana Total Floodplain Impacts					18.59 ^c	9.00 ^c		
North Dakota Total Floodplain Impacts					0.81 ^c	4.28 ^c		
Total Project Floodplain Impacts					19.40 ^c	13.27 ^c		

Source: Grid United 2025f, 2026a, 2026b

FEMA = Federal Emergency Management Agency; HUC = hydrologic unit code; HVDC = high-voltage direct current; MP = Milepost; NA = not applicable; NLCD = National Land Cover Database; ROW = right-of-way

Notes:

^a The “Impact Type” column identifies the type of construction area, access road, or tree clearing activity that would occur within a FEMA 100-year floodplain. Project access road categories include Overland Travel; Existing, Needs Improvement; and New, Temporary. Temporary impact areas include guard structure pads, structure pads, access road turnarounds, and pulling and tensioning sites; however, these components are not identified separately due to impact area overlap. The only Project infrastructure components that would remain in floodplains after construction are permanent structures and access roads identified as Existing, Needs Improvement. General ROW crossings of floodplains are not included in this table, as there would be no ground disturbance. Tree clearing acreage is based on desktop land cover data sources and estimates potential tree cover within the Project impact areas. The Montana Landcover Framework (2020) was used to estimate tree cover in Montana and the NLCD (2024) was used for tree cover in North Dakota.

^b Access roads identified as Existing, Needs Improvement would require improvements in select locations based on site conditions. Therefore, acreage of actual impacts may be less than currently identified once detailed road designs and permitted are complete.

^c Totals may not add up due to rounding. Values of <0.01 were summed as 0.01.

Table 3.6-4
Surveyed Waterbodies Crossed by the Project Area ^a

State and County	Perennial	Intermittent	Ephemeral	Natural Pond	Stock Pond	Total Waterbodies
Montana						
Rosebud	3	17	22	2	3	47
Custer	9	71	84	9	2	175
Fallon	14	5	14	4	2	39
<i>Montana Subtotal</i>	<i>26</i>	<i>93</i>	<i>120</i>	<i>15</i>	<i>7</i>	<i>261</i>
North Dakota						
Golden Valley	0	5	3	1	1	10
Slope	18	6	3	0	5	32
Hettinger	4	3	1	3	1	12
Grant	2	0	0	3	5	10
Morton	4	5	4	2	6	21
Oliver	4	0	2	0	0	6
<i>North Dakota Subtotal</i>	<i>32</i>	<i>19</i>	<i>13</i>	<i>9</i>	<i>18</i>	<i>91</i>
Project Area Total	58	112	133	24	25	352

Source: WEST 2026; Grid United 2026b

Notes:

^a Field surveys were conducted between 2022 and 2025 and are ongoing. The pending survey areas for aquatic resources fall in one of the following categories, all of which indicate a low likelihood of aquatic resource occurrence: a) areas with no desktop indications of wetland or waterbody presence; b) existing roads with bridges or culverts and no expected improvements at known waterbody or wetland crossings (i.e., no impacts); c) survey areas where any wetland or waterbody impacts would be avoided; d) areas where surveys may extend existing wetland/waterbody features but are unlikely to change the impact areas (Grid United 2026b). The Proponent will complete final aquatic resource surveys prior to construction.

Table 3.6-5
Named Waterbodies Crossed by the Project Centerline ^a

Line Segment / State	County	HUC	Unique ID	MP	Waterbody Name ^a	Flow Regime	CWA 303(d) Status	Public Land Ownership	State Class
Rosebud Transmission Line 2									
Montana	Rosebud	10100003	oroe401	1.9	Cow Creek	Pond	Unimpaired	NA	C-3
HVDC Transmission Line									
Montana	Rosebud	10100001	sros001	42.4	Graveyard Creek	Ephemeral	Unimpaired	MSTL	C-3
Montana	Custer	10090102	scud231	58.0	Paddy Fay Creek	Intermittent	Unimpaired	USDA	C-3
Montana	Custer	10090102	scud225	62.8	Tongue River	Perennial	Impaired	NA	B-3
Montana	Custer	10090209	scua201	89.0	North Strevell Creek	Intermittent	Unimpaired	NA	C-3
Montana	Custer	10090209	scua209	92.6	Powder River	Perennial	Impaired	NA	C-3
Montana	Custer	10090209	scuy010	96.9	Horse Creek	Intermittent	Unimpaired	NA	C-3
Montana	Fallon	10100005	sfad208	118.1	South Fork Cottonwood Creek	Perennial	Unimpaired	NA	C-3
Montana	Fallon	10100005	sfad207	118.1	South Fork Cottonwood Creek	Perennial	Unimpaired	NA	C-3
Montana	Fallon	10100005	sfae206	126.8	O'Fallon Creek	Perennial	Unimpaired	BLM	C-3
Montana	Fallon	10100005	sfae205b	139.0	Sandstone Creek	Perennial	Impaired	NA	C-3
Montana	Fallon	10100005	sfae408	142.5	Sandstone Creek	Perennial	Impaired	NA	C-3
Montana	Fallon	10110203	sfae213a	158.7	Johny Creek	Perennial	Unimpaired	NA	C-3
Montana	Fallon	10110204	sfae407	169.8	Beaver Creek	Ephemeral	Unimpaired	NA	C-3
North Dakota	Slope	10110203	sslp001a	187.5	Little Missouri River	Perennial	Impaired	NA	Class II
North Dakota	Slope	10110203	sslp001b	187.5	Little Missouri River	Perennial	Impaired	NA	Class II
North Dakota	Slope	10110203	sslk011	194.4	Spring Creek	Ephemeral	Unimpaired	NFS	Class III
North Dakota	Slope	10110203	sslg200b	198.2	Deep Creek	Perennial	Impaired	NA	Class III
North Dakota	Slope	10110203	sslk009	199.3	Deep Creek	Perennial	Impaired	NFS	Class III
North Dakota	Slope	10130204	sslf404	226.7	Cannonball River	Perennial	Impaired	NA	Class II

Line Segment / State	County	HUC	Unique ID	MP	Waterbody Name ^a	Flow Regime	CWA 303(d) Status	Public Land Ownership	State Class
North Dakota	Slope	10130204	sslf403	226.9	Cannonball River	Perennial	Impaired	NA	Class II
North Dakota	Slope	10130204	sslf402	227.8	Cannonball River	Perennial	Impaired	NA	Class II
North Dakota	Hettinger	10130204	sheo001a	253.0	Cannonball River	Perennial	Impaired	NA	Class II
North Dakota	Hettinger	10130204	shek001	255.6	Dead Horse Creek	Intermittent	Impaired	NA	Class III
North Dakota	Hettinger	10130204	shel401	260.8	Hay Slough Creek	Perennial	Unimpaired	NA	Class III
North Dakota	Hettinger	10130204	sheo004	278.2	Thirtymile Creek	Perennial	Unimpaired	NA	Class III
Oliver Transmission Line									
North Dakota	Morton	10130102	smre201	13.6	Little Heart River	Intermittent	Unimpaired	NA	Class III
North Dakota	Morton	10130203	smrr001	27.0	Heart River	Perennial	Unimpaired	NA	Class IA
North Dakota	Morton	10130101	omrb201	39.1	Otter Creek	Pond	Unimpaired	NA	Class III
North Dakota	Oliver	10130101	sovb205	48.8	Square Butte Creek	Perennial	Impaired	NA	Class IA
North Dakota	Oliver	10130101	sovf401	49.0	Square Butte Creek	Perennial	Impaired	NA	Class IA
Morton Transmission Line									
North Dakota	Morton	10130206	smre203	3.8	Chanta Peta Creek	Perennial	Unimpaired	NA	Class III

Source: Grid United 2025b, 2026b; MTDEQ 2025; WEST 2026

BLM = Bureau of Land Management; CWA = Clean Water Act; HUC = hydrologic unit code; HVDC = high-voltage direct current; ID = identification; MP = Milepost; MSTL = Montana State Trust Lands; NA = not applicable; NFS = National Forest System; USDA = U.S. Department of Agriculture
Notes:

^a This table provides only named waterbodies crossed by the Project centerline with no direct impacts proposed. These waterbodies may have indirect impacts associated with riparian buffer clearing. Named waterbodies with direct temporary or permanent impacts, as well as those with indirect impacts (riparian buffer clearing), are listed in Table 3.6-10.

Table 3.6-6
Waterbodies Crossed by the Project Impact Areas on Public Lands ^a

Agency / Segment / Impact Type / Project Component	Perennial	Intermittent	Ephemeral	Lake/Pond
MSTL				
HVDC Transmission Line				
Permanent				
Permanent access road	0	5	7	0
Temporary				
Temporary access road	0	1	2	0
Overland travel	0	2	0	0
ROW clearing ^b	0	0	1	0
<i>MSTL Subtotal</i>	<i>0</i>	<i>8</i>	<i>10</i>	<i>0</i>
BLM—MILES CITY FIELD OFFICE				
HVDC Transmission Line				
Permanent				
Permanent access road	0	4	6	0
Temporary				
Overland travel	1	0	0	0
ROW clearing ^b	2	0	0	0
<i>BLM Subtotal</i>	<i>3</i>	<i>4</i>	<i>6</i>	<i>0</i>
USDA FOREST SERVICE—LMNG				
HVDC Transmission Line				
Permanent				
	0	0	0	0
Temporary				
Temporary access road	2	1	1	0
ROW clearing ^b	0	0	0	1
<i>USDA Forest Service Subtotal</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>

Agency / Segment / Impact Type / Project Component	Perennial	Intermittent	Ephemeral	Lake/Pond
USDA AGRICULTURAL RESEARCH SERVICE—FORT KEOGH				
HVDC Transmission Line				
Permanent				
Permanent access road	0	9	16	0
Temporary				
Temporary access road	0	0	2	0
ROW clearing ^b	0	0	0	0
<i>USDA Agricultural Research Service Subtotal</i>	<i>0</i>	<i>9</i>	<i>18</i>	<i>0</i>
Project Total	5	22	35	1

Source: Grid United 2025b, 2026a; WEST 2026

BLM = Bureau of Land Management; CMRP = Construction, Mitigation, and Reclamation Plan; HVDC = high-voltage direct current; LMNG = Little Missouri National Grassland; MSTL = Montana State Trust Lands; ROW = right-of-way; USDA = U.S. Department of Agriculture

Notes:

^a Data in this table is a subset of all waterbody data crossed by the Project impact areas, including only waterbodies on federal- and state-managed land parcels. Waterbodies presented in this table are based on surveyed data.

^b Forested areas within the ROW for each transmission line have been identified as ROW clearing impact areas. Trees and tall shrubs within these impact areas would be cleared and permanently maintained during operations of the Project, as further discussed in Section 8.0 of the CMRP (Appendix E). These areas reflect a permanent conversion from forest to non-forested land cover, but do not contain Project components; no ground-disturbing construction is anticipated within these areas.

Table 3.6-7
Waterbodies Crossed by Project Impact Areas ^a

State/Segment	Perennial	Intermittent	Ephemeral	Lake/Pond	Total
Montana					
Rosebud Transmission Lines	0	0	1	0	1
HVDC Transmission Line	9	72	93	8	182
<i>Montana Subtotal</i>	<i>9</i>	<i>72</i>	<i>94</i>	<i>8</i>	<i>183</i>
North Dakota					
HVDC Transmission Line	10	9	4	2	25
Oliver Transmission Line	0	1	4	0	5
Morton Transmission Line	0	0	0	0	0
<i>North Dakota Subtotal</i>	<i>10</i>	<i>10</i>	<i>8</i>	<i>2</i>	<i>30</i>
Project Total	19	82	102	10	213

Source: Grid United 2025e, 2026a; WEST 2026

HVDC = high-voltage direct current; ROW = right-of-way

Notes:

^a This table includes counts of locations where waterbodies are crossed by Project impact areas on private, state, and federal lands. Waterbodies crossing Existing, No Improvement Needed access roads, or the Project ROW outside of proposed ground-disturbing impact areas are not included.

Table 3.6-8
Montana State Water Quality Classifications

Water Quality Class	Description
A-Closed	Waters to be maintained suitable for drinking, culinary, and food processing purposes after disinfection. Water quality to be maintained suitable for swimming, recreation, growth, and propagation of fish and associated aquatic life.
A-1	Waters to be maintained suitable for drinking, culinary and food processing purposes after conventional treatment for removal of naturally present impurities; bathing, swimming, and recreation; growth and propagation of salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
B-1	Waters to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
B-2	Waters to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and marginal propagation of salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
B-3	Waters to be maintained suitable for drinking, culinary, and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
C-1	Waters to be maintained suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
C-2	Waters to be maintained suitable for bathing, swimming, and recreation; growth and marginal propagation of salmonid fishes, waterfowl and furbearers; and agricultural and industrial water supply.
C-3	Waters to be maintained suitable for bathing, swimming, and recreation, and growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers. The quality of these waters is naturally marginal for drinking, culinary, and food processing purposes, agriculture, and industrial water supply.
I	The goal for these waters is to fully support the following uses: drinking, culinary, and food processing purposes after conventional treatment; bathing, swimming, and recreation; growth and propagation of fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply. An analysis will be performed for each of these waters during each triennial standards review period to determine the factors preventing or limiting attainment of the designated uses listed herein. Based on these analyses, specific standards will be adjusted to reflect any improvements which have occurred in water quality as a result of water quality control of nonpoint source pollution.
E,D,F	Refers to certain constructed ditches, seasonal and semi-permanent lakes, and ephemeral streams; no waters are currently categorized in these classes.

Source: Grid United 2024

Table 3.6-9
North Dakota State Water Quality Classifications

Water Quality Class	Description
Stream Classification	
I	Waters shall be suitable for propagation or protection of resident fish species, and for swimming, boating, and other water recreation. Water shall be suitable for irrigation, stock watering, and wildlife without injurious effects. After treatment water quality meets the requirements for municipal or domestic use.
IA	Waters shall be the same quality as class I streams, except where natural conditions exceed class I criteria for municipal and domestic use, the availability of treatment methods may be considered in determining whether ambient water quality meets drinking water requirements.
II	Waters shall be the same quality as class I streams, except that additional treatment may be required to meet drinking water requirements. Streams in this class will be intermittent in nature limiting the value for beneficial uses such as municipal water, fish life, irrigation, bathing or swimming.
III	Water shall be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.
Wetlands	These waters, including isolated ponds, sloughs, and marshes, are to be considered waters of the state.
Lake and Reservoir Classification	
1	Coldwater fishery.
2	Coolwater fishery (e.g., northern pike and walleye). These waters are also capable of supporting the growth and marginal survival of coldwater species.
3	Warmwater fishery (e.g., largemouth bass and bluegill). Some coolwater species may also be present.
4	Marginal fishery, capable of short-term or seasonal fisheries.
5	Not capable of supporting a fishery due to high salinity.

Table 3.6-10
Waterbody Impacts for the Project Area ^a

Line Segment / State	County	HUC8	MP	Unique ID ^b	Waterbody Name	Flow Regime	Temporary Impacts (acres) ^c	Permanent Impacts (acres) ^c	Potential Riparian Forest Adjacent ^d	Project Component ^e	303(d) Status	Public Land Ownership	State Class
Rosebud Transmission Line 2													
Montana	Rosebud	10100001	1.1	sroe404	Unnamed	Ephemeral	0.02	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
HVDC Transmission Line													
Montana	Rosebud	10100003	2.8	sroy005	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Rosebud	10100003	12.0	sroi203	Unnamed	Ephemeral	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	13.5	orol401	Spring Creek	Pond	0	0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	13.5	orol402	Unnamed	Pond	0	0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	13.5	srol405	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	13.5	srol406	Rosebud Creek	Perennial	0	0.01	No	Existing, Needs Improvement Access Road	Impaired	NA	C-3
Montana	Rosebud	10100003	14.0	sroi202	Sprague Creek	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	16.7	sroe203	Udee Creek	Intermittent	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	16.7	srol403	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Rosebud	10100003	16.8	srol402	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Rosebud	10100003	16.9	srol401	Rosebud Creek	Perennial	0	0.01	No	Existing, Needs Improvement Access Road	Impaired	NA	C-3
Montana	Rosebud	10100003	17.0	sroe204	Rosebud Creek	Perennial	0	0	Yes	NA	Impaired	NA	C-3
Montana	Rosebud	10100003	17.4	srol404	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	MSTL	C-3
Montana	Rosebud	10100003	18.4	sroy012	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	18.5	sroy011	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	18.8	sroy016	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	19.0	sroy009	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	19.0	srog202	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	19.1	srog203	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	19.2	sroe409	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	20.3	orog201	Unnamed	Pond	0	<0.01	Yes	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	20.3	srod201	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	20.3	srod202	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	22.4	orog203	Unnamed	Pond	0	<0.01	Yes	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3

Line Segment / State	County	HUC8	MP	Unique ID ^b	Waterbody Name	Flow Regime	Temporary Impacts (acres) ^c	Permanent Impacts (acres) ^c	Potential Riparian Forest Adjacent ^d	Project Component ^e	303(d) Status	Public Land Ownership	State Class
Montana	Rosebud	10100003	22.8	srod203	Unnamed	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	38.5	sroa207	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	38.5	sroa207	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	38.6	sroa207	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	38.7	sroa207	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	38.7	sroa207	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	39.5	sroa205	Unnamed	Intermittent	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	39.9	sroa204	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	40.3	sroe401	Graveyard Creek	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	40.4	sroe401	Graveyard Creek	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Rosebud	10100001	40.9	sroa203	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	41.1	sroa202	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100001	42.2	sroa201	Unnamed	Intermittent	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	MSTL	C-3
Montana	Rosebud	10100001	42.4	sros001	Graveyard Creek	Ephemeral	0	0	Yes	NA	Unimpaired	MSTL	C-3
Montana	Rosebud	10100001	42.4	sroe201	Graveyard Creek	Intermittent	0.01	0	No	Overland Travel	Unimpaired	MSTL	C-3
Montana	Custer	10100001	43.1	scun005	Unnamed	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	43.1	scun003	Unnamed	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	43.4	scun002	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	43.9	scun001	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10100001	46.8	scun004	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	49.1	scul001	Cottonwood Creek	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	50.1	scue201	West Fork Moon Creek	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10100001	50.2	scue202b	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10100001	50.2	scue202a	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10100001	52.6	scuz004	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	52.9	scua402	Moon Creek	Intermittent	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	53.0	scuz005	Moon Creek	Ephemeral	<0.01	0	Yes	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100001	53.7	scue203	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100001	54.0	scut001	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	54.2	scua219	Unnamed	Intermittent	0.02	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100001	55.5	scua222	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	55.9	scua238	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	55.9	scua223	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	55.9	scua223	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	55.9	scua223	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3

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Montana	Custer	10100001	56.0	scua231	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.1	scua239	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.1	scua226	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.1	scua226	Unnamed	Intermittent	0	0.02	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.1	scua227	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.2	scua230	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.2	scua230	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.2	scua228	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.2	scua229	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.3	scua229	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.2	scua225	Unnamed	Ephemeral	0	<0.01	No	New, Permanent	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.5	scua224	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.8	scua233	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	56.8	scua232	Unnamed	Intermittent	0	0.02	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	57.0	scua234	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	57.2	scua236	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	57.2	scua235	Lignite creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	57.3	scua235	Lignite creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10100001	57.3	scua237	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10090102	58.0	scud229	Paddy Fay Creek	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
Montana	Custer	10090102	59.4	scud226	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	USDA	C-3
Montana	Custer	10090102	60.4	scud227	Unnamed	Ephemeral	0.01	0	No	New, Temporary Access Road	Unimpaired	USDA	C-3
Montana	Custer	10090102	62.8	scud225	Tongue River	Perennial	0	0	Yes	NA	Impaired	NA	B-3
Montana	Custer	10090102	65.8	scue401	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	67.6	scue416	Unnamed	Ephemeral	<0.01	-	No	Temporary Impact Area	Unimpaired	NA	C-3
Montana	Custer	10090102	67.6	scue416	Unnamed	Ephemeral	-	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	67.6	scue416	Unnamed	Ephemeral	-	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	68.0	scue417	Unnamed	Intermittent	0	0.02	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	71.2	scue209	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	71.5	scue208	Unnamed	Ephemeral	-	0.01	Yes	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	71.6	scue208	Unnamed	Ephemeral	<0.01	-	Yes	Temporary Impact Area	Unimpaired	NA	C-3
Montana	Custer	10090102	72.5	scue207	Unnamed	Intermittent	0	0.01	Yes	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	72.6	scue206	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	73.6	ocue202	Unnamed	Pond	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	74.6	scua501	Unnamed	Ephemeral	<0.01	0	No	Temporary Impact Area	Unimpaired	NA	C-3
Montana	Custer	10090102	75.0	scue205	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3

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Montana	Custer	10090102	75.3	scua407	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	77.0	scue204	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	77.8	scuc231	Johnson Creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	79.5	scuc230	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	79.9	scuc229	Unnamed	Intermittent	0	0.02	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	80.4	scuc209	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	80.5	scuc208	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	81.0	scue415	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	81.7	scue414	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	81.8	scue413	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.8	scue412	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.8	scuc205	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.8	scuc205	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.9	scuc205	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.9	scue411	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.9	scue410	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	81.9	scua502	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090210	82.0	scua503	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090210	82.0	scuc206	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.0	scuc207	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.0	scue409	Unnamed	Ephemeral	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.0	scuc207	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.1	scuc207	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.2	scuc222	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.4	scuc223	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.5	scuc238	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.5	scuc226	Unnamed	Intermittent	0	0.02	Yes	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.6	scuc224	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	82.7	scuc225	Second Creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	82.8	scuc216	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.9	scuc217	Second Creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	83.2	scuc215b	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	83.3	scuc214	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	83.5	scuc218	Unnamed	Intermittent	0	0.02	No	New, Permanent Access Road	Unimpaired	BLM	C-3
Montana	Custer	10090210	83.7	scuc219	Second Creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	83.7	scuc219	Second Creek	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3

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Montana	Custer	10090210	83.8	scuc213	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	83.8	scuc213	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	83.8	scuc213	Unnamed	Intermittent	0	0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	83.8	scuc235	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.1	scuc212	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.2	scue408	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.3	scuc220	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	84.3	scuc234	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.3	scuc211	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.6	scuc221	Second Creek	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	84.6	scuc210	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	84.7	scuc210	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	85.5	scuc204	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	85.7	scuc203	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	86.2	scuc202	First Creek	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	87.9	scuc201	Strevell Creek	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	89.0	scua401	North Strevell Creek	Intermittent	0	0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	89.2	scua202	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	89.6	scua203	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	89.7	scua203	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	90.6	scua206	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	90.7	scua207	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	90.9	scua208	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	92.6	scua209	Powder River	Perennial	0	0	Yes	NA	Impaired	NA	C-3
Montana	Custer	10090209	92.9	scun104	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	93.5	scua405	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090209	96.9	scuy010	Horse Creek	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	98.5	scud223	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	98.5	scud224	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	99.1	scuh201	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	99.3	scuh203	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	99.4	scuh202	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	99.7	scuh204	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	99.8	scuh205	Meyers Creek	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	103.1	scuf209	Unnamed	Ephemeral	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3

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Montana	Custer	10090209	103.5	scul404	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	104.0	scuf206	Unnamed	Intermittent	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	104.1	scuf205	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	104.1	scul403	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	104.6	scul402	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	105.8	scuf208	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	106.9	scuf203	Unnamed	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	107.3	scuf210	Unnamed	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	108.0	ocuf200	Unnamed	Pond	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	108.5	scuf200	Locate Creek	Perennial	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	108.5	scul401	Archdale Creek	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	108.6	scuf201	Archdale Creek	Perennial	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090209	109.1	scud221	Unnamed	Ephemeral	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	110.3	ocud202	Unnamed	Pond	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	112.3	scuf202b	Archdale Creek	Perennial	0	0	Yes	NA	Unimpaired	BLM	C-3
Montana	Custer	10090209	112.4	scuf202c	Archdale Creek	Perennial	0	0	Yes	NA	Unimpaired	BLM	C-3
Montana	Custer	10090209	113.1	scud208	Archdale Creek	Perennial	0.03	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100005	115.9	ocud201	Unnamed	Pond	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100005	116.9	scud204	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100005	117.3	scud202	South Fork Cottonwood Creek	Perennial	0.02	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10100005	117.7	scud200	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Fallon	10100005	118.6	sfad201	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Fallon	10100005	126.3	sfal401	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Fallon	10100005	126.6	sfae206a	O'Fallon Creek	Perennial	0.16	0	No	Overland Travel	Unimpaired	BLM	C-3
Montana	Fallon	10100005	127.4	sfae405	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Fallon	10100005	127.7	sfae403	Unnamed	Ephemeral	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Fallon	10100005	138.8	sfaa501	South Fork Sandstone Creek	Intermittent	0	0.03	No	Existing, Needs Improvement Access Road	Impaired	NA	C-3
Montana	Fallon	10100005	138.9	sfae205a	Sandstone Creek	Perennial	0.01	0	Yes	Overland Travel	Impaired	NA	C-3
Montana	Fallon	10100005	139.0	sfae205b	Sandstone Creek	Perennial	0	0	Yes	NA	Impaired	NA	C-3
Montana	Fallon	10100005	142.7	sfae409	Sandstone Creek	Perennial	0.02	0	No	Overland Travel	Impaired	NA	C-3
Montana	Fallon	10100005	143.4	sfae211	Unnamed	Intermittent	0.02	0	Yes	Overland Travel	Unimpaired	NA	C-3
Montana	Fallon	10100005	155.2	sfaa502	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	MSTL	C-3
Montana	Fallon	10100005	156.5	sfae401	Cottonwood Creek	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Fallon	10110203	158.7	sfae213	Johny Creek	Perennial	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Fallon	10110203	158.8	sfae213	Johny Creek	Perennial	0.02	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3

Line Segment / State	County	HUC8	MP	Unique ID ^b	Waterbody Name	Flow Regime	Temporary Impacts (acres) ^c	Permanent Impacts (acres) ^c	Potential Riparian Forest Adjacent ^d	Project Component ^e	303(d) Status	Public Land Ownership	State Class
Montana	Fallon	10110203	158.9	sfae213	Johny Creek	Perennial	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Fallon	10110203	159.9	sfae214	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Fallon	10110203	159.9	sfak201	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Fallon	10110203	159.9	sfae215	Unnamed	Ephemeral	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Fallon	10110203	160.7	ofak201	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Fallon	10110203	161.9	sfak202	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana Subtotal							0.60	0.57					
North Dakota	Golden Valley	10110203	179.0	ogon001	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NFS	Class III
North Dakota	Golden Valley	10110203	183.2	sgoe201	Bull Run Creek	Intermittent	0.03	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	183.6	sgoa401	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	184.4	sgoe203	Unnamed	Ephemeral	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	184.6	sgoe204	Bull Run Creek	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	185.1	sgoe205	Bull Run Creek	Intermittent	0.01	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	185.3	sgoe205	Bull Run Creek	Intermittent	0.03	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Slope	10110203	187.4	osle201	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10110203	194.4	oslk002	Spring Creek	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10110203	195.5	sslk006	Unnamed	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NFS	Class III
North Dakota	Slope	10110203	196.0	sslk008	Unnamed	Ephemeral	0.01	0	No	New, Temporary Access Road	Unimpaired	NFS	Class III
North Dakota	Slope	10110203	197.9	sslk005a	Deep Creek	Perennial	0.03	0	No	New, Temporary Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	198.0	sslk005b	Deep Creek	Perennial	0.01	0	No	New, Temporary Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	198.2	sslg200	Deep Creek	Perennial	0.03	0	No	New, Temporary Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	198.4	sslg202	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Slope	10110203	198.7	sslg200e	Deep Creek	Perennial	0.02	-	No	New, Temporary Access Road	Impaired	NFS	Class III
North Dakota	Slope	10110203	199.1	sslk010	Deep Creek	Perennial	0.04	0	No	New, Temporary Access Road	Impaired	NFS	Class III
North Dakota	Slope	10110203	210.2	ssll402	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary	Unimpaired	NA	Class III
North Dakota	Slope	10110203	211.2	osll402	Unnamed	Pond	0.01	0	Yes	New, Temporary	Unimpaired	NA	Class III
North Dakota	Slope	10110203	211.2	osll401	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10110203	211.4	ssll401	Sand Creek	Intermittent	0.02	0	No	New, Temporary	Unimpaired	NA	Class III
North Dakota	Slope	10110203	213.3	ssll403	Sand Creek	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III

Line Segment / State	County	HUC8	MP	Unique ID ^b	Waterbody Name	Flow Regime	Temporary Impacts (acres) ^c	Permanent Impacts (acres) ^c	Potential Riparian Forest Adjacent ^d	Project Component ^e	303(d) Status	Public Land Ownership	State Class
North Dakota	Slope	10110203	213.7	ssll404	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10130204	216.9	ssll405	Unnamed	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	Class III
North Dakota	Slope	10130204	221.3	sslf407	Unnamed	Perennial	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Slope	10130204	226.6	sslf405	Cannonball River	Perennial	0.06	0	No	Overland Travel	Impaired	NA	Class II
North Dakota	Slope	10130204	226.9	sslf404	Cannonball River	Perennial	<0.01	0	No	Overland Travel	Impaired	NA	Class II
North Dakota	Slope	10130204	228.2	sslf401	Cannonball River	Perennial	0.01	0	No	Overland Travel	Impaired	NA	Class II
North Dakota	Hettinger	10130204	245.5	shei201	Coon Creek	Perennial	0.01	0	No	New, Temporary	Unimpaired	NA	Class III
North Dakota	Hettinger	10130204	246.1	shek003	Unnamed	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	Class III
North Dakota	Grant	10130203	321.5	ogrq001	Unnamed	Pond	0	<0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	Class III
North Dakota	Grant	10130203	316.2	sgrg201	Antelope Creek	Perennial	0	0	Yes	NA	Impaired	NA	Class III
North Dakota	Grant	10130203	318.8	ogrf002	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Grant	10130203	319.2	ogrf003	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
Oliver Transmission Line													
North Dakota	Morton	10130206	2.7	smre204	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Morton	10130203	21.7	smrl401	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Morton	10130203	21.8	smra401	Unnamed	Intermittent	0.03	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Morton	10130203	24.7	smrd200	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Morton	10130203	25.7	smrs002	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Morton	10130203	27.0	smrr001	Heart River	Perennial	0	0	Yes	NA	Unimpaired	NA	Class IA
North Dakota	Oliver	10130101	48.1	sovb202	Unnamed	Ephemeral	0.04	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Oliver	10130101	49.4	sovb204	Square Butte Creek	Perennial	0	0	Yes	NA	Impaired	NA	Class IA
Morton Transmission Line													
North Dakota	Morton	10130206	3.8	smre203	Chanta Peta Creek	Perennial	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Morton	10130102	14.4	smrz003	Unnamed	Perennial	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Morton	10130102	15.8	smrr003	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Morton	10130206	21.4	smre205	Unnamed	Perennial	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota Subtotal							0.42	<0.01					
Project Total							1.03	0.57					

Source: Grid United 2025c, 2026a; WEST 2025, 2026

BLM = Bureau of Land Management; HUC = hydrologic unit code; HVDC = high-voltage direct current; ID = identification; MP = Milepost; MSTL = Montana State Trust Lands; NA = not applicable; NFS = National Forest System; ROW = right-of-way; USDA = U.S. Department of Agriculture

Notes:

^a This table only includes waterbodies with anticipated direct (permanent or temporary) or indirect (riparian buffer clearing) impacts.

^b Unique ID is the identification code given to waterbodies during field surveys.

^c Acreage of either temporary or permanent impacts is based on crossing of Project impact areas, as provided in the “Project Component” column. Waterbodies showing no temporary or permanent impacts (i.e., 0 in both columns) are included to identify waterbodies within the ROW that do not cross Project impact areas.

^d The “Potential Riparian Forest Adjacent” column identifies waterbodies with potential riparian forest adjacent to the feature that would need to be cleared, resulting in indirect impacts on waterbodies. Potential riparian forests were identified using aerial imagery to confirm the presence of woody vegetation within conservative desktop-derived tree clearing polygons. A “Yes” in the column indicates that woody vegetation is present on aerial photos adjacent to the indicated waterbody. Riparian forests do not overlap the waterbody features, and because aerial imagery is insufficient to accurately distinguish riparian areas from other adjacent upland woody vegetation or forest cover, the acreage of potential riparian impacts is not provided.

^e Project Component includes the Project impact areas or access roads that cross the waterbody. Categories related to access roads include Overland Travel; Existing, Needs Improvement; New, Permanent; and New, Temporary. Temporary Impact Area refers to non-access road impacts. Waterbodies that are crossed by existing access roads that need no improvements were excluded as no impacts to those waterbodies are anticipated. NA in this column indicates a waterbody within the Project ROW that does not cross Project impact areas.

Table 3.6-11
Section 303(d) Impaired Waters Crossed by the Project Impact Areas

Transmission Line / County / State	Nearest MP	Waterbody Name ^a	Primary Pollutant	Flow Regime
Rosebud Transmission Lines (1, 2, 3, and 4)				
No 303(d) Impaired waters mapped within the Project impact areas				
HVDC Transmission Line				
Rosebud County, Montana	5.4 ^b	East Fork Armells Creek	Nitrate/Nitrite	Perennial
	13.5 ^c	Rosebud Creek	Other cause	Perennial
	16.9 ^c	Rosebud Creek	Other cause	Perennial
	17.0 ^c	Rosebud Creek	Other cause	Perennial
Custer County, Montana	62.8	Tongue River	Suspended Solids	Perennial
	92.6	Powder River	Salinity	Perennial
Fallon County, Montana	138.8	South Fork Sandstone Creek	Nitrate/Nitrite	Intermittent
	138.9	Sandstone Creek	Nitrate/Nitrite	Perennial
	142.5	Sandstone Creek	Nitrate/Nitrite	Perennial
	142.7	Sandstone Creek	Nitrate/Nitrite	Perennial
Slope County, North Dakota	197.9	Deep Creek	Fecal Coliform	Perennial
	198.0	Deep Creek	Fecal Coliform	Perennial
	198.2	Deep Creek	Fecal Coliform	Perennial
	198.7	Deep Creek	Fecal Coliform	Perennial
	199.1	Deep Creek	Fecal Coliform	Perennial
	226.5	Cannonball River	Escherichia Coli	Intermittent
	226.6	Cannonball River	Escherichia Coli	Intermittent
Grant County, North Dakota	316.3	Antelope Creek	Escherichia Coli	Perennial

Transmission Line / County / State	Nearest MP	Waterbody Name ^a	Primary Pollutant	Flow Regime
Oliver Transmission Line				
Oliver County, North Dakota	48.6	Square Butte Creek	Sedimentation, Siltation	Perennial
	48.8	Square Butte Creek	Sedimentation, Siltation	Perennial
	48.9	Square Butte Creek	Sedimentation, Siltation	Perennial
	49.0	Square Butte Creek	Sedimentation, Siltation	Perennial
Morton Transmission Line				
No 303(d) Impaired waters mapped within the Project impact areas				

Source: Grid United 2025a, 2026b

HVDC = high-voltage direct current; MP = Milepost; ROW = right-of-way

Notes:

^a Although all these waterbodies are within proposed Project impact areas, some would not be crossed/disturbed. Direct (permanent) or indirect (temporary) impacts are proposed only on those waterbodies identified in Table 3.6-10.

^b Crossings along access roads are categorized as Existing, No Improvement Needed.

^c The Project crosses the indicated 303(d) waterbody at multiple locations near this MP, including access road crossings outside the ROW.

Table 3.6-12
Surveyed Wetlands Crossed by the Project Area ^a

State and County	Cowardin Wetland Classification			Total Wetlands Delineated
	PEM	PFO	PSS	
Montana				
Rosebud	32	0	0	32
Custer	51	0	0	51
Fallon	48	0	0	48
Montana Subtotal	131	0	0	131
North Dakota				
Golden Valley	15	0	0	15
Slope	63	0	0	63
Hettinger	28	0	0	28
Grant	37	1	0	38
Morton	79	0	0	79
Oliver	6	0	0	6
North Dakota Subtotal	228	1	0	229
Project Total	359	1	0	360

Source: WEST 2026; Grid United 2026b

PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub/shrub

^a Field surveys were conducted between 2022 and 2025 and are ongoing. The pending survey areas for aquatic resources fall in one of the following categories, all of which indicate a low likelihood of aquatic resource occurrence: a) areas with no desktop indications of wetland or waterbody presence; b) existing roads with bridges or culverts and no expected improvements at known waterbody or wetland crossings (i.e., no impacts); c) survey areas where any wetland or waterbody impacts would be avoided; d) areas where surveys may extend existing wetland/waterbody features but are unlikely to change the impact areas (Grid United 2026b). The Proponent will complete final aquatic resource surveys prior to construction.

Table 3.6-13
Wetlands Crossed by the Project Impact Areas ^{a,b}

State / Transmission Line / Impact Type	PEM Wetland (acres)	PFO/PSS Wetland ^c (acres)	Riverine Wetland (acres)	Lake or Pond (acres)
MONTANA				
Rosebud Transmission Lines (1, 2, 3, and 4)				
Permanent	0.00	0.00	0.00	0.00
Temporary				
Access road	0.04	0.00	0.00	0.00
Impact area	0.18	0.00	0.00	0.00
HVDC Transmission Line				
Permanent				
Access road	0.49	0.00	0.00	0.00
Impact area	<0.01	0.00	0.00	0.00
Temporary				
Access road	1.77	0.00	0.00	0.00
Impact area	0.48	0.00	0.00	0.00
Montana Subtotal				
Permanent	0.49	0.00	0.00	0.00
Temporary	2.47	0.00	0.00	0.00
<i>Subtotal</i>	<i>2.96</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
NORTH DAKOTA				
HVDC Transmission Line				
Permanent				
Access road	0.03	0.00	0.00	0.00
Impact area	<0.01	0.00	0.00	0.00
ROW clearing	0.00	0.04	0.00	0.00
Temporary				
Access road	2.65	0.00	0.00	0.00
Impact area	1.20	0.00	0.00	0.00

State / Transmission Line / Impact Type	PEM Wetland (acres)	PFO/PSS Wetland ^c (acres)	Riverine Wetland (acres)	Lake or Pond (acres)
Oliver Transmission Line				
Permanent				
Access road	0.03	0.00	0.00	0.00
Impact area	<0.01	0.00	0.00	0.00
Temporary				
Access road	2.65	0.00	0.00	0.00
Impact area	1.20	0.00	0.00	0.00
Morton Transmission Line				
Permanent				
Impact area	<0.01	0.00	0.00	0.00
Temporary				
Access road	0.53	0.00	0.00	0.00
Impact area	0.97	0.00	0.00	0.00
North Dakota Subtotal				
Permanent	0.14	0.04	0.00	0.00
Temporary	9.11	0.00	0.00	0.00
<i>Subtotal</i>	<i>9.24</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
Permanent Project Impact Areas Subtotal	0.63	0.04	0.0	0.0
Temporary Project Impact Areas Subtotal	11.58	0.0	0.0	0.0
Permanent Project Impact Areas Total	12.21	0.04	0.00	0.00

Source: Grid United 2025b, 2026a; WEST 2026

HVDC = high-voltage direct current; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub; ROW = right-of-way
Notes:

^a Data in this table include all private, state, and federal lands crossed.

^b Totals may not add up due to rounding.

^c Impacts on PFO wetlands resulting from forest vegetation removal and maintenance within the Project ROW would result in the conversion of less than 0.04 acre of PFO within the Project ROW in Grant County, North Dakota.

Table 3.6-14
Wetlands Crossed by the Project Impact Areas on Public Lands ^{a,b,c,d,e}

State / Transmission Line / Impact Type	PEM Wetland (acres)	PFO/PSS Wetland (acres) ^f	Riverine Wetland (acres)	Lake or Pond (acres)
MONTANA				
Rosebud Transmission Lines (1, 2, 3, and 4)				
Permanent	0.00	0.00	0.00	0.00
Temporary				
MSTL	0.20	0.00	0.00	0.00
HVDC Transmission Line				
Permanent				
BLM	0.03	0.00	0.00	0.00
USDA ARS	0.00	0.00	0.00	0.00
MSTL	0.14	0.00	0.00	0.00
Temporary				
BLM	0.13	0.00	0.00	0.00
USDA ARS	0.00	0.00	0.00	0.00
MSTL	0.20	0.00	0.00	0.00
NORTH DAKOTA				
HVDC Transmission Line				
Permanent				
USDA Forest Service	0.01	0.00	0.00	0.00
NDSTL	0.00	0.00	0.00	0.00
Temporary				
USDA Forest Service	0.15	0.00	0.00	0.00
NDSTL	<0.01	0.00	0.00	0.00
Project Total	0.86	0.00	0.00	0.00

Source: Grid United 2025b, 2026a; WEST 2026

ARS = Agricultural Research Service; BLM = Bureau of Land Management; HVDC = high-voltage direct current; MSTL = Montana State Trust Lands; NDSTL = North Dakota State Trust Lands; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub; ROW = right-of-way; USDA = U.S. Department of Agriculture

Notes:

^a No wetland impacts on public lands are proposed along the Oliver and Morton Transmission Lines.

^b Permanent impacts are due to new access road construction or improvements to existing access roads.

^c Temporary impacts are due to temporary access roads or overland travel and temporary construction impact area.

^d Data in this table is a subset of all wetland data crossed by the Project impact areas, including only wetlands on federal land parcels.

^e Totals may not add up due to rounding.

^f Impacts on PFO wetlands resulting from forest vegetation removal and maintenance within the Project ROW are not anticipated on public lands.

Table 3.6-15
Wetland Impacts for the Project

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
Rosebud Transmission Lines (1, 2, 3, and 4)								
Montana	Rosebud	wroe404e	0.9	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Rosebud	wroe402e	2.0	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Rosebud	wroe504e	2.7	PEM	Temporary	Overland Travel	0.02	MSTL
Montana	Rosebud	wroe505e	3.1	PEM	Temporary	Temporary Impact Areas	0.18	MSTL
HVDC Transmission Line								
Montana	Rosebud	wroe506e	0.0	PEM	Temporary	Temporary Impact Areas	0.11	MSTL
Montana	Rosebud	wroe506e	0.0	PEM	Temporary	Overland Travel	0.01	MSTL
Montana	Rosebud	wroe503e	0.7	PEM	Temporary	Overland Travel	0.01	NA
Montana	Rosebud	wrol402e	13.2	PEM	Permanent	Existing, Needs Improvement Access Road	0.02	NA
Montana	Rosebud	wrol401e	13.5	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	wroi202e	15.8	PEM	Temporary	New, Temporary Access Road	0.25	NA
Montana	Rosebud	wroi202e	15.9	PEM	Temporary	Temporary Impact Areas	<0.01	NA
Montana	Rosebud	wroi202e	15.9	PEM	Permanent	Structure Foundation	<0.01	NA
Montana	Rosebud	wroi202e	15.9	PEM	Temporary	New, Temporary Access Road and Temporary Impact Areas	0.09	NA
Montana	Rosebud	wrol403e	13.5	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Rosebud	wroe201e	16.7	PEM	Temporary	New, Temporary Access Road	0.21	NA
Montana	Rosebud	wrog201e	18.8	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	wrog202e	22.4	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	wrog203e	22.5	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Rosebud	wroa501e	23.2	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	wrod201e	23.8	PEM	Temporary	New, Temporary Access Road	0.03	MSTL
Montana	Rosebud	wrog204e	24.1	PEM	Permanent	New, Permanent Access Road	0.02	MSTL
Montana	Rosebud	wrog205e	24.1	PEM	Permanent	New, Permanent Access Road	<0.01	MSTL
Montana	Rosebud	wrog206e	24.1	PEM	Permanent	New, Permanent Access Road	0.04	MSTL
Montana	Rosebud	wrog208e	24.2	PEM	Permanent	New, Permanent Access Road	0.02	MSTL
Montana	Rosebud	wrog208e	24.2	PEM	Permanent	New, Permanent Access Road	<0.01	MSTL
Montana	Rosebud	wrog208e	24.2	PEM	Permanent	New, Permanent Access Road	0.02	MSTL
Montana	Rosebud	wrog207e	24.2	PEM	Permanent	New, Permanent Access Road	0.02	MSTL
Montana	Rosebud	wrod200e	25.8	PEM	Temporary	New, Temporary Access Road	0.04	NA
Montana	Rosebud	wrod203e	27.0	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Rosebud	wroa202e	37.9	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Rosebud	wroa201e	38.8	PEM	Temporary	New, Temporary Access Road	0.06	NA
Montana	Rosebud	wroa200e	39.8	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Rosebud	wroe401e	40.3	PEM	Temporary	New, Temporary Access Road	0.02	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
Montana	Rosebud	wroe401e	40.4	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcun003e	43.7	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Custer	wcun002e	44.4	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Custer	wcun001e	44.6	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Custer	wcun004e	46.8	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcun006e	48.1	PEM	Temporary	New, Temporary Access Road	0.02	MSTL
Montana	Custer	wcun007e	48.5	PEM	Temporary	Overland Travel	<0.01	NA
Montana	Custer	wcua404e	52.9	PEM	Temporary	Existing, Needs Improvement Access Road	0.09	NA
Montana	Custer	wcua202e	54.3	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Custer	wcua202e	54.3	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Custer	wcue207e	69.9	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcue402e	73.8	PEM	Permanent	New, Permanent Access Road	0.02	NA
Montana	Custer	wcue401e	73.9	PEM	Permanent	New, Permanent Access Road	0.01	NA
Montana	Custer	wcue204e	74.4	PEM	Permanent	New, Permanent Access Road	0.06	NA
Montana	Custer	wcua403e	77.8	PEM	Temporary	Temporary Impact Areas	0.05	NA
Montana	Custer	wcua403e	77.8	PEM	Permanent	New, Permanent Access Road	0.02	NA
Montana	Custer	wcua401e	89.9	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Custer	wcuk003e	107.1	PEM	Permanent	New, Permanent Access Road	0.02	NA
Montana	Custer	wcuk002e	107.3	PEM	Permanent	New, Permanent Access Road	0.01	NA
Montana	Custer	wcuk001e	107.3	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Custer	wcul401e	107.7	PEM	Temporary	New, Temporary Access Road	0.04	NA
Montana	Custer	wcuk007e	108.1	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Custer	wcuk007e	108.1	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Custer	wcuk006e	108.2	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcuq002e	110.1	PEM	Permanent	New, Permanent Access Road	0.03	BLM
Montana	Custer	wcud215e	110.2	PEM	Permanent	New, Permanent Access Road	<0.01	NA
Montana	Custer	wcud215e	110.2	PEM	Temporary	New, Permanent Access Road	<0.01	NA
Montana	Custer	wcud214e	110.2	PEM	Permanent	New, Permanent Access Road	0.01	NA
Montana	Custer	wcud214e	110.2	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcuf200e	111.4	PEM	Temporary	New, Temporary Access Road	0.02	MSTL
Montana	Custer	wcuf200e	111.4	PEM	Temporary	New, Temporary Access Road	<0.01	MSTL
Montana	Custer	wcuy002e	112.6	PEM	Temporary	New, Temporary Access Road and Overland Travel	<0.01	BLM
Montana	Custer	wcud206e	113.1	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Custer	wcud206e	113.1	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcuh202e	113.9	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Custer	wcud203e	115.1	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Custer	wcud216e	115.6	PEM	Temporary	New, Temporary Access Road	0.03	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
Montana	Custer	wcud213e	115.9	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Custer	wcud212e	116.2	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Custer	wcud202e	117.3	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Fallon	wfag201e	120.0	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Fallon	wfag202e	120.1	PEM	Temporary	New, Temporary Access Road	0.03	NA
Montana	Fallon	wfag203e	121.2	PEM	Temporary	New, Temporary Access Road	0.04	NA
Montana	Fallon	wfag205e	121.3	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Fallon	wfae207e	122.3	PEM	Temporary	New, Temporary Access Road	<0.01	BLM
Montana	Fallon	wfal003e	127.0	PEM	Temporary	Overland Travel	0.02	BLM
Montana	Fallon	wfae404e	127.2	PEM	Temporary	Temporary Impact Area	0.02	BLM
Montana	Fallon	wfae403e	132.3	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.08	BLM
Montana	Fallon	wfae204e	135.5	PEM	Temporary	New, Temporary Access Road	0.05	NA
Montana	Fallon	wfan004e	136.4	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Fallon	wfan003e	136.7	PEM	Temporary	Overland Travel	0.01	NA
Montana	Fallon	wfal004e	142.9	PEM	Temporary	Overland Travel and Temporary Impact Area	0.10	NA
Montana	Fallon	wfai204e	151.5	PEM	Temporary	Overland Travel	0.02	NA
Montana	Fallon	wfak201e	160.0	PEM	Temporary	Overland Travel	0.05	NA
Montana	Fallon	wfak203e	160.2	PEM	Temporary	Overland Travel	0.05	NA
Montana	Fallon	wfak203e	160.2	PEM	Temporary	Overland Travel	0.26	NA
Montana	Fallon	wfak204e	160.4	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Fallon	wfak205e	160.6	PEM	Temporary	New, Temporary Access Road	<0.01	NA
Montana	Fallon	wfae201e	161.6	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	MSTL
Montana	Fallon	wfag207e	168.3	PEM	Temporary	Overland Travel	0.01	NA
Montana	Fallon	wfak002e	172.7	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.03	NA
Montana	Fallon	wfak002e	172.8	PEM	Temporary	Overland Travel	<0.01	NA
Montana	Fallon	wfak002e	172.8	PEM	Temporary	Overland Travel	<0.01	NA
Montana	Fallon	wfak002e	172.8	PEM	Temporary	Overland Travel	0.01	NA
Montana	Fallon	wfak001e	173.5	PEM	Temporary	Temporary Impact Area	0.14	NA
North Dakota	Golden Valley	wgon007e	175.5	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.02	NFS
North Dakota	Golden Valley	wgoe011e	175.7	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Golden Valley	wgoe012e	176.2	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Golden Valley	wgoe013e	177.4	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Golden Valley	wgon004e	179.0	PEM	Temporary	New, Temporary Access Road	0.07	NFS
North Dakota	Golden Valley	wgoa501e	179.4	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NFS
North Dakota	Golden Valley	wgoe201e	182.4	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Golden Valley	wgon003e	183.5	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Golden Valley	wgoa503e	185.8	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
North Dakota	Golden Valley	wgoa504e	185.9	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
North Dakota	Golden Valley	wgoa505e	186.1	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
North Dakota	Slope	wslk014e	194.4	PEM	Temporary	New, Temporary Access Road	<0.01	NFS
North Dakota	Slope	wslg200e	196.1	PEM	Temporary	New, Temporary Access Road	0.03	NFS
North Dakota	Slope	wslg204e	199.1	PEM	Temporary	New, Temporary Access Road	0.03	NFS
North Dakota	Slope	wslk016e	200.1	PEM	Temporary	New, Temporary Access Road	0.07	NA
North Dakota	Slope	wsll401e	204.9	PEM	Temporary	New, Temporary Access Road	0.05	NA
North Dakota	Slope	wsli202e	208.2	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Slope	wsll405e	212.0	PEM	Permanent	Existing, Needs Improvement Access Road	0.04	NA
North Dakota	Slope	wsll408e	213.9	PEM	Permanent	Existing, Needs Improvement Access Road	0.02	NA
North Dakota	Slope	wsld401e	218.1	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wslf418e	220.1	PEM	Temporary	New, Temporary Access Road	0.15	NA
North Dakota	Slope	wslf420e	220.3	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Slope	wslf420e	220.3	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Slope	wslf422e	221.3	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Slope	wslf414e	223.3	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Slope	wslf424e	224.2	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Slope	wsll413e	226.3	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Slope	wslf401e	228.0	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Slope	wslf401e	228.1	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Slope	wslf405e	229.4	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wslf406e	230.1	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wslo008e	231.4	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wslo009e	231.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wslo005e	232.7	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wsln003e	233.4	PEM	Temporary	New, Temporary Access Road	0.07	NA
North Dakota	Slope	wsln003e	233.5	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Slope	wsln003e	233.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wsln003e	233.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wsln003e	233.6	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wsln002e	234.1	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Slope	wslk002e	237.3	PEM	Temporary	Temporary Impact Area	<0.01	NA
North Dakota	Slope	wslk003e	237.8	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wsll001e	240.7	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Hettinger	whel406e	245.1	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.01	NA
North Dakota	Hettinger	whel406e	245.1	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Hettinger	whei202e	245.6	PEM	Temporary	Overland Travel	0.01	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
North Dakota	Hettinger	whea401e	247.4	PEM	Temporary	Temporary Impact Area	<0.01	NDSTL
North Dakota	Hettinger	whel408e	248.0	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.02	NA
North Dakota	Hettinger	whel407e	248.5	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Hettinger	wheq001e	257.6	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Hettinger	wherk003e	259.3	PEM	Temporary	New, Temporary Access Road	0.08	NA
North Dakota	Hettinger	whel405e	260.8	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Hettinger	whel405e	260.8	PEM	Temporary	Overland Travel and Temporary Impact Area	0.12	NA
North Dakota	Hettinger	whej001e	272.3	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.78	NA
North Dakota	Hettinger	whej001e	272.4	PEM	Temporary	Temporary Impact Area	0.05	NA
North Dakota	Hettinger	wheo003e	274.6	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.01	NA
North Dakota	Hettinger	wher009e	280.5	PEM	Temporary	Temporary Impact Area	0.39	NA
North Dakota	Hettinger	wher007e	282.5	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Grant	wgrh204e	305.7	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Grant	wgrg201e	314.1	PEM	Temporary	New, Temporary Access Road	0.09	NA
North Dakota	Grant	wgrg203e	315.2	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Grant	wgrd401e	322.6	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Grant	wgrq004f	322.9	PFO	Permanent (conversion)	Tree Clearing	0.04	NA
North Dakota	Grant	wgrg001e	325.7	PEM	Temporary	New, Temporary Access Road	0.15	NA
North Dakota	Grant	wgre404e	328.1	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Grant	wgre405e	328.4	PEM	Temporary	New, Temporary Access Road	0.05	NA
North Dakota	Grant	wgrd403e	329.6	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.02	NA
North Dakota	Grant	wgrd407e	330.7	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Grant	wgrc402e	331.5	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Grant	wgrc402e	331.6	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Grant	wgrc403e	331.9	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Grant	wgre403e	334.7	PEM	Temporary	Temporary Impact Area	0.04	NA
North Dakota	Grant	wgre403e	334.7	PEM	Temporary	Temporary Impact Area	0.12	NA
North Dakota	Grant	wgrc401e	334.9	PEM	Temporary	New, Temporary Access Road	0.05	NA
North Dakota	Grant	wgrc401e	335.4	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmrc402e	335.4	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Morton	wmrc403e	335.8	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Grant	wgra402e	336.8	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmrl401e	336.8	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmrl402e	337.1	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmrc201e	337.5	PEM	Temporary	New, Temporary Access Road	0.09	NA
North Dakota	Morton	wmri202e	338.7	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Morton	wmri201e	338.7	PEM	Temporary	New, Temporary Access Road	0.07	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
North Dakota	Morton	wmri204e	338.8	PEM	Temporary	New, Temporary Access Road	0.05	NA
North Dakota	Morton	wmob001e	340.4	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmob001e	340.5	PEM	Temporary	New, Temporary Access Road	0.03	NA
Oliver Transmission Line / Morton Transmission Line								
North Dakota	Morton	wmrq004e	1.7	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmrq004e	1.7	PEM	Temporary	Overland Travel	<0.01	NA
Oliver Transmission Line								
North Dakota	Morton	wmra404e	3.7	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmrd402e	3.7	PEM	Temporary	Temporary Impact Area	<0.01	NA
North Dakota	Morton	wmry006e	5.3	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Morton	wmrc202e	6.2	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.06	NA
North Dakota	Morton	wmre203e	6.9	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Morton	wmra502e	7.1	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.01	NA
North Dakota	Morton	wmra502e	7.2	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmra502e	7.3	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.08	NA
North Dakota	Morton	wmre205e	7.7	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmre205e	7.8	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Morton	wmre205e	7.9	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.07	NA
North Dakota	Morton	wmre205e	7.9	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.20	NA
North Dakota	Morton	wmre205e	8.1	PEM	Temporary	Overland Travel and Temporary Impact Area	0.41	NA
North Dakota	Morton	wmre205e	8.2	PEM	Temporary	Overland Travel	0.08	NA
North Dakota	Morton	wmre207e	10.0	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Morton	wmre211e	10.2	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmre204e	11.2	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Morton	wmre203e	11.4	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Morton	wmrq003e	14.1	PEM	Temporary	Overland Travel and Temporary Impact Area	0.02	NA
North Dakota	Morton	wmry008e	16.2	PEM	Temporary	New, Temporary Access Road	0.04	NA
North Dakota	Morton	wmrh202e	17.4	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmrh203e	17.5	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.39	NA
North Dakota	Morton	wmrd405e	21.2	PEM	Temporary	New, Temporary Access Road	0.11	NA
North Dakota	Morton	wmrl405e	21.5	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmrl405e	21.5	PEM	Temporary	Temporary Impact Area	0.02	NA
North Dakota	Morton	wmrl404e	21.5	PEM	Temporary	Temporary Impact Area	0.14	NA
North Dakota	Morton	wmra407e	21.8	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmry004e	22.6	PEM	Temporary	New, Temporary Access Road	0.05	NA
North Dakota	Morton	wmrs002e	24.1	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmrr004e	28.8	PEM	Temporary	New, Temporary Access Road	0.05	NA

Segment/State	County	Unique ID ^a	MP	Cowardin Class	Impact Type	Project Component ^b	Acres Impact ^c	Public Land Ownership
North Dakota	Morton	wmrr003e	29.1	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Morton	wmra401e	29.7	PEM	Temporary	New, Temporary Access Road	0.07	NA
North Dakota	Morton	wmra402e	29.7	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmra403e	29.9	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmre404e	31.8	PEM	Temporary	New, Temporary Access Road	0.27	NA
North Dakota	Morton	wmre405e	32.1	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Morton	wmre403e	32.6	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmre402e	32.8	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.27	NA
North Dakota	Morton	wmre402e	32.9	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Morton	wmre401e	33.2	PEM	Temporary	New, Temporary Access Road	0.06	NA
North Dakota	Morton	wmrd203e	36.9	PEM	Temporary	Temporary Impact Area	0.03	NA
North Dakota	Morton	wmrd203e	37.0	PEM	Temporary	Overland Travel	0.11	NA
North Dakota	Morton	wmrd204e	37.2	PEM	Temporary	New, Temporary Access Road and Overland Travel	0.18	NA
North Dakota	Morton	wmrd205e	37.5	PEM	Permanent	Existing, Needs Improvement Access Road	0.03	NA
North Dakota	Morton	wmrd201e	38.0	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Morton	wmrd407e	40.8	PEM	Temporary	Temporary Impact Area	0.01	NA
North Dakota	Morton	wmrd407e	40.8	PEM	Temporary	New, Temporary Access Road	0.02	NA
North Dakota	Morton	wmrl406e	40.9	PEM	Temporary	New, Temporary Access Road and Temporary Impact Area	0.08	NA
North Dakota	Morton	wmrl406e	40.9	PEM	Temporary	New, Temporary Access Road	0.03	NA
North Dakota	Oliver	wovb204e	41.9	PEM	Temporary	New, Temporary Access Road	0.10	NA
North Dakota	Oliver	wova401e	46.3	PEM	Temporary	Temporary Impact Area	0.21	NA
North Dakota	Oliver	wova401e	46.4	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Oliver	wova501e	46.7	PEM	Temporary	New, Temporary Access Road	0.03	NA
Morton Transmission Line								
North Dakota	Morton	wmrd401e	6.7	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Morton	wmrd401e	6.8	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Morton	wmrd401e	6.8	PEM	Temporary	Overland Travel and Temporary Impact Area	1.22	NA
North Dakota	Morton	wmrn002e	9.4	PEM	Temporary	New, Temporary Access Road and Overland Travel	<0.01	NA
North Dakota	Morton	wmrn003e	12.9	PEM	Temporary	New, Temporary Access Road	0.20	NA
North Dakota	Morton	wmrz002e	13.6	PEM	Temporary	New, Temporary Access Road	0.02	NA
Rosebud Converter Station								
Montana	Rosebud	wroe506e	0.0	PEM	Temporary	Temporary Impact Area	0.02	MSTL
Montana Subtotal							2.96	
North Dakota Subtotal							9.29	
Project Total							12.25	

Source: Grid United 2025b, 2026a; WEST 2026

BLM = Bureau of Land Management; HVDC = high-voltage direct current; ID = identification; MP = Milepost; MSTL = Montana State Trust Lands; NA = not applicable; NDSTL = North Dakota State Trust Lands; NFS = National Forest System; PEM = palustrine emergent; PFO = palustrine forested;

Notes:

- ^a Unique ID is the code given to wetlands during field surveys.
- ^b Project component categories related to access roads include Overland Travel; Existing, Needs Improvement; New, Permanent; and New, Temporary. Other categories, including Temporary Impact Areas and Structure Foundation, refer to non-access road impacts.
- ^c Impact acres are based on the area where Project impact areas cross a wetland polygon.

B.3.2.6. Minerals and Geology

**Table 3.7-1
Bedrock Units Crossed by the Project**

Geologic Formation	Period	Description
Alluvium	Quaternary	<ul style="list-style-type: none"> Gravel, sand, silt, and clay in channels of modern rivers and streams Clasts generally subrounded to well-rounded, resistant rock Thickness generally less than 10 meters (33 feet)
Alluvial terrace deposit	Quaternary	<ul style="list-style-type: none"> Moderately sorted, moderately rounded to well-rounded sand and gravel Underlies about 12 recognized terrace surfaces in Madison Valley Madison Valley, east of Madison River, includes all but the highest (and oldest) terrace-gravel deposit Mantled by less than 2 meters (6.5 feet) of loess at most places, although loess on many higher surfaces is thick enough to support cultivation Mostly less than 10 meters (33 feet) thick
Brule and Chadron formations	Tertiary	<ul style="list-style-type: none"> Pinkish siltstone, clay, and sand Alluvial and lacustrine deposits
Golden Valley Formation	Tertiary	<ul style="list-style-type: none"> Yellowish-brown, white, and yellow micaceous sandstone, sand, silt, and clay Fluvial deposits
Sentinel Butte Formation	Tertiary	<ul style="list-style-type: none"> Grayish-brown silt, sand, clay, sandstone, and lignite Alluvial, lacustrine, and marsh deposits
Bullion Creek Formation	Tertiary	<ul style="list-style-type: none"> Yellowish-brown silt, sand, clay, sandstone, and lignite Alluvial, lacustrine, and marsh deposits
Slope Formation	Tertiary	<ul style="list-style-type: none"> Grayish-brown to yellowish-brown silt, sand, clay, sandstone, and lignite deposits Alluvial, lacustrine, and marsh deposits
Cannonball Formation	Tertiary	<ul style="list-style-type: none"> Olive brown sand, shale, and sandstone Marine shoreline and offshore deposits
Fort Union Formation, Ludlow Member	Tertiary	<ul style="list-style-type: none"> Gray and brown shale, siltstone, silty or bentonitic claystone, sandstone, and coal Alluvial plain with marine-influenced tongues Thickness as much as 230 meters (755 feet)

Geologic Formation	Period	Description
Fort Union Formation, Lebo Member	Tertiary	<ul style="list-style-type: none"> • Dark gray carbonaceous shale, bentonitic claystone, sandstone, and coal • Alluvial plain • Thickness as much as 185 meters (607 feet)
Fort Union Formation, Tullock Member	Tertiary	<ul style="list-style-type: none"> • Yellow sandstone interbedded with subordinate grayish-brown and black shale and thin beds of coal • Alluvial plain • Thickness as much as 180 meters (590 feet)
Fort Union Formation, Tongue River Member	Tertiary	<ul style="list-style-type: none"> • Yellowish orange sandstone, sandy and silty carbonaceous shale, and coal • Alluvial plain • Thickness as much as 300 meters (984 feet)
Hell Creek Formation	Cretaceous	<ul style="list-style-type: none"> • Light gray, bentonitic claystone that alternates with gray to brown sandstone interbedded with carbonaceous shale • Laterally equivalent to Lance Formation • Fluvial and flood plain • Thickness as much as 335 meters (1,100 feet)
Fox Hills Formation, Colgate Member	Cretaceous	<ul style="list-style-type: none"> • White to yellowish, fine- to medium-grained, porous sandstone • Brackish to marine shoreline • Only present near Glendive (eastern Montana) and in several other isolated areas • Thickness 0–40 meters (0–130 feet)
Pierre Formation	Cretaceous	<ul style="list-style-type: none"> • Dark gray, partly silty shale with abundant bentonite beds and zones of gray, calcareous concretions • Marine • Thickness as much as 650 meters (2,133 feet) • Only upper 50 meters (164 feet) exposed

Source: MBMG 2023a; NDGS 2001, 2009; Grid United 2024

Table 3.7-2
Shallow Soil Depth to Bedrock by Project Component

Segment or Facility / Impact Type ^a / Project Component	Shallow Depth to Bedrock (acres) ^b
HVDC TRANSMISSION LINE	
Temporary	
Structure pads	1,013.9
Wire pulling / tensioning	667.8
Guard structures	12.0
Temporary access road	435.3
Overland travel	288.9
Turnaround areas	12.3
Permanent	
Structure footprint	4.3
ROW clearing ^c	519.0
Existing access road improvement	68.0
Permanent access road	124.3
ROSEBUD TRANSMISSION LINE	
Temporary	
Structure pads	1.6
Wire pulling / tensioning	0.1
Guard structures	0.3
Temporary access road	0.6
Overland travel	0.0
Turnaround areas	NA
Permanent	
Structure footprint	0.0
ROW clearing ^c	3.0
Existing access road improvement	NA
Permanent access road	NA
OLIVER TRANSMISSION LINE	
Temporary	
Structure pads	147.9
Wire pulling / tensioning	108.5
Guard structures	4.8
Temporary access road	81.1
Overland travel	27.5
Turnaround areas	1.2
Permanent	
Structure footprint	0.7
ROW clearing ^c	59.2
Existing access road improvement	6.4

Segment or Facility / Impact Type ^a / Project Component	Shallow Depth to Bedrock (acres) ^b
Permanent access road	NA
MORTON TRANSMISSION LINE	
Temporary	
Structure pads	57.9
Wire pulling / tensioning	21.6
Guard structures	1.6
Temporary access road	14.8
Overland travel	27.0
Turnaround areas	1.2
Permanent	
Structure footprint	0.3
ROW clearing ^c	15.4
Existing access road improvement	10.6
Permanent access road	NA
FACILITIES	
Temporary	
Rosebud County Converter Station	0.1
Morton County Converter Station	30.1
Morton County Switchyard	6.6
Permanent	
Colstrip Substation expansion	NA
Rosebud County Converter Station	NA
Morton County Converter Station	2.0
Morton County Switchyard	NA
Existing access road improvement	NA
Permanent access road	0.6

Source: Grid United 2024, 2026

CMRP = Construction, Mitigation, and Reclamation Plan; HVDC = high-voltage direct current; NA = not applicable; ROW = right-of-way

Notes:

^a Because of overlapping Project impact areas, the sum of temporary and permanent impacts of the various Project components overestimates the total impacts and, therefore, are not provided in this table.

^b Shallow bedrock consists of soils with a restrictive layer of densic material or lithic bedrock within 60 inches of the soil surface.

^c Clearing forested areas within the ROW for each transmission line are considered permanent impact areas. Trees and tall shrubs within the ROW would be cleared and permanently maintained during operations of the Project, as further discussed in Section 8.0 of the CMRP (Appendix E).

Table 3.7-3
Shallow Bedrock Crossed by the Project

Project Component / State / County	Temporary (acres) ^{a, b}	Permanent (acres) ^{a, b}
HVDC TRANSMISSION LINE		
Montana		
Rosebud	294.5	57.4
Custer	458.7	120.6
Fallon	377.4	5.3
<i>Subtotal^c</i>	<i>1,130.7</i>	<i>183.4</i>
North Dakota		
Golden Valley	51.0	6.0
Slope	372.6	3.0
Hettinger	257.7	0.5
Grant	313.0	3.6
Morton	41.1	0.1
<i>Subtotal^c</i>	<i>1,035.4</i>	<i>13.2</i>
ROSEBUD TRANSMISSION LINE		
Montana		
Rosebud	2.2	0.6
<i>Subtotal^c</i>	<i>2.2</i>	<i>0.6</i>
OLIVER TRANSMISSION LINE		
North Dakota		
Morton	254.6	5.9
Oliver	79.9	1.2
<i>Subtotal^c</i>	<i>334.4</i>	<i>7.1</i>
MORTON TRANSMISSION LINE		
North Dakota		
Morton	105.2	10.8
<i>Subtotal^c</i>	<i>105.2</i>	<i>10.8</i>
FACILITIES		
Montana		
Rosebud	0.0	0.0
<i>Subtotal^c</i>	<i>0.0</i>	<i>0.0</i>
North Dakota		
Morton	36.7	2.0
<i>Subtotal^c</i>	<i>36.7</i>	<i>2.0</i>

Project Component / State / County	Temporary (acres) ^{a, b}	Permanent (acres) ^{a, b}
Total	2,644.7	217.1

Source: Grid United 2024, 2026

HVDC = high-voltage direct current

Notes:

^a Surface bedrock consists of soils with a restrictive layer of densic material or lithic bedrock within 60 inches of the soil surface.

^b Totals may not add up due to rounding.

^c This table accounts for overlapping Project impact areas; where this occurs, it does not double-count acreages to provide an accurate summary of total Project impacts by transmission line and facility. More detailed impacts by Project component are provided in Table 3.7-2.

Table 3.7-4
Oil and Gas Leases Crossed by Project Components of the High-Voltage Direct Current Transmission Line

Impact Type ^a / Project Component	BLM Unleased (acres)	BLM Acquired (acres)	MMB Active Lease (acres)
Temporary			
Structure pads	161.6	6.4	18.4
Wire pulling / tensioning	109.3	<0.1	16.7
Guard structures	0.7	0.0	1.1
Temporary access road	86.6	1.3	2.0
Overland travel	21.8	3.7	7.6
Turnaround areas	3.6	0.0	0.1
<i>Subtotal</i>	<i>383.6</i>	<i>11.5</i>	<i>45.9</i>
Permanent			
Structure footprint	0.7	<0.1	<0.1
ROW clearing ^b	59.1	0.0	0.0
Existing access road improvement	14.5	0.0	0.9
Permanent access road	64.4	0.0	0.0
<i>Subtotal</i>	<i>138.7</i>	<i><0.1</i>	<i>1.0</i>

Source: BLM 2021; Grid United 2024, 2026

BLM = Bureau of Land Management; CMRP = Construction, Mitigation, and Reclamation Plan;

MMB = Minerals Management Bureau; ROW = right-of-way

Notes:

^a Because of overlapping Project impact areas, the sum of temporary and permanent impacts of various Project components overestimates the total impacts and, therefore, are not provided in this table.

^b Forested areas within the ROW for each transmission line have been identified as permanent impacts. Trees and tall shrubs within the ROW would be cleared and permanently maintained during operations of the Project, as further discussed in Section 8.0 of the CMRP (Appendix E).

Table 3.7-5
North Dakota Uranium-Bearing Formations Crossed by Project Components of the
High-Voltage Direct Current Transmission Line

Segment / Impact Type ^a / Project Component	Uranium-Bearing Formations (acres)
Temporary	
Structure pads	39.8
Wire pulling / tensioning	14.4
Guard structures	0.6
Temporary access road	14.2
Overland travel	20.3
Turnaround areas	0.5
<i>Subtotal</i>	<i>89.8</i>
Permanent	
Structure footprint	0.2
ROW clearing ^b	1.2
Existing access road improvement	0.5
<i>Subtotal</i>	<i>1.9</i>

Source: NDGS 2009; Grid United 2026

CMRP = Construction, Mitigation, and Reclamation Plan; HVDC = high-voltage direct current; ROW = right-of-way

Notes:

^a Because of overlapping Project impact areas, the sum of temporary and permanent impacts of the various Project components overestimates the total impacts and, therefore, are not provided in this table.

^b Forested areas within the ROW for each transmission line have been identified as Project permanent impacts. Trees and tall shrubs within the ROW would be cleared and permanently maintained during operations of the Project, as further discussed in Section 8.0 of the CMRP (Appendix E).

Table 3.7-6
Summary of Slope Percentages Crossed by Transmission Line Segments

Segment / State / County	Between 0 and 15 Percent (acres) ^a	Between 15 and 30 Percent (acres) ^a	Greater than 30 Percent (acres) ^a	Not Rated (acres) ^a
HVDC TRANSMISSION LINE				
Montana				
Rosebud	321.2	128.2	75.3	3.7
Custer	488.4	288.9	121.6	30.7
Fallon	532.9	17.5	65.5	--
<i>Subtotal</i>	<i>1,342.5</i>	<i>434.6</i>	<i>262.5</i>	<i>34.4</i>

Segment / State / County	Between 0 and 15 Percent (acres) ^a	Between 15 and 30 Percent (acres) ^a	Greater than 30 Percent (acres) ^a	Not Rated (acres) ^a
North Dakota				
Golden Valley	117.6	5.4	--	--
Slope	510.1	15.0	32.8	--
Hettinger	501.5	1.9	7.4	--
Grant	335.3	25.4	0.7	--
Morton	56.1	6.9	1.6	--
<i>Subtotal</i>	<i>1,520.6</i>	<i>54.5</i>	<i>42.5</i>	<i>--</i>
ROSEBUD TRANSMISSION LINE				
Montana				
Rosebud	61.0	7.5	2.2	--
<i>Subtotal</i>	<i>61.0</i>	<i>7.5</i>	<i>2.2</i>	<i>--</i>
OLIVER TRANSMISSION LINE				
North Dakota				
Morton	396.7	30.0	47.1	--
Oliver	98.7	2.1	30.8	--
<i>Subtotal</i>	<i>495.4</i>	<i>32.0</i>	<i>77.9</i>	<i>--</i>
MORTON TRANSMISSION LINE				
North Dakota				
Morton	162.3	26.7	1.8	--
<i>Subtotal</i>	<i>162.3</i>	<i>26.7</i>	<i>1.8</i>	<i>--</i>
FACILITIES				
Montana				
Rosebud	52.5	0.2	--	--
<i>Subtotal</i>	<i>52.5</i>	<i>0.2</i>	<i>--</i>	<i>--</i>
North Dakota				
Morton	154.7	5.4	--	--
<i>Subtotal</i>	<i>154.7</i>	<i>5.4</i>	<i>--</i>	<i>--</i>
Total	3,788.9	560.8	386.8	34.4

Source: Grid United 2026

HVDC = high-voltage direct current

Notes:

^a Totals may not add up due to rounding.

Table 3.7-7
North Dakota Erionite Testing Radii Crossed by Project Components of the High-Voltage Direct Current Transmission Line

Segment or Facility / Impact Type ^a / Project Component	Erionite Testing Radii (acres)	Known Erionite Locations (acres) ^b
Temporary		
Structure pads	139.2	146.0
Wire pulling/tensioning	116.9	109.5
Guard structures	2.0	2.0
Temporary access road	34.2	32.5
Overland travel	79.2	77.3
Turnaround areas	0.7	0.8
Permanent		
Structure footprint	0.6	0.6
ROW clearing ^b	15.2	15.2
Existing access road improvement	2.6	2.6
Permanent access road	0.0	0.0

Source: Grid United 2025b, 2026

CMRP = Construction, Mitigation, and Reclamation Plan; HVDC = high-voltage direct current;

ROW = right-of-way

Notes:

^a Because of overlapping Project impact areas, the sum of temporary and permanent impacts of the various Project components overestimates the total impacts and, therefore, are not provided in this table.

^b Forested areas within the ROW for each transmission line have been identified Project permanent impacts. Trees and tall shrubs within the ROW would be cleared and permanently maintained during operations of the Project, as further discussed in Section 8.0 of the CMRP (Appendix E).

Table 3.7-8
Areas Where Blasting May Occur

Route / Land / Ownership / Project Area	Facility Type		Total ^a (acres)
	Temporary (acres) ^b	Permanent (acres)	
HVDC TRANSMISSION LINE	435.3	196.6	631.9
Private Land	356.2	143.2	499.4
Structure footprint	NA	3.6	3.6
Access road: Existing, Needs Improvement	NA	57.4	57.4
Access road: New, Permanent	NA	82.2	82.2
Access road: New, Temporary	356.2	NA	356.2
BLM	20.0	17.3	37.3
Structure footprint	NA	0.1	0.1

Route / Land / Ownership / Project Area	Facility Type		Total ^a (acres)
	Temporary (acres) ^b	Permanent (acres)	
Access road: Existing, Needs Improvement	NA	5.0	5.0
Access road: New, Permanent	NA	12.2	12.2
Access road: New, Temporary	20.0	NA	20.0
USDA FOREST SERVICE	15.0	1.1	16.1
Structure footprint	NA	0.1	0.1
Access road: Existing, Needs Improvement	NA	1.0	1.0
Access road: New, Temporary	15.0	NA	15.0
USDA	14.1	19.9	34.1
Structure footprint	NA	0.1	0.1
Access road: New, Permanent	NA	19.8	19.8
Access road: New, Temporary	14.1	NA	14.1
MSTL	28.4	14.3	42.7
Structure footprint	NA	0.2	0.2
Access road: Existing, Needs Improvement	NA	4.0	4.0
Access road: New, Permanent	NA	10.1	10.1
Access road: New, Temporary	28.4	NA	28.4
NDSTL—SURFACE	1.6	0.7	2.3
Surface footprint	NA	0.1	0.1
Access road: Existing, Needs Improvement	NA	0.6	0.6
Access road: New, Temporary	1.6	NA	1.6
ROSEBUD TRANSMISSION LINE	0.6	0.0	0.7
Private Land	0.6	0.0	0.7
Structure footprint	NA	0.0	0.0
Access road: New, Temporary	0.6	NA	0.6
MSTL	NA	NA	NA
Structure footprint	NA	NA	NA
OLIVER TRANSMISSION LINE	81.1	7.1	88.2
Private Land	80.3	6.1	86.4
Structure footprint	NA	0.7	0.7
Access road: Existing, Needs Improvement	NA	5.4	5.4
Access road: New, Temporary	80.3	NA	80.3
NDSTL—Surface	0.9	1.0	1.9
Access road: Existing, Needs Improvement	NA	1.0	1.0
Access road: New, Temporary	0.9	NA	0.9
MORTON TRANSMISSION LINE	14.8	10.9	25.6
Private Land	14.8	10.9	25.6

Route / Land / Ownership / Project Area	Facility Type		Total ^a (acres)
	Temporary (acres) ^b	Permanent (acres)	
Structure footprint	NA	0.3	0.3
Access road: Existing, Needs Improvement	NA	10.6	10.6
Access road: New, Temporary	14.8	NA	14.8
FACILITY—ACCESS ROAD EXISTING, NEEDS IMPROVEMENT	NA	NA	NA
Private Land	NA	NA	NA
Access road: Existing, Needs Improvement	NA	NA	NA
MSTL	NA	NA	NA
Access road: Existing, Needs Improvement	NA	NA	NA
FACILITY—ACCESS ROAD NEW, PERMANENT	NA	0.6	0.6
Private Land	NA	0.6	0.6
Access road: New, Permanent	NA	0.6	0.6
FACILITY—MORTON COUNTY CONVERTER STATION	NA	NA	NA
Private Land	NA	NA	NA
Facility	NA	NA	NA
FACILITY—MORTON COUNTY SWITCHYARD	NA	NA	NA
Private Land	NA	NA	NA
Facility	NA	NA	NA
FACILITY—ROSEBUD COUNTY CONVERTER STATION	NA	NA	NA
MSTL	NA	NA	NA
Facility	NA	NA	NA

Source: Grid United 2025c, 2026

BLM = Bureau of Land Management; HVDC = high-voltage direct current; MSTL = Montana State Trust Lands; NA = not applicable; NDSTL = North Dakota State Trust Lands; USDA = U.S. Department of Agriculture

Notes:

^a Totals may not sum due to rounding.

^b Temporary facilities would be restored as close to pre-construction conditions as possible, while any blasting impacts on minerals would be permanent.

Table 3.7-9
Potential Mineral Reuse on Split Estate Properties

Route / BLM Subsurface Minerals Category / Project Component	Impact Type			Total ^a (acres)
	All Federal Minerals	Federal Minerals Except Coal	Other	
HVDC TRANSMISSION LINE	111.4	22.9	5.3	139.6
Temporary	68.7	19.2	5.2	93.1
Access road: New, Temporary	65.3	18.8	5.0	89.1
Turnaround	3.4	0.4	0.2	3.8
Permanent	42.7	3.7	0.1	46.5
Structure footprint	0.5	0.1	<0.1	0.6
Access road: Existing, Needs Improvement	12.6	3.6	0.0	16.2
Access road: New, Permanent	29.6	0.0	0.0	29.6
MORTON TRANSMISSION LINE	0.9	0.0	0.0	0.9
Temporary	0.8	0.0	0.0	0.8
Access road: New, Temporary	0.8	0.0	0.0	0.8
Permanent	<0.1	0.0	0.0	<0.1
Structure footprint	<0.1	0.0	0.0	<0.1
<i>Temporary Subtotal</i>	<i>69.5</i>	<i>19.2</i>	<i>5.2</i>	<i>93.9</i>
<i>Permanent Subtotal</i>	<i>42.8</i>	<i>3.7</i>	<i>0.1</i>	<i>46.5</i>
Project Total	112.3	22.9	5.3	140.5

Source: Grid United 2025d, 2026

BLM = Bureau of Land Management; HVDC = high-voltage direct current

Notes:

^a Totals may not sum due to rounding.

B.3.2.7. Land Use and Recreation

**Table 3.8-1
Permanent Transmission Line Crossings of Public and Private Lands (miles)**

State/County	State of Montana	State of North Dakota	BLM	USDA Forest Service	USDA ARS	Private and Other ^a	Project Total ^b
MONTANA							
HVDC Transmission Line							
Rosebud	6.4	0.0	0.3	0.0	0.0	30.0	36.7
Custer	4.4	0.0	4.1	0.0	7.9	64.7	81.2
Fallon	3.9	0.0	5.3	0.0	0.0	45.0	54.1
Rosebud Transmission Line							
Rosebud	2.2	0.0	0.0	0.0	0.0	4.5	6.6
<i>Montana Subtotal ^b</i>	<i>17.0</i>	<i>0.0</i>	<i>9.8</i>	<i>0.0</i>	<i>7.9</i>	<i>144.0</i>	<i>178.6</i>
NORTH DAKOTA							
HVDC Transmission Line							
Golden Valley	0.0	0.0	0.0	3.1	0.0	11.5	14.7
Slope	0.0	1.0	0.0	7.1	0.0	48.1	56.3
Hettinger	0.0	2.1	0.0	0.0	0.0	48.8	50.8
Grant	0.0	1.5	0.0	0.0	0.0	39.8	41.3
Morton	0.0	0.0	0.0	0.0	0.0	6.6	6.6
Oliver	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Morton Transmission Line							
Morton	0.0	0.0	0.0	0.0	0.0	21.8	21.8

State/County	State of Montana	State of North Dakota	BLM	USDA Forest Service	USDA ARS	Private and Other ^a	Project Total ^b
Oliver Transmission Line							
Morton	0.0	0.1	0.0	0.0	0.0	41.1	41.2
Oliver	0.0	0.0	0.0	0.0	0.0	10.5	10.5
<i>North Dakota Subtotal ^b</i>	<i>0.0</i>	<i>4.7</i>	<i>0.0</i>	<i>10.2</i>	<i>0.0</i>	<i>228.2</i>	<i>243.1</i>
Project Total ^b	17.0	4.7	9.8	10.2	7.9	372.2	421.7

Source: Grid United 2024, 2026a

ARS = Agricultural Research Service; BLM = Bureau of Land Management; HVDC = high-voltage direct current; USDA = U.S. Department of Agriculture

Notes:

^a Primarily private land but also includes approximately 13 highway crossings and 160 other public road crossings. Road crossings vary in length.

^b Totals may not sum due to rounding.

Table 3.8-2
Permanent Transmission Line Crossings by Land Cover Classification (miles)

State / Project Component / County	Grassland and Shrubland	Agricultural	Forested	Wetlands	Open Water	Developed
MONTANA						
Rosebud Transmission Line						
Rosebud	6.3	0.0	0.1	0.0	0.0	0.1
HVDC Transmission Line						
Rosebud	34.5	0.2	1.6	0.4	0.0	<0.1
Custer	77.3	1.0	1.5	0.9	<0.1	0.5
Fallon	41.9	11.5	0.1	0.3	0.0	1.8
<i>Montana Subtotal^a</i>	<i>160.1</i>	<i>12.6</i>	<i>3.4</i>	<i>1.6</i>	<i><0.1</i>	<i>2.5</i>
NORTH DAKOTA						
HVDC Transmission Line						
Golden Valley	12.2	0.7	0.0	<0.1	0.0	0.1
Slope	40.0	14.4	0.1	0.5	<0.1	1.1
Hettinger	12.3	36.9	0.0	0.3	0.1	1.1
Grant	27.4	13.2	0.1	<0.1	0.0	0.6
Morton	5.3	1.2	0.0	0.0	0.0	<0.1
Morton Transmission Line						
Morton	14.5	6.9	0.1	0.0	0.0	0.3
Oliver Transmission Line						
Morton	29.2	10.8	0.4	<0.1	<0.1	0.7
Oliver	10.0	0.2	0.0	0.0	0.0	0.2
<i>North Dakota Subtotal^a</i>	<i>151.0</i>	<i>84.4</i>	<i>0.1</i>	<i>0.5</i>	<i><0.1</i>	<i>1.1</i>
Project Total^a	311.0	97.0	4.2	2.6	0.2	6.7

Source: Grid United 2024, 2026a

HVDC = high-voltage direct current; NLCD = National Land Cover Database; USGS = U.S. Geological Survey

Notes:

^a Totals may not sum due to rounding.

Land cover types are derived from the USGS NLCD. Land cover categories within the footprint of the proposed converter stations and switchyard include the following:

- Grassland and Shrubland: NLCD land cover types of grassland herbaceous, scrub/shrub, and barren land
- Agricultural: NLCD land cover types of cultivated crops and hay/pasture
- Forested: NLCD land cover types of evergreen, deciduous, and mixed forest
- Wetlands: NLCD types of emergent herbaceous wetlands and woody wetlands
- Open Water: NLCD type of open water
- Developed: NLCD types of Low or Medium Intensity Development or Open Space Developed

Table 3.8-3
Structures within 200 feet of Project Components

State / Project Component	Approximate MP	Building Type	Distance From Structure to Edge of Construction Work Areas (feet)	Direction of Project Component
Montana				
HVDC Transmission Line	88.9	Grain bin	99	Northwest
	150.6	Shed	32	North
	150.9	Shed	130	North
	151.1	Shed	157	Northeast
Rosebud Transmission Line	0.1	Shed	179	Southeast
North Dakota				
HVDC Transmission Line	289.7	Shed	143	North
	308.7	Grain bin	91	North
Oliver Transmission Line	36.6	Shed	76	East
	41.3	Shed	162	Northwest

Source: Grid United 2024, 2026a

HVDC = high-voltage direct current; MP = Milepost

Table 3.8-4
Number of Residences within 0.25 Mile of Project Centerline

State / Project Component	County	0 to 600 feet	601 to 1,000 feet	1,001 to 1,320 feet (0.25 mile)
Montana				
HVDC Transmission Line	Rosebud	0	0	0
	Custer	0	1	0
	Fallon	0	1	1
North Dakota				
HVDC Transmission Line	Slope	0	2	1
	Hettinger	0	2	1
	Grant	0	8	1
Oliver Transmission Line	Oliver	0	2	0
	Morton	0	12	13
Morton Transmission Line	Morton	1	0	1
Total		1	28	18

Source: Grid United 2025b, 2026b

HVDC = high-voltage direct current

Table 3.8-5
Electronic Installations within 2,000 Feet of the Project

State/ County	Installation Type	Licensee	Latitude	Longitude	Distance from Centerline (feet)	Call Sign
Montana						
Fallon	Cellular	Gold Creek Cellular of Montana Limited Partnership; Verizon	46.401389	-104.802500	618	KNKR293

Source: FCC 2025; Grid United 2026a

Table 3.8-6
State Trust Lands Crossed by Project Transmission Lines

State / Project Component / County	Distance Crossed (miles) ^a	MP
MONTANA		
Rosebud Transmission Line		
Rosebud	0.6	0.0–0.4
	1.5	2.1–3.2
<i>Rosebud Transmission Line Subtotal</i>	<i>2.1</i>	<i>NA</i>
HVDC Transmission Line		
Rosebud	0.7	0.0–0.7
	1.0	12.4–13.5
	1.1	17.3–18.4 ^b
	1.0	23.6–24.6
	0.3	28.9–29.3
	1.0	35.5–36.5
	1.4	41.5–42.9 ^b
Custer	<0.1	42.9–42.9
	0.1	48.1–48.2 ^b
	0.5	64.1–64.6
	0.2	76.2–76.4 ^b
	<0.1	82.7–82.8
	1.8	83.7–85.5
	0.3	93.4–93.7
	0.4	98.6–99.0
	1.0	110.8–111.8 ^b

State / Project Component / County	Distance Crossed (miles) ^a	MP
Fallon	0.6	125.0–125.5 ^b
	0.2	132.4–132.6 ^b
	1.1	137.5–138.6 ^{b,c}
	1.0	150.1–151.2 ^b
	1.1	155.1–156.2
<i>HVDC Transmission Line Subtotal</i>	<i>17.1</i>	<i>NA</i>
NORTH DAKOTA		
HVDC Transmission Line		
Slope	0.5	224.9–225.4
	0.5	225.4–225.9
Hettinger	<0.1	247.4–247.5
	0.5	254.3–254.9
	0.5	254.9–255.3
	<0.1	255.3
	0.5	269.5–270.0
	0.5	270.0–270.5
Grant	0.5	309.4–309.9
	0.5	321.2–321.7
	0.5	321.7–322.2
	<0.1	322.2
<i>HVDC Transmission Line Subtotal</i>	<i>4.6</i>	<i>NA</i>
Oliver Transmission Line		
Morton	<0.1	16.9–17.0
	<0.1	17.6–17.7
<i>Oliver Transmission Line Subtotal</i>	<i>0.1</i>	<i>NA</i>

Source: Grid United 2024, 2026a

DNRC = Department of Natural Resources and Conservation; HVDC = high-voltage direct current; MP = Milepost; NA = not applicable

Notes:

^a Subtotals may not sum due to rounding.

^b Transmission line crossings of DNRC tracts open for public access.

^c Tract crossed is classified as open for public access but is shown as permanently closed on Montana DNRC database.

Table 3.8-7
Land Cover Affected by Converter Stations and Switchyard and Associated Access Roads (acres)

Project Component	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
Colstrip Substation expansion	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
Rosebud County Converter Station	19.4	24.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.4	1.6
Morton County Converter Station	<0.1	0.0	40.6	24.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Morton County Switchyard	6.6	0.0	83.6	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.9	<0.1

Source: Grid United 2024, 2026c

NLCD = National Land Cover Database; Perm. = permanent; Temp. = temporary; USGS = U.S. Geological Survey

Notes:

Land cover types are derived from the USGS NLCD. Land cover categories within the footprint of the proposed converter stations and switchyard include the following:

- Grassland and Shrubland: NLCD land cover types of grassland herbaceous, scrub/shrub, and barren land
- Agricultural: NLCD land cover types of cultivated crops and hay/pasture
- Forested: NLCD land cover types of evergreen, deciduous, and mixed forest
- Wetlands: NLCD types of emergent herbaceous wetlands and woody wetlands
- Open Water: NLCD type of open water
- Developed: NLCD types of Low or Medium Intensity Development or Open Space Developed

Table 3.8-8
Land Cover Affected by Proposed Alternative Access Roads (acres)

State / Project Component	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
MONTANA												
HVDC Transmission Line												
Improved existing access road	NA	117.1	NA	1.1	NA	1.3	NA	4.4	NA	0.0	NA	2.3
Temporary access road	379.2	NA	1.6	NA	11.4	NA	0.6	NA	0.0	NA	2.6	NA
Overland travel	137.1	NA	36.3	NA	0.1	NA	3.0	NA	0.0	NA	5.2	NA
Turnaround areas	18.3	NA	0.6	NA	<0.1	NA	0.4	NA	0.0	NA	2.5	NA
Permanent access road	NA	172.6	NA	0.0	NA	5.3	NA	0.1	NA	0.0	NA	2.4
Rosebud Transmission Line												
Improved existing access road	NA	0.8	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0
Temporary access road	10.7	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.4	NA
Overland travel	3.8	NA	0.0	NA	<0.1	NA	0.0	NA	0.0	NA	0.4	NA
Rosebud County Converter Station												
Improved existing access road	NA	0.7	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	1.6
Temporary access road	0.6	NA	0.0	NA	0.2	NA	0.0	NA	0.0	NA	<0.1	NA
Overland travel	0.8	NA	0.0	NA	0.1	NA	0.0	NA	0.0	NA	<0.1	NA
Turnaround areas	0.3	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.4	NA
Permanent access road	NA	1.6	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0

State / Project Component	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
NORTH DAKOTA												
HVDC Transmission Line												
Improved existing access road	NA	12.4	NA	0.4	NA	0.0	NA	0.0	NA	0.0	NA	4.6
Temporary access road	164.2	NA	20.9	NA	0.3	NA	0.8	NA	0.0	NA	4.5	NA
Overland travel	150.9	NA	174.5	NA	0.1	NA	0.8	NA	0.0	NA	9.3	NA
Turnaround areas	2.4	NA	0.3	NA	0.0	NA	0.0	NA	0.0	NA	0.5	NA
Permanent access road	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0
Morton Transmission Line												
Improved existing access road	NA	7.6	NA	5.2	NA	0.0	NA	0.0	NA	0.0	NA	4.4
Temporary access road	14.2	NA	3.1	NA	0.2	NA	0.0	NA	0.0	NA	0.4	NA
Overland travel	27.4	NA	17.4	NA	0.0	NA	0.0	NA	0.0	NA	0.3	NA
Turnaround areas	0.9	NA	0.6	NA	0.0	NA	0.0	NA	0.0	NA	0.2	NA
Oliver Transmission Line												
Improved existing access road	NA	4.9	NA	0.1	NA	0.0	NA	0.0	NA	0.0	NA	3.6
Temporary access road	95.3	NA	7.3	NA	0.9	NA	<0.1	NA	0.0	NA	3.1	NA
Overland travel	41.2	NA	21.3	NA	0.0	NA	0.0	NA	0.0	NA	0.7	NA
Turnaround areas	1.4	NA	<0.1	NA	0.0	NA	0.0	NA	0.0	NA	0.1	NA
Morton County Switchyard												
Permanent access road	NA	0.0	NA	0.9	NA	0.0	NA	0.0	NA	0.0	NA	<0.1
Turnaround areas	0.0	NA	<0.1	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA

Source: Grid United 2024, 2026a

HVDC = high-voltage direct current; NA = not applicable; NLCD = National Land Cover Database; Perm. = permanent; Temp. = temporary; USGS = U.S. Geological Survey

Notes:

There are no access roads associated with the Colstrip Substation expansion.

Land cover types are derived from the USGS NLCD. Land cover categories within the footprint of the Proposed Alternative access roads include the following:

- Grassland and Shrubland: NLCD land cover types of grassland herbaceous, scrub/shrub, and barren land
- Agricultural: NLCD land cover types of cultivated crops and hay/pasture
- Forested: NLCD land cover types of evergreen, deciduous, and mixed forest
- Wetlands: NLCD types of emergent herbaceous wetlands and woody wetlands
- Open Water: NLCD type of open water
- Developed: NLCD types of Low or Medium Intensity Development or Open Space Developed

Table 3.8-9
Land Cover Impacts within the Transmission Line Project Impact Areas (acres) ^a

State / Project Component / County	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed		Total ^b	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
MONTANA														
Rosebud Transmission Line														
Rosebud	56.2	12.1	0.0	0.0	1.3	2.4	0.0	0.0	0.0	0.0	4.5	0.4	62.0	14.9
HVDC Transmission Line														
Rosebud	332.3	313.0	0.5	0.9	4.0	39.1	2.8	5.2	0.0	0.0	2.0	1.1	341.7	359.3
Custer	654.0	360.0	14.3	0.1	3.0	39.5	7.2	8.7	0.0	0.1	5.2	1.2	683.7	401.8
Fallon	451.3	40.5	123.5	0.4	0.0	3.3	2.4	1.2	0.0	0.0	21.1	1.0	598.2	46.4
<i>HVDC Transmission Line Subtotal</i>	<i>1,437.7</i>	<i>713.5</i>	<i>138.2</i>	<i>1.4</i>	<i>7.0</i>	<i>81.9</i>	<i>12.4</i>	<i>15.2</i>	<i>0.0</i>	<i>0.1</i>	<i>28.2</i>	<i>3.3</i>	<i>1,623.5</i>	<i>815.4</i>
<i>Montana Subtotal ^b</i>	<i>1,493.8</i>	<i>725.6</i>	<i>138.2</i>	<i>1.4</i>	<i>8.3</i>	<i>84.2</i>	<i>12.4</i>	<i>15.2</i>	<i>0.0</i>	<i>0.1</i>	<i>32.8</i>	<i>3.8</i>	<i>1,685.5</i>	<i>830.3</i>
NORTH DAKOTA														
HVDC Transmission Line														
Golden Valley	97.4	23.8	10.0	<0.1	0.0	0.0	0.0	1.7	0.0	0.0	0.6	2.3	108.0	27.9
Slope	377.5	44.3	152.0	1.5	0.1	3.7	0.9	1.2	0.0	0.0	16.4	3.4	546.8	54.2
Hettinger	117.1	1.4	377.2	4.4	0.0	0.0	0.8	1.2	0.0	0.0	12.8	0.8	507.8	7.7
Grant	241.7	21.6	110.1	1.4	0.0	3.5	0.1	1.2	0.0	0.0	2.3	1.4	354.2	29.0
Morton	48.4	15.5	11.7	0.1	<0.1	0.2	0.0	0.0	0.0	0.0	0.2	0.2	60.3	16.0
<i>HVDC Transmission Line Subtotal</i>	<i>882.0</i>	<i>106.6</i>	<i>660.9</i>	<i>7.3</i>	<i>0.1</i>	<i>7.4</i>	<i>1.8</i>	<i>5.3</i>	<i>0.0</i>	<i>0.0</i>	<i>32.2</i>	<i>8.2</i>	<i>1,577.1</i>	<i>134.9</i>
Morton Transmission Line ^c														
Morton	106.6	17.9	64.1	5.5	<0.1	2.8	0.0	0.0	0.0	0.0	1.9	4.5	172.6	30.6

State / Project Component / County	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed		Total ^b	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
Oliver Transmission Line ^c														
Morton	319.0	47.6	128.3	0.5	0.2	9.1	<0.1	0.3	0.0	<0.1	6.3	4.6	453.9	62.1
Oliver	121.6	19.8	3.3	<0.1	<0.1	0.3	0.0	<0.1	0.0	0.0	1.0	<0.1	126.1	20.2
<i>Oliver Transmission Line Subtotal</i>	<i>440.6</i>	<i>67.4</i>	<i>131.7</i>	<i>0.5</i>	<i>0.3</i>	<i>9.4</i>	<i><0.1</i>	<i>0.3</i>	<i>0.0</i>	<i><0.1</i>	<i>7.4</i>	<i>4.6</i>	579.9	82.3
<i>North Dakota Subtotal ^b</i>	<i>1,429.2</i>	<i>191.9</i>	<i>856.7</i>	<i>13.4</i>	<i>0.4</i>	<i>19.6</i>	<i>1.8</i>	<i>5.6</i>	<i>0.0</i>	<i><0.1</i>	<i>41.4</i>	<i>17.3</i>	2,329.6	247.7
Project Total ^b	2,923.0	917.5	994.9	14.7	8.7	103.8	14.2	20.9	0.0	0.1	74.2	21.0	4,015.1	1,078.1

Source: Grid United 2024, 2026a

HVDC = high-voltage direct current; NLCD = National Land Cover Database; Perm. = permanent; ROW = right-of-way; Temp. = temporary; USGS = U.S. Geological Survey

Notes:

^a This table accounts for overlapping Project impact areas; where this occurs, this table does not double-count impact acreages to provide an accurate summary of total Project impacts by transmission line. This acreage is not inclusive of the ROW except where construction work areas, tree clearing areas, or permanent components overlap with the ROW.

^b Totals may not sum due to rounding.

^c The acreage associated with the 3.4 miles where the Morton and Oliver Transmission Lines are collocated have been included with the Oliver Transmission Line only.

Land cover types are derived from the USGS NLCD. Land cover categories within the footprint of the transmission line Project impact areas include the following:

- Grassland and Shrubland: NLCD land cover types of grassland herbaceous, scrub/shrub, and barren land
- Agricultural: NLCD land cover types of cultivated crops and hay/pasture
- Forested: NLCD land cover types of evergreen, deciduous, and mixed forest
- Wetlands: NLCD types of emergent herbaceous wetlands and woody wetlands
- Open Water: NLCD type of open water
- Developed: NLCD types of Low or Medium Intensity Development or Open Space Developed (landscaped or mowed areas)

Table 3.8-10
State Trust Lands Affected by the Proposed Alternative

State / Project Component / County	Impacts ^a (acres)	
	Temp.	Perm.
MONTANA		
Rosebud Transmission Line		
Rosebud	18.5	0.5
<i>Rosebud Transmission Line Subtotal</i>	<i>18.5</i>	<i>0.5</i>
Rosebud County Converter Station		
Rosebud	17.7	21.7
<i>Rosebud County Converter Station Subtotal</i>	<i>17.7</i>	<i>21.7</i>
HVDC Transmission Line		
Rosebud	69.3	16.0
Custer	49.9	10.7
Fallon	55.5	1.5
<i>HVDC Transmission Line Subtotal</i>	<i>174.8</i>	<i>28.1</i>
NORTH DAKOTA		
HVDC Transmission Line		
Slope	8.7	<0.1
Hettinger	20.5	<0.1
Grant	10.7	0.6
<i>HVDC Transmission Line Subtotal</i>	<i>39.8</i>	<i>0.7</i>
Oliver Transmission Line		
Morton	1.1	1.1
<i>Oliver Transmission Line Subtotal</i>	<i>1.1</i>	<i>1.1</i>
Project Total	252.0	52.1

Source: Grid United 2025a, 2026a

HVDC = high-voltage direct current

Notes:

^a Subtotals may not sum due to rounding.

Table 3.8-11
Bureau of Land Management Lands Affected by the Proposed Alternative

State / Project Component / County	Impacts (acres)	
	Temp.	Perm.
MONTANA		
HVDC Transmission Line		
Rosebud	3.0	<0.1
Custer	50.1	28.6
Fallon	68.8	0.2
Project Total	121.9	28.8

Source: Grid United 2025a, 2026a

HVDC = high-voltage direct current

Table 3.8-12
National Forest System Lands Affected by the Proposed Alternative

State / Project Component / County	Impacts ^a (acres)	
	Temp.	Perm.
NORTH DAKOTA		
HVDC Transmission Line		
Fallon	<0.1	0.0
Golden Valley	21.1	3.7
Slope	80.0	0.1
Project Total	101.1	3.8

Source: Grid United 2025a, 2026a

HVDC = high-voltage direct current; Perm. = permanent; Temp. = temporary

Notes:

^a Subtotals may not sum due to rounding.

Table 3.8-13
U.S. Department of Agriculture, Agriculture Research Service Lands Affected by the Proposed Alternative

State / Project Component / County	Impacts (acres)	
	Temp.	Perm.
MONTANA		
HVDC Transmission Line		
Custer	68.0	25.0
Project Total	68.0	25.0

Source: Grid United 2025a, 2026a

HVDC = high-voltage direct current; Perm. = permanent; Temp. = temporary

B.3.2.8. Visual and Aesthetics

Table 3.9-1
Acres of Project Features Crossing Bureau of Land Management Land

Project Feature	VRM Class II Acres	VRM Class III Acres	VRM Class IV Acres	Total Acres ^a
Access roads	15.5	9.8	45.9	71.2
Permanent	7.7	<0.1	20.8	28.7
Temporary	7.8	9.7	25.1	42.6
Access turnaround	0.8	0.1	1.0	2.0
Guard structure pad	0.3	0.0	0.3	0.6
Pulling site	7.3	9.0	28.6	44.9
Structure footprint	<0.1	<0.1	0.1	0.2
Structure pad	4.0	11.2	34.7	49.9
Total acres ^a	28.0	30.2	110.7	168.8

Source: Grid United 2026

VRM = Visual Resource Management

Notes:

^a Totals may not add up due to rounding.

Table 3.9-2
Key Observation Points

KOP Number	Location Description; View Direction	Distance from Proposed Alternative	Justification for Selected KOP	Visual Contract Rating Worksheet Completed? ^a
MT-02b	Graveyard Creek Road; south	0.1 mile from HVDC Transmission Line; MP 41.5	Graveyard Creek access road for BLM land and waterbody crossing	Yes
MT-03	Powder River Road; west	0.3 mile from HVDC Transmission Line; MP 94.1	View of the Powder River's valley from BLM land at river crossing	Yes
MT-04	Powder River Road; northeast	0.9 mile from HVDC Transmission Line; MP 97.7	View from Powder River Road	Yes
MT-05a	BLM VRM Class II parcel south of US 12	0.5 mile from HVDC Transmission Line; MP 102.7	Large area of contiguous BLM VRM II land south of US 12	Yes
MT-05b	BLM VRM Class II south of US 12; northwest and southwest	0.4 mile from HVDC Transmission Line; MP 101.2	Large area of contiguous BLM VRM II land south of US 12	Yes for northwest; No for southwest

KOP Number	Location Description; View Direction	Distance from Proposed Alternative	Justification for Selected KOP	Visual Contract Rating Worksheet Completed? ^a
MT-06	Milo's Montana Rest Area; south	0.6 mile from HVDC Transmission Line; MP 109.5	Highway rest area with views of BLM VRM II land	Yes
MT-07	BLM VRM Class II, north of US 12; west	<0.1 mile from HVDC Transmission Line; MP 116.8	Large area of contiguous BLM VRM II land north of US 12	Yes
MT-08	Plevna, Montana; south	0.5 mile from HVDC Transmission Line; MP 139	Primary road within town of Plevna	No
MT-09	Big Timber Park trail in Colstrip, Montana; east	0.8 mile from EHV AC Rosebud Transmission Line; MP 1	Public hiking trail northwest of Colstrip Substation	No
ND-02b	Little Missouri River crossing (east side of river); west	0.3 mile from HVDC Transmission Line; MP 188	Crossing the Little Missouri River, from the view of historical crossing and surrounding areas	No
ND-03	USDA Forest Service land south of 64th Street SW; south	0.9 mile from HVDC Transmission Line; MP 206.8	LMNG Scenery Management System Moderate land south of 64th Street; no structures or access roads present	No
ND-04	Enchanted Highway stop on northeast side of 61st Street SW and 102nd Avenue SW; south	0.4 mile from HVDC Transmission Line; MP 266	Crossing of the Enchanted Highway behind the "Pheasants on the Prairie" art installation near parking lot	No
ND-05	Old Red / Old 10 Scenic Byway (from the west); east	0.2 mile from EHV AC Oliver Transmission Line; MP 29	Crossing of the Old Red / Old 10 Scenic Byway	No

KOP Number	Location Description; View Direction	Distance from Proposed Alternative	Justification for Selected KOP	Visual Contrast Rating Worksheet Completed? ^a
ND-06	I-94 west of Mandan; east	0.3 mile from EHV AC Oliver Transmission Line; MP 30	Crossing of I-94	No

Source: Grid United 2026

AC = alternating current; BLM = Bureau of Land Management; EHV = extra-high voltage; HVDC = high-voltage direct current; I-94 = Interstate 94; KOP = key observation point; LMNG = Little Missouri National Grassland; MP = Milepost; SW = Southwest; VRM = Visual Resource Management; US 12 = U.S. Route 12; USDA = U.S. Department of Agriculture

Notes:

^a Visual contrast rating worksheets were not completed for all KOP locations; the locations that do have worksheets are included in Appendix G, Visual Simulations and Viewsheds, of this EIS.

B.3.2.9. Socioeconomics

Table 3.10-1
Counties within the Socioeconomic Analysis Area

State	County	Project Component
Montana	Rosebud	HVDC Transmission Line
		Rosebud Transmission Line
		Rosebud County Converter Station
		Colstrip Substation
	Custer	HVDC Transmission Line
	Fallon	HVDC Transmission Line
	Big Horn	No Project components in county
	Treasure	No Project components in county
	Powder River	No Project components in county
	Prairie	No Project components in county
	McCone	No Project components in county
	Dawson	No Project components in county
	Carter	No Project components in county
North Dakota	Golden Valley	HVDC Transmission Line
	Slope	HVDC Transmission Line
	Hettinger	HVDC Transmission Line
	Grant	HVDC Transmission Line
	Morton	Oliver Transmission Line
		HVDC Transmission Line
		Morton Transmission Line
		Morton County Converter Station
		Morton County Switchyard
	Oliver	Oliver Transmission Line
		Oliver County Substation
	Adams	No Project components in county
	Bowman	No Project components in county
	Stark	No Project components in county
	Dunn	No Project components in county
	Burleigh	No Project components in county
Wyoming	Sheridan	No Project components in county
South Dakota	Harding	No Project components in county
	Perkins	No Project components in county

HVDC = high-voltage direct current

Table 3.10-2
Population Statistics for the Socioeconomic Analysis Area

State/County	2010 Total Population	2020 Total Population	Percent Change (2010 to 2020) (%)	2020 Population Density (persons per square mile)
Montana	989,415	1,084,225	9.6	7.4
Big Horn	11,668	11,521	2.0	2.6
Carter	1,160	1,415	18.0	0.4
Custer ^a	11,699	11,867	1.4	3.1
Dawson	8,966	8,940	(0.3)	3.8
Fallon ^a	2,890	3,049	5.5	1.9
McCone	1,734	1,729	(0.3)	0.7
Powder River	1,743	1,694	(2.9)	0.5
Prairie	1,179	1,088	(8.4)	0.6
Rosebud ^a	9,233	8,329	(9.8)	1.7
Treasure	718	762	(5.8)	0.8
North Dakota	672,591	779,094	13.7	11.3
Adams	2,343	2,200	(6.1)	2.2
Bowman	3,151	2,993	(5.0)	2.6
Burleigh	81,308	98,458	21.1	60.3
Dunn	3,536	4,095	15.8	2.0
Golden Valley ^a	1,680	1,736	3.2	1.7
Grant ^a	2,394	2,301	(4.0)	1.4
Hettinger ^a	2,477	2,489	0.5	2.2
Morton ^a	27,471	33,291	17.5	17.3
Oliver ^a	1,846	1,877	1.7	2.6
Slope ^a	727	706	(3.0)	0.6
Stark	24,199	33,646	39	25.2
South Dakota	814,180	886,667	8.2	11.7
Harding	1,255	1,311	4.3	0.5
Perkins	2,982	2,835	(5.2)	1.0
Wyoming	563,626	576,851	(2.3)	5.9
Sheridan	29,116	30,921	5.8	12.3

Source: U.S. Census Bureau 2024

Notes:

^a County the Project crosses

Table 3.10-3
2023 Annual Average Labor Force Statistics for the Socioeconomic Analysis Area

State/County	Civilian Labor Force ^a	Employed ^a	Unemployed ^a	Unemployment Rate ^a (%)
Montana	573,862	558,457	15,405	2.7
Big Horn	4,583	4,397	186	4.1
Carter	688	675	13	1.9
Custer ^b	6,297	6,133	164	2.6
Dawson	4,290	4,187	103	2.4
Fallon ^b	1,638	1,612	26	1.6
McCone	984	966	18	1.8
Powder River	1,018	995	23	2.3
Prairie	673	658	15	2.2
Rosebud ^b	3,567	3,454	113	3.2
Treasure	339	330	9	2.7
North Dakota	419,254	410,761	8,493	2.0
Adams	958	939	19	2.0
Bowman	1,560	1,539	21	1.3
Burleigh	52,252	51,264	988	1.9
Dunn	3,181	3,141	40	1.3
Golden Valley ^b	870	854	16	1.8
Grant ^b	1,244	1,223	21	1.7
Hettinger ^b	1,358	1,334	24	1.8
Morton ^b	17,236	16,804	432	2.5
Oliver ^b	890	860	30	3.4
Slope ^b	341	333	8	2.3
Stark	18,738	18,426	312	1.7
South Dakota	481,775	473,077	8,698	1.8
Harding	730	717	13	1.8
Perkins	1,434	1,408	26	1.8
Wyoming	296,385	287,746	8,639	2.9
Sheridan	16,351	15,903	448	2.7

Source: U.S. Bureau of Labor Statistics 2025

Notes:

^a Annual average values rounded to the nearest whole number.

^b The Project crosses this county.

Table 3.10-4
2023 Percentage of Employment by Industry within the Socioeconomic Analysis Area

State/County	Agriculture, forestry, fishing and hunting, and mining ^a	Construction ^a	Manufacturing ^a	Wholesale trade ^a	Retail trade ^a	Transportation and warehousing and utilities ^a	Information ^a	Finance and insurance and real estate ^a	Professional, scientific, management, administrative, and waste management services ^a	Educational services and health care and social assistance ^a	Arts, entertainment, and recreation; and accommodation and food services ^a	Other services, except public administration ^a	Public administration ^a
Montana													
Big Horn	13.4	3.0	0.4	3.6	8.8	7.0	0.5	2.4	6.0	29.7	11.2	2.5	11.6
Carter	45.8	12.1	0.6	1.4	6.3	4.4	0.6	1.9	3.1	12.7	1.6	4.2	5.2
Custer ^b	31.8	9.9	0.3	0.0	10.2	7.3	0.3	2.3	6.3	15.4	5.7	2.8	7.7
Dawson	10.2	8.2	4.6	2.2	11.6	13.0	0.5	2.8	2.1	28.3	6.9	5.9	3.8
Fallon ^b	13.4	7.8	1.5	0.1	6.1	13.2	2.0	4.7	6.1	27.3	7.6	4.0	6.4
McCone	34.9	4.5	1.2	2.4	7.0	9.1	2.0	6.0	1.8	14.3	3.2	5.5	8.2
Powder River	28.0	9.2	0.9	1.5	7.1	4.9	2.8	1.2	5.6	21.1	4.5	5.6	7.6
Prairie	36.7	6.8	3.1	0.0	2.3	6.2	1.9	1.6	8.5	14.6	9.7	6.2	2.3
Rosebud ^b	7.9	6.3	2.0	1.1	18.8	5.4	1.4	5.3	6.0	25.4	7.6	5.2	7.7
Treasure	40.6	2.3	0.0	2.3	4.8	14.1	0.5	0.9	4.1	20.4	0.9	2.0	7.3
North Dakota													
Adams	19.7	5.7	1.8	3.4	12.2	4.0	0.3	5.6	5.7	29.1	5.2	3.3	3.8
Bowman	26.5	6.2	3.9	3.3	12.9	1.7	0.1	5.3	6.8	21.2	4.8	4.8	2.6
Burleigh	2.9	8.0	5.1	2.8	10.3	7.1	1.6	5.8	8.9	25.4	8.2	5.1	8.8
Dunn	21.1	8.3	9.7	1.7	11.5	8.2	0.0	4.5	6.0	12.9	5.2	4.2	6.7

State/County	Agriculture, forestry, fishing and hunting, and mining ^a	Construction ^a	Manufacturing ^a	Wholesale trade ^a	Retail trade ^a	Transportation and warehousing and utilities ^a	Information ^a	Finance and insurance and real estate ^a	Professional, scientific, management, administrative, and waste management services ^a	Educational services and health care and social assistance ^a	Arts, entertainment, and recreation; and accommodation and food services ^a	Other services, except public administration ^a	Public administration ^a
Golden Valley ^b	24.4	5.8	5.7	4.9	7.1	2.3	1.6	4.3	2.5	25.3	4.9	6.7	4.5
Grant ^b	24.2	5.9	1.6	2.0	9.9	6.8	1.1	5.0	6.2	25.1	2.9	3.5	5.9
Hettinger ^b	25.4	10.3	4.3	3.1	7.6	4.8	0.4	5.1	4.5	19.6	4.0	7.0	3.9
Morton ^b	5.1	8.0	5.8	1.6	13.2	6.5	1.3	6.0	6.8	24.2	9.7	4.7	7.0
Oliver ^b	16.5	8.0	6.2	1.8	5.6	12.7	1.7	4.5	5.7	21.9	3.5	5.7	6.2
Slope ^b	51.0	5.0	3.5	0.8	6.0	4.5	0.8	0.5	6.5	15.3	3.3	1.5	1.5
Stark	14.0	10.3	8.6	3.4	12.8	6.9	1.9	5.0	5.8	17.7	5.7	3.8	4.0
South Dakota													
Harding	45.3	8.3	1.6	0.9	9.9	5.0	1.5	1.9	2.2	7.6	3.3	6.1	6.4
Perkins	31.6	8.0	8.4	1.9	8.3	6.1	1.5	3.1	3.4	16.5	4.1	3.9	3.2
Wyoming													
Sheridan	9.0	11.4	3.8	0.7	7.9	5.2	1.6	4.2	8.3	27.2	9.1	4.6	6.8

Source: U.S. Census Bureau 2025a

Notes:

^a All numbers in percentages

^b County the Project crosses

Table 3.10-5
2023 Selected Housing Measures within the Socioeconomic Analysis Area

State/County	Total Housing Units	Total Vacant Units	Homeowner Vacancy Rate (%)	Rental Vacancy Rate (%)	Monthly Median Gross Rent (\$)
Montana					
Big Horn	4,533	842	1.6	3.9	686
Carter ^a	799	200	3.4	1.2	731
Custer	5,770	726	1.9	5.0	918
Dawson	4,377	667	2.1	0.2	823
Fallon ^a	1,451	306	2.1	17.0	772
McCone	1,082	264	1.0	5.0	543
Powder River	997	284	6.0	9.1	609
Prairie	667	147	3.9	6.1	827
Rosebud ^a	3,785	716	1.9	7.9	644
Treasure	479	97	2.3	0.0	992
North Dakota					
Adams	1,336	317	0.5	10.9	545
Bowman	1,637	400	3.3	25.7	869
Burleigh	43,387	3,026	0.9	8.6	996
Dunn	2,116	603	0.0	9.6	941
Golden Valley ^a	906	243	4.4	5.7	856
Grant ^a	1,642	570	2.2	8.5	650
Hettinger ^a	1,438	331	1.0	18.2	830
Morton ^a	15,334	1,805	2.5	6.4	1,036
Oliver ^a	912	185	0.0	23.8	725
Slope ^a	458	118	0.0	0.0	719
Stark	15,455	2,238	2.7	8.9	966
South Dakota					
Harding	702	209	0.0	10.3	478
Perkins	1,729	475	0.3	0.0	703
Wyoming					
Sheridan	15,236	1,721	0.4	3.2	950
Socioeconomic Analysis Area Total	126,228	16,490	NA	NA	NA

Source: U.S. Census Bureau 2025b

NA = not applicable

Notes:

^a County the Project crosses

Table 3.10-6
Estimated Transient Housing Facilities within the Socioeconomic Analysis Area

State/County	Number of Hotels/Motels	Number of Hotel/Motel Rooms	Number of RV/Campgrounds	Number of RV Sites	Total Rooms / RV Sites
Montana					
Big Horn	2	84	1	166	250
Carter	1	6	0	0	6
Custer ^a	7	480	3	37	517
Dawson	6	400	1	28	428
Fallon ^a	3	104	0	0	104
McCone	1	15	1	22	37
Powder River	3	50	3	28	78
Prairie	1	22	1	16	38
Rosebud ^a	6	148	1	10	158
Treasure	0	0	1	3	3
North Dakota					
Adams	0	0	1	10	10
Bowman	5	206	4	46	252
Burleigh	30	2,930	4	195	3,125
Dunn	1	30	1	113	143
Golden Valley ^a	1	39	1	4	43
Grant ^a	2	21	3	32	53
Hettinger ^a	3	42	2	30	72
Morton ^a	6	323	7	147	470
Oliver ^a	0	0	3	107	107
Slope	0	0	2	18	18
Stark	2	340	0	0	340
South Dakota					
Harding	0	0	1	8	8
Perkins	1	43	0	0	43
Wyoming					
Sheridan	5	318	1	40	358
Total	86	5,601	42	1,060	6,661

Source: Travel Montana 2024; North Dakota Tourism 2025

RV = recreational vehicle

Notes:

^a County the Project crosses

Table 3.10-7
Public Services in Counties within the Socioeconomic Analysis Area

State/County	Number of Hospitals	Number of Hospital Beds	Number of Fire Stations	Local Law Enforcement Agencies	Public Schools
Montana					
Big Horn	2	42	5	1	15
Carter	1	25	2	1	6
Custer ^a	1	109	5	2	10
Dawson	1	61	2	2	10
Fallon ^a	1	25	2	2	7
McCone	1	25	1	1	5
Powder River	0	0	3	1	4
Prairie	1	25	1	1	3
Rosebud ^a	1	57	5	2	15
Treasure	0	0	1	1	3
North Dakota					
Adams	1	25	2	1	1
Bowman	1	35	3	3	5
Burleigh	2	426	6	4	35
Dunn	0		2	2	3
Golden Valley ^a	0	0	4	1	4
Grant ^a	1	35	7	2	2
Hettinger ^a	0	0	4	1	4
Morton ^a	1	41	8	2	20
Oliver ^a	0	0	2	2	1
Slope ^a	0	0	2	1	1
Stark	1	25	8	3	17
South Dakota					
Harding	0	0	4	2	4
Perkins	0	0	5	3	6
Wyoming					
Sheridan	1	88	7	2	19

Source: AHD 2024c, 2024d; Montana Rural Healthcare Performance Improvement Network 2025; UND Center for Rural Health 2025; Montana State Volunteer Firefighters Association 2022; USA Fire Departments 2024; North Dakota GIS 2025; North Dakota Fire Marshall 2023; Montana Office of Public Instruction 2025a, 2025b, 2025c; North Dakota Department of Public Instruction 2024

Notes:

^a County the Project crosses

Table 3.10-8
Taxes and Revenue Sources for Counties Containing Project Facilities

State/County (Tax Year)	Property Tax (\$)	Other Tax (\$)	Unrestricted Federal or State Shared Revenues (\$)	Other (\$)	Total General Revenues (\$)
Montana					
Rosebud (2021)	6,001,130	354,429	4,004,802	198,297	10,558,658
Custer (2021)	5,212,270	445,941	1,477,489	18,129	7,153,829
Fallon (2021)	8,038,902	192,814	2,217,993	603,852	11,053,561
North Dakota					
Golden Valley ^a (2021)	648,463	506,211	2,517,338	400,981	4,072,993
Slope ^a (2022)	894,909	346,615	238,455	597,721	2,077,700
Hettinger (2023)	1,936,845	NA ^b	2,568,491	839,564	5,344,900
Grant (2017)	2,078,812	NA ^b	1,659,024	311,307	4,049,143
Morton (2023)	11,822,576	NA ^b	11,942,326	4,444,462	28,209,364
Oliver (2022)	1,264,658	NA	433,098	597,555	2,295,311

Source: North Dakota Office of the State Auditor 2025; Montana Department of Administration 2021

NA = not applicable

Notes:

^a For Golden Valley and Slope counties, “other” taxes are identified as oil and gas production taxes.

^b Auditor’s reports for these counties did not report an “other” tax.

Table 3.10-9
Economic Impacts of Proposed Alternative Construction

Category of Economic Impact	Units	Construction Year 1	Construction Year 2	Construction Year 3
Total employment	Jobs	1,981	2,074	2,112
Personal income	\$ Millions	133.2	143.6	156.5
Disposable personal income ^a	\$ Millions	116.3	125.7	137.4
Economic output ^b	\$ Millions	330.2	346.6	354.2

Source: Bureau of Business and Economics Research, University of Montana 2025

Notes:

^a After-tax income available for spending

^b Gross receipts to business and non-business organizations resulting from Proposed Alternative construction activities

B.3.2.10. Soils

**Table 3.11-1
Summary of Soil Impacts within the Project Area (acres)**

Soil Characteristic	Montana		North Dakota		Total ^a	
	Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Prime farmland	63.6	7.3	67.0	10.5	130.7	17.7
Farmland of statewide importance	370.2	63.2	1,122.2	36.5	1,492.4	99.6
Hydric soils	2.1	2.9	21.9	0.1	23.9	3.0
Compaction-prone soils	2.8	3.1	11.5	<0.1	14.3	3.1
Highly water erodible soils	758.0	141.7	469.8	13.2	1,227.9	154.9
Highly wind erodible soils	2.4	<0.1	168.3	1.7	170.7	1.7
Soils with low revegetation potential	1,325.7	217.6	988.3	23.1	2,314.0	240.8
Rocky soils	166.0	11.1	18.5	<0.1	184.5	11.2
Shallow bedrock soils	1,132.9	184.0	1,511.7	33.1	2,644.7	217.1
Total acres ^b	1,849.3	348.0	2,496.3	77.4	4,345.6	425.3

Source: Grid United 2026

Notes:

^a Totals may not add up due to rounding.

^b This table accounts for overlapping Project impact areas and, where this occurs, does not double-count impact acreages to provide an accurate summary of total Proposed Alternative impacts.

B.3.2.11. Noise

**Table 3.12-1
Nearest Noise-Sensitive Areas to Converter Stations and Appurtenant Facilities**

NSA	NSA Type	Project Component	Distance and Direction from Proposed Facility
1	Residence	Morton County Converter Station	4,170 feet east-southeast
2	Residence	Rosebud County Converter Station	10,430 feet west

NSA = noise-sensitive area

Table 3.12-2
Typical Construction Equipment Noise Levels

Equipment ^a	Maximum Noise Level (dBA)			
	50 feet	500 feet	1,000 feet	2,000 feet
Air compressor	78	58	51	45
ATV/UTV	75	55	48	42
Augers	84	64	57	51
Backhoe	78	58	51	45
Blasting	94	74	67	61
Bucket truck	75	55	48	42
Bulldozer	82	62	55	49
Concrete mixer truck	79	59	52	46
Crane	81	61	54	48
Dump truck	76	56	49	43
Excavator	81	61	54	48
Front-end loaders	79	59	52	46
Fuel truck	74	54	47	41
Generator	81	61	54	48
Grader	85	65	58	52
Pickup truck	55	35	28	22
Semitruck/trailer	74	54	47	41
Skid steer	79	59	52	46
Splicing van	55	35	28	22
Tractor	84	64	57	51
Water truck	85	65	58	52
Welder trucks	74	54	47	41

Source: Rehman et al. 2006; Grid United 2026

ATV = all-terrain vehicle; dBA = A-weighted decibel; UTV = utility terrain vehicle

Notes:

^a Some of the above equipment noise levels were estimated based on similar equipment.

**Table 3.12-3
Maximum Helicopter Noise Levels**

Equipment	Maximum Noise Level (dBA)			
	100 feet	500 feet	1,000 feet	2,000 feet
Light/medium helicopter at takeoff	84	70	62	56
Sikorsky S61	100	88	80	74
Sikorsky Skycrane S64	102	90	82	76

Source: TRC 2015

dBA = A-weighted decibel

**Table 3.12-4
Maximum Expected L50 Corona Sound Levels**

150 feet (Reference Distance)	500 feet	1,000 feet	2,000 feet
40.3 dBA	35.3 dBA	32.3 dBA	29.3 dBA

Source: Grid United 2026

dBA = A-weighted decibel; L50 = noise level exceeded 50 percent of the time (commonly used to describe corona noise)

**Table 3.12-5
Maximum Construction Equipment Noise Levels**

Equipment	Morton County Converter Station Nearest NSA (dBA)	Rosebud County Converter Station Nearest NSA (dBA)
Auger	64	52
Backhoe	45	33
Compactor plate	37	25
Compactor roller	45	34
Compressor	29	18
Concrete mixer truck	44	32
Crane	38	27
Dozer	48	36
Dump truck	54	42
Excavator	49	38
Front-end loader	43	31
Generator	31	19
Grader	41	29
Man lift	36	24
Scraper	56	45
Skid steer	51	39
Water truck	34	22
Welding machine	34	21

dBA = A-weighted decibel; NSA = noise-sensitive area

Table 3.12-6
Modeled Sound Power Levels of Converter Station Equipment

Source	Quantity	Sound Power Level (dBA)
Transformer	6	114
Transformer cooling fans	6	100
Valve cooling system	2	106
Chiller heating, ventilation, and air conditioning	6	98
Converter phase reactor	12	97
AC filter capacitor	6	93
AC filter reactor	6	90
Smoothing reactor	4	92
DC pole capacitor	4	90
Climate system ventilation	4	90

AC = alternating current; dBA = A-weighted decibel; DC = direct current

Table 3.12-7
Morton County Converter Station Noise Modeling Results

Nearest NSA / Distance From Converter Station	Estimated Ambient Noise	Converter Station Operational Noise	Future Noise Level (Existing Plus Converter Station)	USEPA Guideline	Potential Increase
1 / 4,170 feet	45 dBA L _{dn}	49 dBA L _{dn}	50 dBA L _{dn}	55 dBA L _{dn}	5 dBA L _{dn}

dBA = A-weighted decibel; L_{dn} = day-night sound level; NSA = noise-sensitive area; USEPA = U.S. Environmental Protection Agency

Table 3.12-8
Rosebud County Converter Station Noise Modeling Results

NSA / Distance From Converter Station	Estimated Ambient Noise	Converter Station Operational Noise	Future Noise Level (Existing Plus Converter Station)	USEPA Guideline	Potential Increase
1 / 10,430	47 dBA L _{dn}	37 dBA L _{dn}	47 dBA L _{dn}	55 dBA L _{dn}	0 dBA L _{dn}

dBA = A-weighted decibel; L_{dn} = day-night sound level; NSA = noise-sensitive area; USEPA = U.S. Environmental Protection Agency

B.3.2.12. Vegetation

Table 3.13-1
Special Status Plant Species with Potential to Occur within the Project Area

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Alyssum-leaved phlox (<i>Phlox alyssifolia</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Occurs in sandy or gravelly soil. Also reported on clay banks and limestone ridges of open prairie.	Yes	NA	No
Barr's milkvetch (<i>Astragalus barrii</i>)	SOC	NA	NA	Occurs in sparsely vegetated knobs, buttes, and hilltops, usually with dry, fine-textured, calciferous soils. If upper overstory is present, it usually consists of ponderosa pine (<i>Pinus ponderosa</i>) and Rocky Mountain juniper (<i>Juniperus scopulorum</i>).	Yes	Yes	NA
Blue lips (<i>Collinsia parviflora</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Sparsely vegetated soils of forest openings, grasslands, meadows, and rock outcrops from valley to subalpine.	Yes	NA	No
Bractless blazingstar (<i>Mentzelia nuda</i>)	SOC	NA	NA	Sandy or gravelly soil of open hills and roadsides on the plains.	Yes	Yes	NA
Bush morning-glory (<i>Ipomoea leptophylla</i>)	SOC	NA	NA	Found in open mixed-grass prairies in sandy or gravelly soils, waste ground, roadsides, and streambanks.	Yes	No	NA

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Chaffweed (<i>Centunculus minimus</i>)	SOC	NA	NA	Occurs in vernal wet, sparsely vegetated soil along rivers and around ponds.	Yes	No	NA
Double bladderpod (<i>Physaria brassicoides</i>)	SOC	NA	NA	Sparsely vegetated, steep, eroding, south-facing slopes of highly desecrated badlands and breaklands. Associated with Indian ricegrasses (<i>Oryzopsis hymenoides</i>), skunkbush (<i>Rhus trilobata</i>), and yucca (<i>Yucca spp.</i>).	Yes	No	NA
Dwarf mentzelia (<i>Mentzelia pumila</i>)	SOC	SCP: Level I	USDA Forest Service RFSS	Shrub steppe and juniper woodlands in foothills and valleys with sandy and clayey soils.	Yes	No	No
Foxtail sedge (<i>Carex alopecoidea</i>)	NA	SCP: Level II	NA	Primary habitat is riparian wetlands and perennial flowing water. Found in a riparian wetland dominated by scattered individuals of Bebb's willow (<i>Salix bebbiana</i>), beaked hazelnut (<i>Corylus cornuta</i>), fireberry hawthorn (<i>Crataegus chrysocarpa</i>), and paper birch (<i>Betula papyrifera</i>).	Yes	NA	No
Heart-leaved buttercup (<i>Ranunculus cardiophyllus</i>)	SOC	SCP: Level III	NA	Moist grasslands and meadows. Associated with wetlands in the foothill zone.	Yes	No	No

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Heavy sedge (<i>Carex gravida</i>)	SOC	NA	NA	Moist woodlands and prairies, such as ravines and wooded draws. Associated with green ash (<i>Fraxinus pennsylvanica</i>), serviceberry (<i>Amelanchier</i> spp.), quaking aspen (<i>Populus tremuloides</i>), and chokecherry (<i>Prunus virginiana</i>).	Yes	Yes	NA
Hooker's Townsend-daisy (<i>Townsendia hookeri</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Mixed-grass and shortgrass prairies, plains, hillsides, gravelly benches, and weathered scoria, often with clay matrix subsoil.	Yes	NA	Yes
Lanceleaf cottonwood (<i>Populus x acuminata</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Plains and mesic woody draws, often with seeps and springs. Occasionally near springs on open hillsides.	Yes	NA	No
Large-flowered beardtongue (<i>Penstemon grandiflorus</i>)	SOC	NA	NA	Valleys on the plains in well-draining sandy or loamy soils.	Yes	No	NA
Lead plant (<i>Amorpha canescens</i>)	SOC	NA	NA	Mixed-grass and tallgrass prairies, woodlands, and along stream banks. Typically, in sandy, gravelly, or rocky soils. Associated with bluestem species (<i>Andropogon</i> spp.).	Yes	Yes	NA
Limber pine (<i>Pinus flexilis</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Semi-arid exposed rocky ridges, cliff-tops, and high mountains.	No	NA	No

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Mat buckwheat (<i>Eriogonum caespitosum</i>)	SOC	NA	NA	Dry, stony limestone sagebrush steppes (<i>Artemisia</i> spp.).	Yes	No	NA
Mountain meadow cinquefoil (<i>Potentilla diversifolia</i>)	NA	SCP: Level III	NA	Mixed-grass and shortgrass prairies, turf, fellfields; subalpine and alpine.	Yes	NA	No
Narrowleaf milkweed (<i>Asclepias stenophylla</i>)	SOC	NA	NA	Open pine woodlands and sandy soils of prairies. Associated with needle-and-thread (<i>Stipa comata</i>), ponderosa pine, prairie spiderwort (<i>Tradescantia occidentalis</i>), and threadleaf sedge (<i>Carex filifolia</i>).	Yes	No	NA
Narrowleaf penstemon (<i>Penstemon angustifolius</i>)	SOC	NA	NA	Prairie grasslands on hills and slopes with sandy soil and sparse vegetation. Associated with blue grama (<i>Bouteloua gracilis</i>), needle-and-thread, and prairie spiderwort.	Yes	No	NA
Nine-anther prairie clover (<i>Dalea enneandra</i>)	SOC	SCP: Level III	NA	Plain slopes and gravelly-soiled grasslands. Associated with big sagebrush (<i>Artemisia tridentata</i>), narrowleaf yucca (<i>Yucca angustissima</i>), and needle-and-thread.	Yes	No	No
Nodding buckwheat (<i>Eriogonum cernuum</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Streambanks, sandhills, sandstone outcrops, and grasslands with sandy soil.	Yes	NA	No

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Nuttall's desert-parsley (<i>Lomatium nuttallii</i>)	SOC	NA	BLM SSS	Grows on open, rocky mid- and lower-slopes on sandstone, clayey shale, or siltstone and in open pine woodlands. Vegetation is sparse. Associated with big sagebrush (<i>Artemisia tridentata</i>), ponderosa pine (<i>Pinus ponderosa</i>), and Rocky Mountain juniper (<i>Juniperus scopulorum</i>).	Yes	No	NA
Ovalleaf milkweed (<i>Asclepias ovalifolia</i>)	SOC	NA	NA	Dry upland prairies, oak savannas, and pine barrens with gravelly, sandy, or clayey soils.	Yes	No	NA
Painted milkvetch (<i>Astragalus ceramicus apus</i>)	SOC	NA	NA	Sandy, well-drained blowout areas and sandy flats or sand dunes. Associated with early successional sandhill habitat. Common vegetation cover consists of silverleaf scorpionweed (<i>Phacelia hastata</i>), threetip sagebrush (<i>Artemisia tripartita</i>), and thickspike wheatgrass (<i>Elymus lanceolatus</i>).	Yes	No	NA
Persistent-sepal yellow-cress (<i>Rorippa calycina</i>)	SOC	NA	NA	Moist sandy to muddy banks of streams, stock ponds, and human-made reservoirs that are sparsely vegetated with early successional or weedy forbs, bunchgrasses, and scattered shrubs.	Yes	No	NA
Pottery milkvetch (<i>Astragalus ceramicus</i>)	SOC	NA	NA	Sand or sandy soils in desert shrub, grassland, riparian, montane, and pinyon-juniper communities.	Yes	No	NA

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Prairie fameflower (<i>Talinum parviflorum</i>)	NA	SCP: Level II	NA	Dry grassland, scrub, chaparral, woodland, canyon washes, mountain slopes and ledges. Usually found in rocky soil but can occur in sandy soil.	Yes	NA	No
Prairie violet (<i>Viola pedatifolia</i>)	SOC	NA	NA	Prairies, grasslands, disturbed ground, and gravelly hills, with well-draining, calcareous soils.	Yes	No	NA
Raceme milkvetch (<i>Astragalus racemosus</i>)	SOC	NA	NA	Grows in grasslands and is highly dependent on clay or chalky, alkaline soils rich in selenium.	Yes	Yes	NA
Sand cherry (<i>Prunus pumila</i>)	SOC	NA	NA	Open grasslands with sparse vegetation and sandy or rocky soil.	Yes	No	NA
Sand lily (<i>Leucocrinum montanum</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Shortgrass prairies, sagebrush deserts, sandy flats, scrub flats, and coniferous woodlands.	Yes	NA	No
Scweinitz's flatsedge (<i>Cyperus schweinitzii</i>)	SOC	NA	NA	Prairie grasslands on ridges and slopes, often on sandy blowouts or near sandstone outcrops. Sparse vegetation and sandy soil.	Yes	No	NA
Scribner's ragwort (<i>Senecio integrimus scribneri</i>)	SOC	NA	NA	Mixed-grass prairies, sagebrush, mountain brush, aspen, fir, and ponderosa communities.	Yes	No	NA

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Silky Townsend-daisy (<i>Townsendia exscapa</i>)	NA	NA	USDA Forest Service RFSS	Sandy soils in grasslands, openings in pine forests, sagebrush steppe, and gravelly hills.	Yes	NA	No
Silver bladderpod (<i>Physaria ludoviciana</i>)	SOC	NA	NA	Dry prairies with sandy soil derived from limestone.	Yes	No	NA
Slender-branched popcorn-flower (<i>Plagiobothrys leptocladius</i>)	SOC	NA	NA	Plains and foothill zone in the drying mud on the shores of ponds.	Yes	No	NA
Slim-pod Venus' looking-glass (<i>Triodanis leptocarpa</i>)	SOC	NA	NA	Plains, grasslands, sagebrush-dominated grasslands, and grass-dominated rocky slopes.	Yes	No	NA
Smooth goosefoot (<i>Chenopodium subglarum</i>)	SOC	SCP: Level II	USDA Forest Service RFSS	Primarily inhabits sand dunes but can occur at river sandbars or sandy terraces. Soil is nutrient poor, extremely loose, and sandy.	Yes	NA	No
Stickseed (<i>Lappula cencrurhoides</i>)	NA	SCP: Level II	NA	Dry soils in open areas, such as mixed-grass and shortgrass prairies, badlands, streams, rivers, and riparian.	Yes	NA	No
Tall dropseed (<i>Sporobolus compositus</i>)	SOC	NA	NA	Mixed-grass and tallgrass prairies, savanna communities, disturbed areas, and open forests.	Yes	No	NA

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Thin-fruited knotweed (<i>Polygonum leptocarpum</i>)	NA	SCP: Level I	NA	Western mixed-grass and shortgrass prairies, streams, rivers, and riparian areas.	Yes	NA	No
Torrey's cryptantha (<i>Cryptantha torreyana</i>)	NA	SCP: Level II	USDA Forest Service RFSS	Sparsely vegetated soils, talus, sagebrush steppe, or partial shade near base of trees and, less commonly, scoria ridgelines. Also reported on dry plains, rock outcrops, escarpments, and pine slopes.	Yes	NA	No
Variegated scouring rush (<i>Equisetum variegatum</i>)	NA	NA	USDA Forest Service RFSS	Around lakes, seeps, and streams with wet, often calcareous, gravelly soil.	Yes	NA	No
Visher's buckwheat (<i>Eriogonum visherii</i>)	SOC	SCP: Level I	BLM SSS; USDA Forest Service RFSS	Rolling plains and hillocks with barren to semi-barren loamy, clay, or sandy clay derived from shale in dry steppe communities.	Yes	No	No
Wood lily (<i>Lilium philadelphicum</i>)	SOC	NA	NA	Moist, tall- and midgrass prairies, fens, woodlands, valleys, and calcareous meadows.	Yes	No	NA
Woolly milkweed (<i>Asclepias lanuginosa</i>)	NA	SCP: Level I	NA	Prairies with sandy to rock soils, gravelly hillsides prairies, and dry uplands woods.	Yes	NA	No

Species	Montana Status	North Dakota Status ^a	Other Special Status ^b	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana	Documented to Occur in the Project Area: North Dakota
Woolly twinpod (<i>Physaria didymocarpa lanata</i>)	SOC	NA	NA	Grassland or shrublands slopes with sandy, often calcareous soil.	Yes	No	NA

Source: Grid United 2024, 2026b

BLM = Bureau of Land Management; NA = not applicable; SCP = Species of Conservation Priority; SOC = Species of Concern; SSS = Special Status Species; RFSS = Regional Forester's Sensitive Species; USDA = U.S. Department of Agriculture

Notes:

^a SCP Level definitions:

- **Level I** species are in decline in North Dakota or across their range or have a high rate of occurrence in North Dakota constituting the core of the species breeding range but are at-risk range wide.
- **Level II** species have a moderate level of conservation priority or a high level of conservation priority but a substantial level of non-State Wildlife Grant funding available to them.
- **Level III** species have a moderate level of conservation priority but are believed to be peripheral or non-breeding in North Dakota.

^b The BLM SSS lists provided to Montana/Dakotas Leadership in Instruction Memorandum No. MT-2020-012 (March 16, 2020) included an expiration date of September 30, 2023. As there is no updated list at this time, the 2020 list has been used. (Grid United 2026c)

Table 3.13-2
Noxious Weeds Documented and/or Enforced in the Project Area

Species	Documented to Occur in Counties Crossed by the Project Area: Montana	Documented to Occur in Counties Crossed by the Project Area: North Dakota	State Priority: Montana ^a	Enforcement Area: Montana	Enforcement Area: North Dakota
Absinth wormwood (<i>Artemisia absinthicum</i>)	No	Slope, Hettinger, Grant, Morton, Oliver	NA	NA	All counties
Baby's breath (<i>Gypsophila paniculata</i>)	No	No	NA	NA	Grant
Black henbane (<i>Hyoscyamus niger</i>)	No	No	None	Rosebud	Golden Valley, Slope, Grant
Blueweed (<i>Echium vulgare</i>)	No	No	Priority 1B	All counties	NA
Brazilian waterweed (<i>Egeria densa</i>)	No	No	Priority 3	All counties	NA
Canada thistle (<i>Cirsium arvense</i>)	Rosebud, Custer, Fallon	Golden Valley, Slope Hettinger, Grant, Morton, Oliver	Priority 2B	All counties	All counties
Cheatgrass (<i>Bromus tectorum</i>) ^{b, c}	Rosebud, Custer, Fallon	No	Priority 3	All counties	NA
Cicer milkvetch (<i>Astragalus cicer</i>) ^c	No	Hettinger	NA	NA	NA
Common buckthorn (<i>Rhamnus cathartica</i>)	No	No	Priority 2A	All counties	NA
Common burdock (<i>Arctium minus</i>)	No	No	NA	Fallon	Golden Valley, Grant
Common mullein (<i>Verbascum thapsus</i>)	No	No	NA	NA	Golden Valley
Common reed (<i>Phragmites australis</i> ssp. <i>australis</i>)	No	No	Priority 1A	All counties	NA
Common tansy (<i>Tanacetum vulgare</i>)	No	No	Priority 2B	All counties	NA
Crested wheatgrass (<i>Agropyron cristatum</i>) ^c	No	Golden Valley, Slope	NA	NA	NA
Curly leaf pondweed (<i>Potamogeton crispus</i>)	No	No	Priority 2B	All counties	NA
Dalmatian toadflax (<i>Linaria dakmatica</i>)	No	No	Priority 2B	All counties	All counties
Diffuse knapweed (<i>Centaurea diffusa</i>)	No	No	Priority 2B	All counties	All counties
Dyer's woad (<i>Isatis tinctoria</i>)	No	No	Priority 1A	All counties	NA

Species	Documented to Occur in Counties Crossed by the Project Area: Montana	Documented to Occur in Counties Crossed by the Project Area: North Dakota	State Priority: Montana ^a	Enforcement Area: Montana	Enforcement Area: North Dakota
Eurasian watermilfoil (<i>Myriophyllum spicatum</i> , <i>M. spicatum</i> x <i>M. sibiricum</i>)	No	No	Priority 2A	All counties	NA
Field bindweed (<i>Convolvulus arvensis</i>)	Rosebud, Custer, Fallon	Golden Valley, Slope, Hettinger, Grant, Morton	Priority 2B	All counties	NA
Field brome (<i>Bromus arvensis</i>) ^c	No	Golden Valley, Slope	NA	NA	NA
Flowering rush (<i>Butomus umbellatus</i>)	No	No	Priority 2A	All counties	NA
Halogeton (<i>Halogeton glomeratus</i>)	No	No	NA	NA	Grant
Hoary alyssum (<i>Berteroa incana</i>)	No	No	Priority 2B	All counties	NA
Hoary cress (<i>Lepidium draba</i>)	No	No	NA	NA	Golden Valley
Houndstongue (<i>Cynolossus officinale</i>)	No	Slope, Oliver	Priority 2B	All counties	All counties
Hydrilla (<i>Hydrilla verticillate</i>)	No	No	Priority 3	All counties	NA
Intermediate wheatgrass (<i>Thinopyrum intermedium</i>) ^c	No	Golden Valley	NA	NA	NA
Kentucky bluegrass (<i>Poa pratensis</i>) ^c	No	Golden Valley, Slope	NA	NA	NA
Knotweed complex (<i>Polygonum cuspidatum</i> , <i>P. sachalinense</i> , <i>P. x bohemicum</i> , <i>Fallopia japonica</i> , <i>F. sachalinensis</i> , <i>F. x bohemia</i> , <i>Reynoutria japonica</i> , <i>R. sachalinensis</i> , <i>R. x bohemia</i>)	No	No	Priority 1B	All counties	NA
Kochia (<i>Bassia scoparia</i>)	No	No	None	Rosebud	NA
Leafy spurge (<i>Euphorbia esula</i>)	Custer, Fallon	Slope, Hettinger, Grant, Morton, Oliver	Priority 2B	All counties	All counties
Meadow hawkweed (<i>Hieracium caespitosum</i> , <i>H. praealtum</i> , <i>H. floridundum</i> , <i>Pilosella caespitosa</i>)	No	No	Priority 2A	All counties	NA
Medusahead (<i>Taeniatherum caput-medusae</i>)	No	No	Priority 1A	All counties	NA

Species	Documented to Occur in Counties Crossed by the Project Area: Montana	Documented to Occur in Counties Crossed by the Project Area: North Dakota	State Priority: Montana ^a	Enforcement Area: Montana	Enforcement Area: North Dakota
Musk thistle (<i>Carduus nutans</i>)	Rosebud	Morton	NA	NA	All counties
Orange hawkweed (<i>Hieracium auranticum</i> , <i>Pilosella aurantica</i>)	No	No	Priority 2A	All counties	NA
Oxeye daisy (<i>Leucanthemum vulgare</i>)	No	No	Priority 2B	All counties	NA
Palmer amaranth (<i>Amaranthus palmeri</i>)	No	No	NA	NA	All counties
Parrot feather watermilfoil (<i>Myriophyllum aquaticum</i> , <i>M. brasiliense</i>)	No	No	Priority 3	All counties	NA
Perennial pepperweed (<i>Lepidium latifolium</i>)	No	No	Priority 2A	All counties	NA
Poison hemlock (<i>Conium maculatum</i>)	No	No	None	Fallon, Rosebud	NA
Puncture vine (<i>Tribulus terrestris</i>)	No	No	None	Rosebud	NA
Purple loosestrife (<i>Lythrum salicaria</i>)	No	No	Priority 1B	All counties	All counties
Rush skeletonweed (<i>Chondrilla juncea</i>)	No	No	Priority 1B	All counties	NA
Russian knapweed (<i>Acroptilon repens</i> , <i>Rhaponticum repens</i>)	No	No	Priority 2B	All counties	All counties
Russian olive (<i>Elaeagnus angustifolia</i>)	No	No	Priority 3	All counties	NA
Saltcedar (<i>Tamarix</i> spp.)	Rosebud, Custer	No	Priority 2B	All counties	All counties
Scotch broom (<i>Cytisus scoparius</i>)	No	No	Priority 1B	All counties	NA
Scotch thistle (<i>Onopordum acanthium</i>)	No	No	None	Rosebud	NA
Smooth brome (<i>Bromus inermis</i>) ^c	No	Golden Valley	NA	NA	NA
Spotted knapweed (<i>Centaurea maculosa</i>)	Fallon	No	Priority 2B	All counties	All counties
St. Johnswort (<i>Hypericum perforatum</i>)	No	No	Priority 2B	All counties	NA
Sulfur cinquefoil (<i>Potentilla recta</i>)	No	No	Priority 2B	All counties	NA
Tall buttercup (<i>Ranunculus acris</i>)	Custer	No	Priority 2A	All counties	NA
Tansy ragwort (<i>Jacobaea vulgaris</i>)	Fallon	No	Priority 2A	All counties	NA
Ventenata grass (<i>Ventenata dubia</i>) ^d	No	No	Priority 2A	All counties	Slope, NFS lands
Whitetop (<i>Cardaria draba</i> , <i>Lepidium draba</i>)	No	No	Priority 2B	All counties	NA
Yellow starthistle (<i>Centaurea solstitialis</i>)	No	No	Priority 1A	All counties	NA

Species	Documented to Occur in Counties Crossed by the Project Area: Montana	Documented to Occur in Counties Crossed by the Project Area: North Dakota	State Priority: Montana ^a	Enforcement Area: Montana	Enforcement Area: North Dakota
Yellow toadflax (<i>Linaria vulgaris</i>)	No	No	Priority 2B	All counties	All counties
Yellowflag iris (<i>Iris pseudacorus</i>)	No	No	Priority 2A	All counties	NA

Source: Grid United 2025a, 2026b

LMNG = Little Missouri National Grassland; NA = not applicable; NFS = National Forest System; USDA = U.S. Department of Agriculture; USFWS = U.S. Fish and Wildlife Service

Notes:

^a Priority definitions:

- **Priority 1A** species have a very limited presence in Montana. Management criteria will require eradication if detected, education, and prevention.
- **Priority 1B** species have limited presence in Montana. Management criteria will require eradication or containment and education.
- **Priority 2A** species are common in isolated areas of Montana. Management is prioritized by the County Weed Boards and includes eradication (if detected), education, and prevention.
- **Priority 2B** species are abundant in Montana and widespread in many counties. Management is prioritized by the County Weed Boards and includes eradication or containment of these species.
- **Priority 3** species are not designated as noxious weeds but are recognized as species with the potential to cause significant negative impacts and may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education, and prevention of these species but does not require control unless required by individual counties.

^b Not considered a noxious weed in Montana but is considered a statewide regulated plant with potential to have significant negative impacts.

^c Non-native or invasive plant species recognized by the USDA Forest Service in the LMNG but not considered a statewide noxious weed in Montana or North Dakota.

^d Ventenata grass was included at the request of Slope County. USDA Forest Service also requested monitoring and management of this species within Project area in the LMNG.

Table 3.13-3
Vegetative Land Covers within the Project Area ^{a,b,c}

Transmission Line or Facility / State / County	Herbaceous Grassland ^d		Shrubland ^d		Forest and Woodland ^e		Agriculture ^d		Other (Non-Vegetated or Developed Areas) ^d		Total	
	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)
ROSEBUD TRANSMISSION LINE												
Montana												
Rosebud	49.3	0.1	51.7	0.9	8.5	20.7	0.0	0.0	19.8	<0.1	129.3	21.6
HVDC TRANSMISSION LINE												
Montana												
Rosebud	391.4	46.3	409.0	48.6	22.4	169.5	12.0	3.1	21.4	0.4	856.2	267.9
Custer	1,279.7	121.9	470.6	46.8	14.2	166.8	169.7	2.1	12.6	2.2	1,946.8	339.8
Fallon	850.8	8.8	139.1	1.3	4.1	51.5	417.7	0.9	47.5	0.5	1,459.2	63.1
<i>Subtotal</i>	<i>2,522.0</i>	<i>177.0</i>	<i>1,018.6</i>	<i>96.7</i>	<i>40.7</i>	<i>387.9</i>	<i>599.3</i>	<i>6.1</i>	<i>81.4</i>	<i>3.1</i>	<i>4,262.2</i>	<i>670.8</i>
North Dakota												
Golden Valley	245.7	6.8	67.7	2.1	0.0	1.5	20.0	<0.1	2.9	1.9	336.3	12.3
Slope	863.1	2.1	210.8	1.0	0.2	4.4	397.4	0.3	60.1	0.3	1,531.6	8.1
Hettinger	338.0	0.2	4.0	<0.1	0.0	1.0	995.9	1.0	37.7	0.6	1,375.6	2.8
Grant	714.2	2.4	4.5	0.0	0.0	3.2	341.4	0.6	13.9	1.2	1,073.9	7.4
Morton	137.2	0.1	1.3	0.0	0.0	0.2	32.0	<0.1	1.6	0.0	172.0	0.3
<i>Subtotal</i>	<i>2,298.2</i>	<i>11.7</i>	<i>288.2</i>	<i>3.1</i>	<i>0.2</i>	<i>10.3</i>	<i>1,786.6</i>	<i>1.9</i>	<i>116.2</i>	<i>4.0</i>	<i>4,489.4</i>	<i>30.9</i>

Transmission Line or Facility / State / County	Herbaceous Grassland ^d		Shrubland ^d		Forest and Woodland ^e		Agriculture ^d		Other (Non-Vegetated or Developed Areas) ^d		Total	
	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)	Temp. (acres)	Perm. (acres)
OLIVER/MORTON TRANSMISSION LINE ^f												
North Dakota												
Morton	22.1	0.1	0.0	0.0	0.0	0.0	8.4	0.0	0.3	<0.1	30.8	0.2
OLIVER TRANSMISSION LINE												
North Dakota												
Morton	771.6	4.1	3.1	<0.1	0.2	9.9	293.1	0.2	25.3	3.6	1,093.3	17.8
Oliver	287.4	1.9	1.6	0.0	0.1	0.5	9.5	<0.1	4.6	0.1	303.3	2.5
<i>Subtotal</i>	<i>1,059.1</i>	<i>6.0</i>	<i>4.7</i>	<i><0.1</i>	<i>0.3</i>	<i>10.4</i>	<i>302.6</i>	<i>0.3</i>	<i>29.9</i>	<i>3.5</i>	<i>1,396.6</i>	<i>20.3</i>
MORTON TRANSMISSION LINE												
North Dakota												
Morton	351.8	8.2	3.1	0.0	0.0	2.9	177.2	5.7	7.9	3.7	540.1	20.5
FACILITIES												
Montana												
Rosebud	0.2	2.3	18.2	29.5	0.5	1.5	0.0	0.0	0.1	5.5	19.0	38.8
North Dakota												
Morton	6.7	0.0	0.0	0.0	0.0	0.0	123.0	29.4	1.0	0.1	130.7	29.4
<i>Montana Subtotal</i>	<i>2,571.5</i>	<i>179.3</i>	<i>1,088.5</i>	<i>127.1</i>	<i>49.8</i>	<i>410.0</i>	<i>599.3</i>	<i>6.1</i>	<i>101.3</i>	<i>8.6</i>	<i>4,410.4</i>	<i>731.2</i>
<i>North Dakota Subtotal</i>	<i>3,737.8</i>	<i>26.0</i>	<i>296.0</i>	<i>3.1</i>	<i>0.5</i>	<i>23.6</i>	<i>2,397.9</i>	<i>37.2</i>	<i>155.3</i>	<i>11.5</i>	<i>6,587.5</i>	<i>101.4</i>
Total	6,309.3	205.3	1,384.5	130.2	50.2	433.7	2,997.3	43.3	256.6	20.0	10,997.9	832.6

Source: Grid United 2025b, 2026b

CMRP = Construction, Mitigation, and Reclamation Plan; HVDC = high-voltage direct current; MLCF = Montana Land Cover Framework; NLCD = National Land Cover Database; Perm. = permanent; ROW = right-of-way; Temp. = temporary

Notes:

^a Totals may not add up due to rounding.

^b Temporary and permanent impact areas and ROW acreages were calculated using the MLCF in Montana and the NLCD in North Dakota (Grid United 2025b).

^c Existing access roads with no planned improvements for Project use outside of the ROW and existing portions of the Colstrip Substation have been omitted from the provided acreages.

^d ROW acreages in non-forested vegetation types are considered temporary impacts.

^e Forests within the ROW would be cleared and permanently converted to non-forested land cover, which would be maintained during Project operations, as discussed in Section 8.0 of the CMRP (Appendix E). Thus, forest impacts within the ROW (including within temporary impact areas in the ROW) are considered permanent impacts in this table.

^f Represents the area where the Oliver Transmission Line and Morton Transmission Line run parallel to one another. In these areas, structure pads, overland travel, and turnaround areas are shared. Permanent structure footprints are attributed to only the applicable transmission line.

B.3.2.13. Fisheries and Wildlife

**Table 3.14-1
Representative Fish Species Found in Waterbodies Crossed by the Project Area**

Species		Federal Status ^a	State Status		Potential to Occur ^{c,d}		Typical
Common Name	Scientific Name		Montana (SOC)	North Dakota (SGCN) ^b	Montana	North Dakota	Classification
Catfish							
Bullhead catfish	<i>Ameiurus</i> spp.	NA	NA	NA	Yes	Yes	Warmwater
Channel catfish ^{f,g}	<i>Ictalurus punctatus</i>	NA	NA	NA	Yes	Yes	Warmwater
Cod							
Burbot ^{f,g}	<i>Lota lota</i>	NA	NA	SGCN	Yes	Yes	Coldwater
Drum							
Freshwater drum	<i>Aplodinotus grunniens</i>	NA	NA	NA	Yes	Yes	Warmwater
Gar							
Shortnose gar	<i>Lepisosteus platostomus</i>	NA	SOC	NA	No	Yes	Warmwater
Minnow							
Common carp	<i>Cyprinus carpio</i>	NA	NA	NA	Yes	Yes	Warmwater
Creek chub	<i>Semotilus atromaculatus</i>	NA	NA	NA	Yes	Yes	Warmwater
Fathead minnow	<i>Pimephales promelas</i>	NA	NA	NA	Yes	Yes	Warmwater
Flathead chub	<i>Platygobio gracilis</i>	NA	NA	SGCN	Yes	Yes	Warmwater
Lake chub	<i>Couesius plumbeus</i>	NA	NA	NA	Yes	Yes	Warmwater
Longnose dace	<i>Rhinichthys cataractae</i>	NA	NA	NA	Yes	Yes	Warmwater
Northern redbelly dace	<i>Chrosomus (Phoxinus) eos</i>	NA	SOC	SGCN	No	Yes	Coldwater

Species		Federal Status ^a	State Status		Potential to Occur ^{c,d}		Typical Classification ^e
Common Name	Scientific Name		Montana (SOC)	North Dakota (SGCN) ^b	Montana	North Dakota	
Northern redbelly dace x finescale dace hybrid	<i>Chrosomus (Phoxinus) eos x Chrosomus neogaeus</i>	NA	SOC	NA	No	Yes	Coldwater
Sicklefin chub	<i>Macrhybopsis meeki</i>	NA	SOC	SGCN	No	Yes	Warmwater
Sturgeon chub	<i>Macrhybopsis gelida</i>	BLM SSS	SOC	SGCN	Yes	No	Warmwater
Mooneye							
Goldeye	<i>Hiodon alosoides</i>	NA	NA	NA	Yes	Yes	Warmwater
Paddlefish							
Paddlefish ^{f,g}	<i>Polyodon spathula</i>	BLM SSS	NA	SGCN	Yes	Yes	Warmwater
Perch							
Iowa darter	<i>Etheostoma exile</i>	BLM SSS	SOC	NA	Yes	Yes	Warmwater
Sauger ^{f,g}	<i>Sander canadensis</i>	BLM SSS	SOC	NA	Yes	Yes	Warmwater
Walleye ^{f,g}	<i>Sander vitreus</i>	NA	NA	NA	Yes	Yes	Warmwater
Yellow perch ^{f,g}	<i>Perca flavescens</i>	NA	NA	NA	Yes	Yes	Warmwater
Pike							
Northern pike ^{f,g}	<i>Esox lucius</i>	NA	NA	NA	Yes	Yes	Warmwater
Stickleback							
Brook stickleback	<i>Culaea inconstans</i>	NA	NA	NA	Yes	Yes	Warmwater
Sturgeon							
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered; BLM SSS	SOC	SGCN	Yes	No	Warmwater
Shovelnose sturgeon ^f	<i>Scaphirhynchus platyrhynchus</i>	NA	NA	NA	Yes	Yes	Warmwater
Sucker							
Bigmouth buffalo	<i>Ictiobus cyprinellus</i>	NA	NA	NA	Yes	Yes	Warmwater

Species		Federal Status ^a	State Status		Potential to Occur ^{c,d}		Typical Classification ^e
Common Name	Scientific Name		Montana (SOC)	North Dakota (SGCN) ^b	Montana	North Dakota	
Blue sucker	<i>Cycleptus elongatus</i>	NA	SOC	SGCN	Yes	Yes	Warmwater
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>	NA	NA	NA	Yes	Yes	Warmwater
Sucker	<i>Catostomus</i> spp.	NA	NA	NA	Yes	Yes	Warmwater
Sunfish							
Crappie ^{f,g}	<i>Pomoxis</i> spp.	NA	NA	NA	Yes	Yes	Warmwater
Bluegill ^g	<i>Lepomis macrochirus</i>	NA	NA	NA	Yes	Yes	Warmwater
Largemouth bass ^{f,g}	<i>Micropterus salmoides</i>	NA	NA	NA	Yes	Yes	Warmwater
Smallmouth bass ^{e,f}	<i>Micropterus dolomieu</i>	NA	NA	NA	Yes	Yes	Warmwater
Trout							
Brown trout ^{f,g}	<i>Salmo trutta</i>	NA	NA	NA	Yes	No	Coldwater
Rainbow trout ^{f,g}	<i>Oncorhynchus mykiss</i>	NA	NA	NA	Yes	Yes	Coldwater

Source: Grid United 2024b, 2026d

BLM = Bureau of Land Management; EIS = Environmental Impact Statement; NA = not applicable; SCP = Species of Conservation Priority; SGCN = Species of Greatest Conservation Need; SOC = Species of Concern; SSS = Special Status Species; SWAP = State Wildlife Action Plan

Notes:

^a The BLM SSS lists provided to Montana/Dakotas Leadership in Instruction Memorandum No. MT-2020-012 (March 16, 2020) included an expiration date of September 30, 2023. As there is no updated list at this time, the 2020 list has been used (Grid United 2026d).

^b The Draft EIS used the 2015 North Dakota SWAP (Dyke 2015) to determine species of concern for North Dakota (i.e., SCP). The Final EIS has been updated to align with the 2025 North Dakota SWAP (NDGFD 2026), which updated designations to SGCN.

^c Based on species range

^d Other potentially occurring species not listed in this table include brook trout, mountain whitefish, pumpkinseed, chinook salmon, muskellunge, saugeye, lake sturgeon, lake trout, tiger trout, cutthroat trout, white bass, and zander (FWP 2023c; NDGFD 2024).

^e Classification based on preferred water temperature for the fish species.

^f Recreational species in Montana

^g Recreational species in North Dakota

Table 3.14-2
State Fisheries and Aquatic Resources of Concern with Potential to Occur in the Project Area

Species ^a	Federal Status	Montana Status	North Dakota Status ^b	Other Special Status ^c	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^d	Documented to Occur in the Project Area: North Dakota ^d
Fish								
Blue sucker (<i>Cycleptus elongatus</i>)	NA	SOC	SGCN	NA	Medium to large, deep, turbid rivers with swift currents and sand or gravel bottoms	Yes	Yes	No
Burbot (<i>Lota lota</i>)	NA	NA	SGCN	NA	Large rivers, cold, deep lakes, and reservoirs	Yes	Yes ^e	No
Flathead chub (<i>Platygobio gracilis</i>)	NA	NA	SGCN	NA	Main channels of small to large rivers with turbid waters and moderate to strong flow; bottoms are mud, sand, or rock	Yes	Yes ^e	No
Iowa darter (<i>Etheostoma exile</i>)	NA	SOC	NA	BLM SSS	Small to medium slow-flowing rivers and streams	Yes	Yes	No
Northern redbelly dace (<i>Chrosomus [Phoxinus] eos</i>)	NA	SOC	SGCN	NA	Coolwater, slow-flowing creeks, ponds, and lakes with aquatic vegetation	Yes	No	No
Northern redbelly dace x finescale dace hybrid (<i>Chrosomus [Phoxinus] eos</i> x <i>Chrosomus neogaeus</i>)	NA	SOC	NA	NA	Cool, quiet waters from bog, beaver ponds, and streams	Yes	No	No
Paddlefish (<i>Polyodon spathula</i>)	NA	NA	SGCN	BLM SSS	Large, slow-flowing rivers, or impoundments (possible in the Powder River)	Yes	Yes	No

Species ^a	Federal Status	Montana Status	North Dakota Status ^b	Other Special Status ^c	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^d	Documented to Occur in the Project Area: North Dakota ^d
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	LE	SOC	SGCN	BLM SSS	Main channels of large, deep, turbid rivers with sandy or gravelly bottoms	Yes	Yes	No
Sauger (<i>Sander canadensis</i>)	NA	SOC	NA	BLM SSS	Cool or warmwater, turbid, slow-flowing, large rivers, but can be found in muddy shallows of lakes and reservoirs	Yes	Yes	No
Shortnose gar (<i>Lepisosteus platostomus</i>)	NA	SOC	NA	NA	Large rivers, quiet creek pools, river backwaters, and oxbow lakes	Yes	No	No
Sicklefin chub (<i>Macrhybopsis meeki</i>)	NA	SOC	SGCN	NA	Main channels of large, turbid rivers with strong currents over sand or fine gravel bottoms	Yes	No	No
Sturgeon chub (<i>Macrhybopsis gelida</i>)	NA	SOC	SGCN	BLM SSS	Turbid waters with moderate to strong current with bottoms ranging from coarse sand to gravel and rocks	Yes	Yes	No
Mussels								
Fragile papershell (<i>Leptodea fragilis</i>)	NA	NA	SGCN	NA	Found in medium to large rivers with mud, gravel, or sand substrate	Yes	No	No
Pink papershell (<i>Potamilus ohioensis</i>)	NA	NA	SGCN	NA	Medium to large rivers, generally with sandy or muddy bottom substrates	Yes	No	No

Source: Grid United 2024b, 2026d; FWP 2025c

BLM = Bureau of Land Management; EIS = Environmental Impact Statement; LE = Listed Endangered; MTNHP = Montana Natural Heritage Program; NA = not applicable; SCP = Species of Conservation Priority; SGCN = Species of Greatest Conservation Need; SOC = Species of Concern; SSS = Special Status Species; SWAP = State Wildlife Action Plan

Notes:

^a State sensitive wildlife species are listed in the MTNHP Animal Species of Concern Report (MTNHP 2024) and the approved 2025 SWAP in North Dakota (NDGFD 2026). Due to the size of these species lists, the potential for a species to occur in the Project Area was based on county-level occurrence data (Montana Field Guide 2024) and/or the species' known range within a Project county (NDGFD 2026).

^b The Draft EIS used the 2015 North Dakota SWAP (Dyke 2015) to determine species of concern for North Dakota (i.e., SCP). The Final EIS has been updated to align with the 2025 North Dakota SWAP (NDGFD 2026), which updated designations to SGCN.

^c The BLM SSS lists provided to Montana/Dakotas Leadership in Instruction Memorandum No. MT-2020-012 (March 16, 2020) included an expiration date of September 30, 2023. As there is no updated list at this time, the 2020 list has been used (Grid United 2026d).

^d Occurrence information is based on publicly available data, natural heritage inventory data, and/or survey data. Common species are not typically included in occurrence datasets but may still occur within the Project area.

^e This is documented in the FISHMT database.

Table 3.14-3
Special Status Wildlife Species with Potential to Occur in Project Area

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Mammals								
Big brown bat (<i>Eptescius fuscus</i>)	NA	NA	SGCN	NA	Year-round resident of North Dakota. Roosting habitat includes trees, human-made structures (e.g., buildings, barns, bridges), and small cavities. Hibernacula commonly found in caves, deep rock crevices, snags, and human-made structures (e.g., buildings, bridges).	Yes	No	Yes
Bighorn sheep (<i>Ovis canadensis</i>)	NA	NA	NA	USDA Forest Service RFSS	Dependent on alpine to desert grasslands, shrub steppe in mountains, river canyons, or foothills. Escarpment terrain, such as talus slopes, cliffs, etc., is an important feature of the habitat.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Black-tailed prairie dog (<i>Cynomys ludovicianus</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS	Year-round resident of Montana and western North Dakota. Found in open grasslands and shrub/grasslands with sparse vegetation. Requires silty clay loams, sandy clay loams, and loams for burrowing.	Yes	Yes	Yes
Eastern red bat (<i>Lasiurus borealis</i>)	NA	SOC	SGCN	BLM SSS	Summer resident of eastern Montana. Roosting habitat includes primarily deciduous trees and occasionally coniferous trees.	Yes	Yes	Yes
Fringed myotis (<i>Myotis thysanodes</i>)	NA	SOC	SGIN	BLM SSS	Year-round resident of Montana. Roosting habitat includes caves, abandoned mines, rock crevices, cliff faces, and buildings. Hibernacula commonly found in caves, abandoned mines, and buildings.	Yes	Yes	NA

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Gray wolf (<i>Canis lupus</i>)	LE	NA	NA	BLM SSS	In the midwestern states, habitat ranges from forest and prairie landscapes dominated by agricultural and pasture lands to mixed hardwood-coniferous forests and sparsely settled areas. Ungulate populations within gray wolves' habitat are also important to sustain the wolf population.	Yes	No	No
Hispid pocket mouse (<i>Chaetodipus hispidus</i>)	NA	SOC	SGIN	NA	Year-round resident of southeastern Montana and southwestern North Dakota. Prefers short and mixed grasslands with sparse or moderate vegetation but will occasionally occur in gravelly areas with heavy soils.	Yes	No	No
Hoary bat (<i>Lasiurus cinereus</i>)	NA	SOC	SGCN	BLM SSS	Summer resident of Montana. Roosting habitat includes primarily deciduous trees and occasionally coniferous trees.	Yes	Yes	Yes

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Little brown bat (<i>Myotis lucifugus</i>)	UR	SOC	SGCN	USDA Forest Service RFSS	Roosting habitat includes human-made structures (e.g., attics, barns, bridges), trees, and occasionally rock crevices near water. Hibernacula commonly found in caves and abandoned mines.	Yes	Yes	Yes
Long-legged myotis (<i>Myotis volans</i>)	NA	SOC	SGIN	NA	Year-round resident of Montana and western North Dakota. Roosting habitat includes trees (under loose bark and in cavities), rock crevices, and cliffs. Hibernacula commonly found in caves and abandoned mines.	Yes	Yes	No
Merriam's shrew (<i>Sorex merriami</i>)	NA	SOC	SGIN	NA	Year-round resident of Montana and southwestern North Dakota. Inhabit arid short grass prairies or sage steppes.	Yes	Yes	No
Northern long-eared bat (<i>Myotis septentrionalis</i>)	LE	SOC	SGCN	BLM SSS	Roosting habitat includes mature-growth forests with snags or trees with cavities and loose bark; occasionally will use human-made structures (e.g., barns or bat houses). Hibernacula include caves and abandoned mines.	Yes	No	Yes

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Pallid bat (<i>Antrozous pallidus</i>)	NA	SOC	NA	NA	Summer resident of southwestern Montana. Roosting habitat primarily includes buildings or rock crevices but can occasionally be found in caves, tree hollows, bridges, and abandoned mines.	Yes	Yes	No
Sagebrush vole (<i>Lemmyscus curtatus</i>)	NA	NA	SGIN	NA	Year-round resident of Montana and western North Dakota. Found in semiarid habitats that normally include sagebrush or rabbit brush with grasses.	Yes	NA	No
Silver-haired bat (<i>Lasionycteris noctivagans</i>)	NA	SOC	SGCN	NA	Potential year-round resident in Montana. Roosts in tree cavities, under loose bark, and manmade structures (e.g., sheds and barns). Hibernacula include tree cavities, rock crevices, and buildings.	Yes	Yes	Yes
Spotted bat (<i>Euderma maculatum</i>)	NA	NA	NA	BLM SSS	Summer resident of Montana. Roosting habitat includes caves and in cracks and crevices in cliffs and canyons.	Yes	Yes	No
Swift fox (<i>Vulpes velox</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS	Year-round resident of eastern Montana. Inhabits arid grasslands and sage-steppe.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	NA	SOC	SGIN	BLM SSS; USDA Forest Service RFSS	Year-round resident in Montana and North Dakota. Roosting habitat primarily includes caves and abandoned mines but can also be found in buildings in late summer. Hibernacula commonly found in caves and abandoned mines.	Yes	Yes	Yes
Tricolored bat (<i>Perimyotis subflavus</i>)	PE	NA	NA	BLM SSS	Roosting habitat is primarily in dead or living tree foliage but can also be found in caves, mines, and rock crevices. Hibernacula are commonly found in caves, abandoned mines, and cave-like tunnels.	Yes	No	No
Western long-eared bat (<i>Myotis evotis</i>)	NA	SOC	SGIN	USDA Forest Service RFSS	Year-round resident of Montana and western North Dakota. Roosting habitat includes trees (under loose bark and in cavities) and rock fissures. Hibernacula commonly found in caves and abandoned mines.	Yes	Yes	Yes

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Western small-footed bat (<i>Myotis ciliolabrum</i>)	NA	NA	SGIN	NA	Year-round resident in western North Dakota. Roosting habitat includes rock outcrops, clay banks, caves, abandoned mines, under loose tree bark, and human-made structures (e.g., buildings, bridges). Hibernacula commonly found in caves and abandoned mines.	Yes	NA	Yes
Birds								
American avocet (<i>Recurvirostra americana</i>)	NA	NA	SGCN	BCC	Summer resident in Montana and North Dakota. During the summer, prefers marshes, mud flats, and shallow lakes with little vegetation. Nesting usually occurs on islands within lakes or wetlands.	Yes	No	No
American bittern (<i>Botaurus lentiginosus</i>)	NA	SOC	SGCN	BLM SSS	Summer resident in Montana and North Dakota. Prefers large wetlands with tall emergent vegetation. Avoids wetlands with large amounts of open water and nest in densely vegetated wetlands or in adjacent uplands with tall vegetation.	Yes	Yes	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
American golden-plover (<i>Pluvialis dominica</i>)	NA	NA	SGCN	NA	Breeds in the far northern tundra of North America. In North Dakota, it uses tilled cropland, untilled harvested fields, short grasslands and native prairie, cropland ponds, mudflats, and shallow water or exposed shorelines of wetlands.	Yes	No	No
American goshawk (<i>Astur atricapillus</i>)	NA	SOC	NA	NA	Year-round resident in western Montana and winter resident in eastern Montana. Prefers to nest in old growth forests. Little known about their migration of wintering habitat in Montana.	Yes	No	No
American kestrel (<i>Falco sparverius</i>)	NA	NA	SGCN	NA	Summer resident in Montana and North Dakota. Can be found in all habitats but tend to hunt in open areas. Nests in cavities in trees or in human-made nest boxes.	Yes	No	Yes
American white pelican (<i>Pelecanus erythrorhynchos</i>)	NA	SOC	SGIN	NA; BCC	Summer resident in Montana and North Dakota. Nests on islands or peninsulas in large lakes. Prefers to forage in shallow waters.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Baird's sparrow (<i>Centronyx bairdii</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS; BCC ^f	Summer resident in North Dakota. Prefers native prairie but also uses idle, tame grasslands, and grazed pastures.	Yes	Yes	Yes
Bald eagle (<i>Haliaeetus leucocephalus</i>)	NA	NA	NA	BLM SSS; BGEPA	Migrates widely over most of North America. Breeding habitat commonly includes areas close to rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources such as fish, waterfowl, or seabirds. Nests typically occur in tall trees or on cliffs near water.	Yes	Yes	No
Black tern (<i>Chlidonias niger</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Uses wetland complexes of shallow wetlands, typically greater than approximately 49 acres, with an equal amount of open water and emergent vegetation. Foraging habitat generally consists of large areas of open water. Nests on a floating mat of residual vegetation in sparse to moderately dense emergent vegetation.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Black-backed woodpecker (<i>Picoides arcticus</i>)	NA	SOC	NA	BLM SSS	Year-round resident in Montana. Prefers early successional, burned forests with lodgepole pine (<i>Pinus contorta</i>), Douglas fir (<i>Pseudotsuga menziesii</i>), and spruce-fir (<i>Picea abies</i>) and are more common at lower elevations.	Yes	No	No
Black-billed cuckoo (<i>Coccyzus erythrophthalmus</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Occupies densely wooded habitats, often in riparian areas. Also found in abandoned farmlands or similar brushy habitat. Nests in trees with concealing foliage. Preys on large insects such as caterpillars, katydids, cicadas, and grasshoppers occurring within the canopy of woodlands.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Bobolink (<i>Dolichonyx oryzivorus</i>)	NA	SOC	SGCN	BCC ^f	Often forms large flocks during northward migration. Breeding habitat generally includes tall grass areas, flooded meadows, prairie, deep cultivated grains, and hayfields. Nesting occurs in habitats with moderate to tall vegetation, moderately deep litter, and lacking woody vegetation. Feeds primarily on insects, seeds, and grain.	Yes	Yes	Yes
Brewer's sparrow (<i>Spizella breweri</i>)	NA	SOC	SGCN	BLM SSS	Summer resident in Montana. Requires sagebrush for nesting and prefers areas with heavy shrub cover.	Yes	Yes	No
Brown creeper (<i>Certhia americana</i>)	NA	SOC	NA	NA	Year-round resident in Montana. Breed and nest in coniferous and mixed coniferous-deciduous forests, preferring mature and old-growth stands with high canopy cover.	Yes	No	No
Brown thrasher (<i>Toxostoma rufum</i>)	NA	NA	SGCN	NA	Prefers open brushy woods, riparian woodlands, woody draws, and thickets of small trees or shrubs.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Buff-breasted sandpiper (<i>Calidris subruficollis</i>)	NA	NA	SGCN	NA	Breed along the Arctic coastlines of Alaska and Canada. The species uses tilled cropland (often with emerging crops), untilled harvested fields, short-stature grasslands, and wetland habitats to a lesser degree.	Yes	No	No
Burrowing owl (<i>Athene cunicularia</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS; BCC	Summer resident in Montana and North Dakota. Prefers open grasslands with abandoned or active prairie dog colonies, or Richardson's ground squirrel (<i>Urocitellus richardsonii</i>) burrows to use for nesting.	Yes	Yes	No
California gull (<i>Larus californicus</i>)	NA	NA	NA	BCC ^f	Breed inland on the ground near lakes and rivers, often in mixed flocks with ring-billed gulls. Nests usually constructed on islands. Winters along the Pacific coast, from the Baja California peninsula to Washington. Diet includes insects, fish, eggs, carrion, and refuse.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Canvasback (<i>Aythya valisineria</i>)	NA	NA	SGCN	NA	Summer resident in North Dakota east of the Missouri River. Prefers wetlands, small lakes, and marshes. Relies on deep wetlands for breeding.	Yes	No	No
Caspian Tern (<i>Hydroprogne caspia</i>)	NA	SOC	NA	BLM SSS	Migratory and summer resident in Montana. Prefers islands on large bodies of water with sandy or stony beaches for nesting.	No	No	No
Cassin's finch (<i>Haemorhous cassinii</i>)	NA	SOC	NA	BCC	Year-round resident in Montana. Occurs in all forest types but prefers ponderosa pine (<i>Pinus ponderosa</i>) and successional forests.	Yes	No	No
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Preferred summer habitats include shortgrass prairie and grazed pastures. Diet includes seeds and insects.	Yes	Yes	Yes
Clark's nutcracker (<i>Nucifraga columbiana</i>)	NA	SOC	NA	BCC	Year-round resident in Montana. At higher elevations, prefers white bark pine forests and at lower elevations prefers ponderosa pine, limber pine (<i>Pinus flexilis</i>), and Douglas fir forests.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Common tern (<i>Sterna hirundo</i>)	NA	SOC	NA	BLM SSS; BCC	Migratory and summer resident in Montana and North Dakota. Prefers islands on large bodies of water with little vegetation. All nesting occurs on these islands.	No	No	No
Dickcissel (<i>Spiza americana</i>)	NA	NA	NA	BCC	Summer resident in eastern Montana and North Dakota. Uses a variety of grassland types but requires moderate to tall vegetation.	Yes	No	No
Dunlin (<i>Calidris alpina</i>)	NA	NA	SGCN	NA	Breeds in the far northern coastal tundra of North America. In North Dakota, the species primarily uses a variety of shallow water wetlands and lakes, mudflats, and sandy, rocky or exposed shorelines.	Yes	No	No
Evening grosbeak (<i>Coccothraustes vespertinus</i>)	NA	SOC	NA	NA	Year-round resident in Montana. Breeds and nests in mixed coniferous and spruce-fir forests.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Ferruginous hawk (<i>Buteo regalis</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Breeds in grasslands, shrublands, and near pinyon-juniper forests. Prefers to build nests on cliffs and in trees. Diet includes small mammals, such as rabbits, ground squirrels, prairie dogs, and pocket gophers, as well as birds.	Yes	Yes	Yes
Franklin's gull (<i>Leucophaeus pipixcan</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Prefers freshwater marshes for nesting. Outside of nesting, spreads out along the prairie region. Forages in agricultural areas, pastures, ponds, marshes, and other bodies of water. diet includes insects, worms, mollusks, and fish.	Yes	No	No
Golden eagle (<i>Aquila chrysaetos</i>)	NA	SOC	SGCN	BLM SSS; BGEPA	Prefers more open areas to developed areas and forests. Nests on cliffs, escarpments, and occasionally in large trees. Diet is small to medium sized mammals, such as rabbits, ground squirrels, and prairie dogs.	Yes	No	Yes

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	NA	NA	SGCN	BCC ^f	Summer resident in Montana and North Dakota. Uses a variety of grasslands with vegetation of intermediate height and patches of vegetation and bare ground.	Yes	Yes	Yes
Great blue heron (<i>Ardea herodias</i>)	NA	SOC	NA	BCC	Summer resident in eastern Montana and North Dakota. Primarily nests in cottonwoods (<i>Populus deltoides</i>) near rivers and lakes but also nests in ponderosa pines.	Yes	Yes	No
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS	Year-round resident in eastern Montana. Prefers habitats with sagebrush. Leks occur in areas with sparse or short vegetation while nesting and foraging occurs in areas with more dense sagebrush cover. Leks also found within 2 miles of the Project during 2022 and 2023 lek surveys.	Yes	Yes	No
Green-tailed towhee (<i>Pipilo chlorurus</i>)	NA	SOC	NA	NA	Summer resident in Montana. Prefers the edge of habitats with mixed shrub species.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Harris's sparrow (<i>Zonotrichia querula</i>)	NA	NA	SGCN	NA	Breeds in a small area between the boreal forest and tundra of northern Canada. Nests on the ground under small shrubs.	Yes	No	No
Horned grebe (<i>Podiceps auritus</i>)	NA	SOC	SGCN	NA	Occurs during migration in southern Montana and western North Dakota. During migration, prefers larger bodies of water such as rivers and lakes.	Yes	No	No
Horned lark (<i>Eremophila alpestris</i>)	NA	NA	SGCN	NA	Prefers short-stature grasslands, sparse vegetation, and bare ground, with little or no woody vegetation.	Yes	No	No
Hudsonian godwit (<i>Limosa haemastica</i>)	NA	NA	SGCN	NA	Breeds in wet-sedge meadows intermixed with forest in the arctic and subarctic regions of Alaska and Canada. In North Dakota, the species uses a variety of wetlands, lakes, and cropland ponds during migration.	Yes	No	No
Interior least tern (<i>Sterna antillarum athalassos</i>)	NA	SOC	SGCN	USDA Forest Service RFSS	Summer resident along Missouri River in North Dakota. Nests on sand-pebble beaches lacking vegetation.	No	No	No

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Lark bunting (<i>Calamospiza melanocorys</i>)	NA	NA	SGCN	BCC ^f	Only be found in grasslands and shrub steppe. Prefers native grasslands and prairies during the breeding season. Tends to build nests at the base of shrubs, so some taller vegetation is required. During the winter, nomadic and use a wider variety of habitats. Diet includes seeds, insects, and fruit.	Yes	Yes	No
LeConte's sparrow (<i>Ammospiza leconteii</i>)	NA	SOC	SGCN	BCC	Occurs during migration in Grant and Morton counties, North Dakota. Does not occur near the Project in Montana. Prefers a wide variety of wet or moist grasslands, such as sedge meadows.	Yes	No	No
Lesser scaup (<i>Aythya affinis</i>)	NA	NA	SGCN	NA	Summer resident in Montana and occurs during migration south of the Missouri River in North Dakota. Prefers lakes, ponds, rivers, and wetlands.	Yes	NA	No

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Lesser yellowlegs (<i>Tringa flavipes</i>)	NA	NA	SGCN	BCC ^f	Occurs near marshes, ponds, wet meadows, lakes, and mudflats during non-breeding seasons. Also nests in marshes or bogs, clearings, or burned-over sections of black spruce forest in depressions in the ground. Feeds primarily on insects such as beetles, dragonfly nymphs, grasshoppers, and flies but may also prey on small fish or crustaceans.	Yes	No	No
Lewis's woodpecker (<i>Melanerpes lewis</i>)	NA	SOC	NA	BCC ^f	Occurs in river bottom woods and forest edge habitats. Often nests in holes and crevices created by other woodpeckers or created naturally in dead and decaying trees (snags). Range does not extend into North Dakota.	Yes	No	No
Loggerhead shrike (<i>Lanius ludovicianus</i>)	NA	SOC	SGCN	BLM SSS; BCC	Summer resident in Montana. Uses a variety of open habitats with short vegetation, such as pastures, shortgrass prairies, and open woodlands.	Yes	Yes	No

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Long-billed curlew (<i>Numenius americanus</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS; BCC	Summer resident in Montana and North Dakota. Breeds in open, mixed shortgrass prairies. Forages in grasslands, fields, and prairie dog colonies.	Yes	No	No
Long-billed dowitcher (<i>Limnodromus scolopaceus</i>)	NA	NA	SGCN	NA	Use expansive, open, level to gently rolling or sloping grasslands of short vegetation such as short-grass and grazed mixed-grass prairie, cropland, and hay land. Nests in dry uplands, in grassland or cropland.	Yes	No	No
Long-eared owl (<i>Asio otus</i>)	NA	NA	NA	BCC ^f	Nest in dense vegetation adjacent to open prairies and grasslands where they can easily forage. Uses both forests and areas with shorter vegetation to build nests. Diet includes voles, mice, shrews, pocket gophers, and young rabbits.	Yes	No	No

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Marbled godwit (<i>Limosa fedoa</i>)	NA	NA	SGCN	BCC ^f	During the breeding season, can be found in shortgrass native prairies located near wetlands. In the winter, migrates to coastal mudflats and beaches. Diet includes invertebrates, aquatic plants, and small fish.	Yes	No	No
Mountain plover (<i>Charadrius montanus</i>)	NA	SOC	NA	BLM SSS; BCC ^f	Often nests in shortgrass prairie, plowed fields, and overgrazed pastures near prairie dog towns. In the winter, uses a wider variety of habitats but still prefers shortgrass. Diet consists of insects and other invertebrates. The Montana section of the Project is at the eastern edge of their range. Range does not extend into North Dakota.	Yes	No	No
Nelson's sparrow (<i>Ammospiza nelsoni</i>)	NA	SOC	SGCN	NA	Prefer freshwater wetlands with dense, emergent vegetation such as prairie cordgrass, cattails, bulrushes, sedges, or common reed.	Yes	No	No

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Northern harrier (<i>Circus hudsonius</i>)	NA	NA	SGCN	BCC ^f	Nearly year-round resident in North Dakota. Absent December–January. Nests in undisturbed grasslands. Forages in wetlands, grasslands, pastures, and agricultural lands.	Yes	Yes	Yes
Northern pintail (<i>Anas acuta</i>)	NA	NA	SGCN	NA	Summer resident in North Dakota. Nests in native prairie near shallow wetlands. Also uses hayfields and pastures. Forages in shallow wetlands.	Yes	NA	No
Pectoral sandpiper (<i>Calidris melanotos</i>)	NA	NA	SGCN	NA	Breeds in the Arctic tundra of Alaska. Within North Dakota, the species uses a variety of wetlands, lakes, cropland ponds, and mesic grasslands during migration.	Yes	No	No
Peregrine falcon (<i>Falco peregrinus</i>)	NA	NA	SGIN	BLM SSS	Occurs during migration (April–May and September–November). Forages in open prairie, along rivers, and over other waterbodies. Feeds primarily on pigeons and waterfowl.	Yes	No	NA
Pinyon jay (<i>Gymnorhinus cyanocephalus</i>)	UR	SOC	NA	BCC ^f	Relies on ponderosa pine (<i>Pinus ponderosa</i>) and pine-juniper woodlands.	Yes	No	No

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Piping plover (<i>Charadrius melodus</i>)	LT	SOC	SGCN	BLM SSS; BCC	Stopover habitat in open areas with gravelly and/or sandy substrate with little to no vegetation; along shorelines and sandbars of rivers, alkaline waterbodies, and ponds.	Yes	No	No
Prairie falcon (<i>Falco mexicanus</i>)	NA	NA	SGCN	BCC ^f	Breeds in grasslands and shrubby grasslands where cliffs for nests are present. Winters in the Great Plains, preferring grassland and agricultural land. Diet includes ground squirrels, birds, and insects.	Yes	No	No
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	NA	SOC	SGCN	BLM SSS; BCC ^f	Occupies open woodlands and other open areas with scattered trees, such as pine-savannah and pine-oak barrens. Nests in cavities occurring within dead trees or limbs. Diet consists of insects captured in the air or gleaned from bark and foliage.	Yes	No	No
Rufa red knot (<i>Calidris canutus rufa</i>)	LT	NA	SGIN	BLM SSS	Stopover habitat along saline lakes, alkaline lakes, wetlands, riverine sandbars, and impoundments.	Yes	No	No

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Sage thrasher (<i>Oreoscoptes montanus</i>)	NA	SOC	NA	BLM SSS; BCC	Summer resident in Montana. Breeds in areas with a high density of big sagebrush.	Yes	No	No
Semipalmated sandpiper (<i>Calidris pusilla</i>)	NA	NA	SGCN	NA	Breeds in the low-arctic and subarctic areas of Alaska, northern Canada, and the Hudson Bay. Within North Dakota, the species uses a variety of shallow freshwater and brackish wetlands, typically with little vegetation, mudflats, and shorelines.	Yes	NA	No
Sharp-tailed grouse (<i>Tympanuchus phasianellus</i>)	NA	SOC	SGCN	NA	Prime habitat consists of mixed grasslands, sometimes intermixed with shrubs, brushy ravines, and trees, which offer varying amounts of canopy cover and provide essential cover for nesting, resting, feeding, and overwintering.	Yes	Yes	Yes
Short-billed dowitcher (<i>Limnodromus griseus</i>)	NA	NA	SGCN	NA	Breeds in the boreal and subarctic areas regions of southern Alaska and Canada. In North Dakota, the species uses a variety of wetlands, lakes, and cropland ponds during migration.	Yes	No	No

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Short-eared owl (<i>Asio flammeus</i>)	NA	NA	SGCN	BCC	Year-round resident in western North Dakota. Nests in dry uplands with an area of greater than 247.1 acres. Forages in a variety of open grasslands.	Yes	Yes	No
Sprague's pipit (<i>Anthus spragueii</i>)	NA	SOC	SGCN	BLM SSS; USDA Forest Service RFSS; BCC ^f	Breeds in the Great Plains, preferring native mixed-grass prairie with shorter vegetation. During migration, also uses cropland. In the winter, uses native and nonnative grasslands. Diet is primarily arthropods but also eats seeds outside of the breeding season.	Yes	No	No
Stilt sandpiper (<i>Calidris himantopus</i>)	NA	NA	SGCN	NA	Breeds in the low-arctic and subarctic areas of Alaska, northern Canada, and the Hudson Bay. In North Dakota, the species uses a variety of wetlands, lakes, and cropland ponds during migration.	Yes	No	No
Thick-billed longspur (<i>Rynchophanes mccownii</i>)	NA	SOC	SGCN	BCC ^f	Summer resident in Montana; summer and migratory resident in western North Dakota. Nests in open shortgrass with sparse vegetation. Also uses pastures.	Yes	Yes	No

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Upland sandpiper (<i>Bartramia longicauda</i>)	NA	NA	SGCN	BCC	Summer resident in North Dakota. Nests in a variety of grasslands with taller vegetation, such as native prairies, pastures, and agricultural fields. Forages in areas with shorter vegetation.	Yes	No	No
Veery (<i>Catharus fuscescens</i>)	NA	SOC	NA	BLM SSS; BCC	Summer resident in Montana. Nests in riparian areas consisting of willow and cottonwood, though can also be found in disturbed, deciduous forests.	Yes	No	No
Western grebe (<i>Aechmophorus occidentalis</i>)	NA	NA	SGCN	BCC ^g	Breeds on freshwater lakes and marshes. After the breeding season, often migrates to coastal areas, though some will remain inland. Diet primarily consists of fish but also eats amphibians and invertebrates.	Yes	No	No
Western meadowlark (<i>Sturnella neglecta</i>)	NA	NA	SGCN	NA	Summer resident in North Dakota. Nests in native and nonnative grasslands with an intermediate amount of grass and cover.	Yes	No	No

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White-faced ibis (<i>Plegadis chihi</i>)	NA	SOC	NA	BLM SSS	Migratory and summer resident of Montana. Nests in emergent vegetation, bushes, and trees that are surrounded by water. Forages in flooded fields, woodland streams, and small marshes.	Yes	No	No
Whooping crane (<i>Grus americana</i>)	LE	SOC	SGCN	BLM SSS	Stopover habitat in or near wetlands and croplands.	Yes	No	Yes ^g
Willet (<i>Tringa semipalmata</i>)	NA	NA	SGCN	BCC ^g	The eastern population breeds in saltmarshes along the Atlantic coast. The western population, which is the population present in North Dakota and Montana, nests near marshes, prairie potholes, and other wetlands. Diet consists of fish and various invertebrates such as beetles and spiders.	Yes	No	No
Wilson's phalarope (<i>Phalaropus tricolor</i>)	NA	NA	SGCN	NA	Summer resident in North Dakota. Nests in upland grasslands near water. Forages in wetlands.	Yes	No	No
Yellow-billed Cuckoo (<i>Coccyzus americanus</i>)	NA	SOC	NA	NA	Preferred breeding habitat includes open woods, deciduous riparian woodlands, and parks.	Yes	No	No

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Reptiles								
Plains hognose snake (<i>Heterodon nasicus</i>)	NA	SOC	SGCN	BLM SSS	Dry, sandy, or gravelly areas in grassland, open sand prairies, or sand dunes but may use mixed forest habitats and cropland.	Yes	Yes	No
Sagebrush lizard (<i>Sceloporus graciosus</i>)	NA	NA	SGIN	NA	Sagebrush, rocky areas near water, and adjacent areas of fine gravel, sandy, or rocky soil; may use areas with boulders, forested slopes, and open flat land with rock crevices or mammal holes.	Yes	NA	No
Short-horned lizard (<i>Phrynosoma herdandesi</i>)	NA	SOC	SGIN	BLM SSS	Arid landscapes, shortgrass prairie, and rough terrain; may also use open areas, shrubby, or open woody areas with sparse ground vegetation.	Yes	Yes	No
Smooth greensnake (<i>Opheodrys vernalis</i>)	NA	SOC	SGCN	BLM SSS	Grazed or ungrazed grasslands; may also use moist meadows, native prairies, woodland clearings, residential lawns, city parks, and wetland complexes.	Yes	No	No
Snapping turtle (<i>Chelydra serpentina</i>)	NA	SOC	SGCN	BLM SSS	Warm water in permanent lakes or rivers with a muddy bottom and abundant aquatic vegetation.	Yes	Yes	No

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Spiny softshell (<i>Apalone spinier</i>)	NA	SOC	SGIN	BLM SSS	Primarily riverine habitats, including permanent streams or creeks with sandy or muddy bottoms such as marshy creeks, bayous, oxbows, lakes, irrigation canals, and impoundments; sandy beaches sandbars for nesting.	Yes	Yes	No
Western milk snake (<i>Lampropeltis gentilis</i>)	NA	SOC	NA	BLM SSS	Open sagebrush-grassland habitat and ponderosa pine-savannah with sandy soils, near rocky outcrops, hillsides, and badland scarps.	Yes	Yes	No
Amphibians								
Great plains toad (<i>Anaxyrus cognatus</i>)	NA	SOC	NA	BLM SSS	Sagebrush-grassland, rainwater pools, stream valleys, small reservoirs and stock ponds, and rural farms. Breeding habitat includes small reservoirs and backwater sites along streams.	Yes	Yes	No
Plains spadefoot (<i>Speak bombifrons</i>)	NA	NA	SGCN	NA	Dry, open grasslands with sandy or loose soil. Breeding habitat includes temporary wetlands without heavy vegetation.	Yes	No	No

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Insects								
A sand-dwelling mayfly (<i>Homoeoneuria alleni</i>)	NA	SOC	NA	NA	Sandy/silted depositional areas of large, perennial prairie rivers with sandy, gravelly bottoms.	Yes	No	No
Abbreviated underwing (<i>Catocala abbreviatella</i>)	NA	NA	SGCN	NA	Typically found in dry prairies that include its host plant, the leadplant (<i>Amorpha canescens</i>).	Yes	No	No
Ainslie's cuckoo nomad bee (<i>Epeolus ainsliei</i>)	NA	NA	SGCN	NA	Typically found in drier prairies where its host species, Susan's cellophane bee (<i>Colletes susannae</i>) and American cellophane bee (<i>Colletes americanus</i>) are found.	Yes	No	No
American bumble bee (<i>Bombus pensylvanicus</i>)	UR	SOC	SGCN	NA	Foraging and reproductive habitat in open habitat such as farmlands, fields, tall grasslands, and prairie with flowering plants.	Yes	No	No
Arogos skipper (<i>Aytrytone arogos</i>)	NA	SOC	SGIN	NA	Native tall and mixed-grass prairie, grassy meadows, and serpentine barrens; larval food plants are grasses, particularly bluestem species (<i>Andropogon</i> spp.).	Yes	No	No

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Badlands tiger beetle (<i>Cicindela decemnotata</i>)	NA	NA	SGCN	NA	Found in areas with sparse vegetation, such as open ground, dunes, badlands, sagebrush steppe, dirt paths, and grasslands with minimal vegetation.	Yes	No	No
Broad-winged skipper (<i>Poanes viator</i>)	NA	NA	SGCN	NA	Found in marshes, wet meadows, and wetlands that contain its host plants, such as sedges and common reed.	Yes	No	No
Cree small square-gilled mayfly (<i>Cercobrachys cree</i>)	NA	NA	SGCN	NA	Occurs in medium to large, sand dominated river systems such as the Little Missouri, Cannonball, and Heart rivers.	Yes	No	No
Dakota skipper (<i>Hesperia dacotae</i>)	LT	NA	SGCN	BLM SSS	Foraging and reproductive habitat in native tracts of tall and mixed-grass prairie; bluestem grasses (<i>Andropogon</i> spp.) and purple coneflower (<i>Echinacea pallida</i>) often indicative of suitable habitat.	Yes	No	Yes
Dakota stonefly (<i>Perlesta dakota</i>)	NA	NA	SGCN	NA	Found in low gradient, medium sized rivers in central North Dakota such as the Cannonball, Heart, and Sheyenne rivers.	Yes	No	No

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Dion skipper (<i>Euphyes dion</i>)	NA	NA	SGCN	NA	Occurs in marshes, wet meadows, swamps, wetlands, and mesic grasslands.	Yes	No	No
Edwards' hairstreak (<i>Satyrium edwardsii</i>)	NA	NA	SGCN	NA	Found in woodland edges, savannas, tree rows, and other areas that offer both its host plant (oaks; <i>Quercus</i> spp.) and nectar resources.	Yes	No	No
Ghost tiger beetle (<i>Cicindela lepida</i>)	NA	NA	SGCN	NA	Prefers sand dunes and sparsely vegetated areas with highly sanded soils.	Yes	No	No
Gray comma (<i>Polygonia prone</i>)	NA	SOC	NA	NA	Deciduous woodlands, riparian woodlands, forest openings; larval food plants include currant (<i>Ribes</i> spp.), birch (<i>Betula</i> spp.), Rhododendron (<i>Rhododendron</i> spp.), and rarely elm (<i>Ulmus</i> spp.) species.	Yes	No	No
Hera sheepmoth (<i>Hemileuca hera</i>)	NA	NA	SGCN	NA	Sagebrush steppe to shortgrass prairies that include its host plant (sagebrush; <i>Artemisia</i> spp.).	Yes	No	No
Hobomok skipper (<i>Lon hobomok</i>)	NA	NA	SGCN	NA	Utilizes grasslands, woodland edges, edges of bogs, wetlands, and streams.	Yes	No	No

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Indiscriminate cuckoo bumble bee (<i>Bombus insularis</i>)	NA	NA	SGCN	NA	Prefers native prairie, sagebrush steppe, and other shrublands, meadows, and woodland edges.	Yes	No	No
Monarch butterfly (<i>Danaus plexippus</i>)	PT	SOC	SGCN	BLM SSS	Foraging and reproductive habitat in open habitat with flowering plants and milkweed (<i>Asclepias</i> spp.) (larval host plant).	Yes	No	Yes
Mulberry wing (<i>Poanes Massasoit</i>)	NA	NA	SGCN	NA	Occurs in mesic habitats, including wet meadows, bogs, marshes, wetland and small stream riparian areas, and wet roadsides.	Yes	No	No
Northern sandy tiger beetle (<i>Cicindela limbata</i>)	NA	NA	SGCN	NA	Sand dunes and sparsely vegetated areas with highly sanded soils.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Ottoo skipper (<i>Hesperia ottoe</i>)	NA	SOC	SGCN	USDA Forest Service RFSS	Native dry-mesic to dry prairie where mid-height grasses (little bluestem prairie dropseed, side-oats grama) are a major component of the vegetation. Includes prairies on deep sands, on steep bedrock-controlled slopes, and on slopes and hills in unsorted glacial till. Adults forage into nearby moister prairie.	Yes	No	Yes
Plains emerald (<i>Somatochlora ensigera</i>)	NA	NA	SGCN	NA	Occurs in small rivers and streams with well defined, forested riparian zones such as the Tongue and North Branch Park rivers.	Yes	No	No
Plains stripetail (<i>Isoperla longiseta</i>)	NA	NA	SGCN	NA	Occurs in large, cool, sand dominated river systems such as the Missouri, Pembina, and Sheyenne rivers.	Yes	No	No
Prong-gilled mayfly (<i>Traverella lewisi</i>)	NA	NA	SGCN	NA	Occurs in large, sand dominated river systems such as the Little Missouri River.	Yes	No	No
Rustic flat-headed mayfly (<i>Anepeorus rusticus</i>)	NA	SOC	NA	NA	Large, perennial prairie rivers with sand-dominated bottoms and cobble riffles.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Saskatchewan brush-legged mayfly (<i>Lachlania saskatchewanensis</i>)	NA	SOC	SGCN	NA	Occurs in medium to large, sand dominated river systems such as the Little Missouri, Cannonball, and Heart rivers.	Yes	No	No
Suckley's cuckoo bumble bee (<i>Bombus Suckley</i>)	PE	SOC	SGIN	BLM SSS	Foraging and reproductive habitat in the same habitat as its preferred host species: the western bumble bee (<i>Bombus occidentalis</i> ; see below).	Yes	No	No
Tawny crescent (<i>Phyciodes batessi</i>)	NA	NA	SGCN	USDA Forest Service RFSS	Moist slopes, ravines, pastures, dry rocky ridges, deciduous woodland openings, mesic meadows, aspen stands, riparian corridors. Also associated with areas that contain big and little bluestem grasses.	Yes	No	No
Variable cuckoo bumble bee (<i>Bombus variabilis</i>)	UR	NA	NA	NA	Foraging and reproductive habitat in the same habitat as its preferred host species, the American bumble bee (see above).	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Wallace's deepwater mayfly (<i>Raptoheptagenia cruentata</i>)	NA	SOC	SGCN	BLM SSS	Prefers large, perennial prairie streams and rivers with sand-dominated bottoms and cobble riffles.	Yes	No	No
Western bumble bee (<i>Bombus occidentalis</i>)	UR	SOC	SGCN	BLM SSS	Foraging and reproductive habitat in open habitat with flowering plants (e.g., open grasslands, parks, gardens, sagebrush steppe, and meadows), with nests occasionally found aboveground in abandoned ground-nesting bird nests, stumps, and logs.	Yes	No	No
Western regal fritillary (<i>Argynnis idalia occidentalis</i>)	PT	NA	SGCN	BLM SSS	Foraging and reproductive habitat in tall grass and dry or wet prairies, meadows, and wet fields with flowering plants and violets (larval host plant).	Yes	No	Yes
Whitney's underwing (<i>Catocala whitneyi</i>)	NA	NA	SGCN	NA	Occurs in dry-mesic prairies, woodland edges, savannas, shrublands, and other habitats where its host plant, leadplant, is found.	Yes	No	No

Species ^{a,b}	Federal Status	Montana Status	North Dakota Status ^c	Other Special Status ^d	Habitat Description	Potential Habitat in the Project Area	Documented to Occur in the Project Area: Montana ^e	Documented to Occur in the Project Area: North Dakota ^e
Yellow-banded bumble bee (<i>Bombus terricola</i>)	NA	SOC	SGCN	NA	Prefers undisturbed grasslands, meadows, and woodland edges.	Yes	No	No
Yellow bumble bee (<i>Bombus fervidus</i>)	NA	NA	SGCN	NA	Occurs in native and planted grasslands, forest edges, along roadsides, and even suburban and agricultural areas where floral resources are available.	Yes	No	No

Source: Grid United 2024b, 2026e

BCC = Birds of Conservation Concern; BGEPA = Bald and Golden Eagle Protection Act; BLM = Bureau of Land Management; EIS = Environmental Impact Statement; IPaC = Information for Planning and Consultation; LE = Listed Endangered; LT = Listed Threatened; MTNHP = Montana Natural Heritage Program; NA = not applicable; PE = Proposed Endangered; PT = Proposed Threatened; RFSS = Regional Forester's Sensitive Species; SCP = Species of Conservation Priority; SGCN = Species of Greatest Conservation Need; SGIN = Species of Greatest Information Need; SOC = Species of Concern; SSS = Special Status Species; SWAP = State Wildlife Action Plan; UR = Under Review; USDA = U.S. Department of Agriculture
Notes:

^a Fish species are not included in this table but can be found in Table 3.14-2.

^b State sensitive wildlife species are listed in the MTNHP Animal Species of Concern Report (MTNHP 2024) and the approved 2025 SWAP in North Dakota (NDGFD 2026). Due to the size of these species lists, the potential for a species to occur in the Project Area was based on county-level occurrence data (Montana Field Guide 2024) and/or the species' known range within a Project county (NDGFD 2026).

^c The Draft EIS used the 2015 North Dakota SWAP (Dyke 2015) to determine species of concern for North Dakota (i.e., SCP). The Final EIS has been updated to align with the 2025 North Dakota SWAP (NDGFD 2026), which updated designations to SGCN.

^d The BLM SSS lists provided to Montana/Dakotas Leadership in Instruction Memorandum No. MT-2020-012 (March 16, 2020) included an expiration date of September 30, 2023. As there is no updated list at this time, the 2020 list has been used. (Grid United 2026d)

^e Occurrence information is based on publicly available data, natural heritage inventory data, and/or survey data. Common species are not typically included in occurrence datasets but may still occur within the Project area.

^f BCC identified as having potential to occur within 1 mile of the Project area identified by the U.S. Fish and Wildlife Service IPaC tool.

^g The whooping crane (*Grus americana*) was determined to be present by the USFWS (Pearse et al. 2018).

B.3.3. Chapter 4

Table 4.1-1
Cumulative Impact Analysis Areas by Resource

Resource	Cumulative Impact Analysis Area
Air Quality	All counties crossed by the Project
Groundwater Hydrology	HUC 8 watershed crossing the five principal aquifers ^a within the regional aquifer system crossed by the Project
Surface Water Hydrology	HUC 8 watersheds crossed by the Project
Minerals and Geology	Project area
Soils	Project area
Vegetation	Project area
Fisheries	HUC 8 watersheds crossed by the Project
Wildlife	<ul style="list-style-type: none"> • 10-mile buffer of the Project area for sage grouse and terrestrial species ^b • 20-mile buffer of the Project area for migratory birds and eagles ^c
Public Health and Safety	<ul style="list-style-type: none"> • EMF: 100-foot buffer on either side of the proposed centerline and limits of disturbance surrounding all other proposed structures • Public access and traffic safety: Area within 0.5 mile of Project area
Land Use and Recreation	Area within 0.5 mile of Project area
Visual and Aesthetics	Area within 15–20 miles of Project infrastructure
Noise	Area within 0.5 mile of Project area
Socioeconomics ^d	<p>All counties crossed by the Project and the following counties:</p> <ul style="list-style-type: none"> • Montana: Big Horn, Treasure, Powder River, Prairie, McCone, Dawson, Carter • North Dakota: Adams, Bowman, Stark, Dunn, Burleigh • South Dakota: Harding County and Perkins County • Wyoming: Sheridan County
Cultural/Tribal/Historic Resources	Physical and non-physical APE

APE = Area of Potential Effects; EMF = electromagnetic field; HUC = hydrologic unit code

Notes:

^a Unconsolidated Quaternary age deposit aquifers, and the Lower Tertiary, Upper Cretaceous, Lower Cretaceous, and Paleozoic aquifers

^b This distance is consistent with individual greater sage-grouse home ranges in eastern Montana (MSGWG 2005). This distance was selected because sage grouse and other birds within the study area generally have home range daily flight distances of less than 10 miles.

^c This distance is based on the average daily flight range of bald and golden eagles, which can vary from approximately 18 to 200 miles, and the Project's capacity to affect these species in cumulation with other projects, which would decrease with distance (Wheat et al. 2017).

^d Socioeconomic analysis area includes counties crossed by the Project, as well as counties that have communities and transient housing (e.g., hotels, lodges, campgrounds) within an estimated 90-minute drive of the Project area.

Table 4.1-2
Past, Present, and Reasonably Foreseeable Activities for the Cumulative Impact Assessment

Activity	Location(s) State: County	Distance to Project Area	Description	Timeframe	Overlapping Resources	Source
Oil and gas development	<ul style="list-style-type: none">Montana: FallonNorth Dakota: Golden Valley, Slope, Hettinger, and Morton	<ul style="list-style-type: none">Between MPs 148 and 153, Project is located within 200 feet of seven wells in the Cedar Creek production field in the oil-rich Williston BasinHVDC Transmission Line crosses the Cedar Creek Anticline, a major hydrocarbon-producing geological featureAdditional crossings occur in Slope County, North Dakota, within areas actively operated by Chesapeake Energy	Activities associated with oil and gas areas include seismic surveys, clearing and grading the site for access roads and well pads, construction of associated infrastructure such as water supply and storage tanks, mobilizing drilling rigs and equipment, drilling and installing wells	Cedar Creek gas field in operation since 1929; oil production in operation since 1951; production ongoing	<ul style="list-style-type: none">Air QualityGroundwater HydrologySurface Water HydrologyMinerals and GeologySoilsVegetationFisheriesWildlifePublic Health and SafetyVisual and AestheticsCultural/Tribal/Historic ResourcesNoiseSocioeconomics	MBOGC 2024; NDGS Undated
Rosebud Coal Mine	Montana: Treasure and Rosebud	Multiple coal mining operations in different stages in Areas A, B, C, D, and F north and west of the Colstrip Substation and Colstrip Powerplant	<ul style="list-style-type: none">Expansion of Area B, a 9,108-acre expansion approved 2022; permit vacated by Montana Supreme Court in 2023Partial Bond Release for Area C filed in 2025Partial Bond Release for Area D filed in 2023Expansion of Area F, a 6,773-acre area for coal mining in development	<ul style="list-style-type: none">In operation since 1968Expansion of Area F began in 2019 with estimated completion of the Proposed Alternative in 2039	<ul style="list-style-type: none">Air QualityVisual and AestheticsSocioeconomicsWildlife	OSMRE 2024; MTDEQ Undated_a; Davin 2022; Eggert 2023
BNI Center Mine	North Dakota: Oliver	At its closest proximity, the active mine site is between 1–2 miles from the transmission line	Coal mining operation	BNI has owned and operated the Center Mine since 1970; current life of mine is anticipated to extend through 2037	<ul style="list-style-type: none">Air QualityGroundwater HydrologySurface Water HydrologyPublic Health and SafetyCultural/Tribal/Historic ResourcesVisual and AestheticsSocioeconomicsWildlife	OSMRE 2023
Diamond Willow Wind Project	Montana: Fallon (Baker)	About 9 miles south of the HVDC Transmission Line at MP 151	30 MW wind farm with 12 wind turbines	In operation since 2007	<ul style="list-style-type: none">Air QualityVisual and AestheticsSocioeconomicsWildlife	GridInfo 2025

Activity	Location(s) State: County	Distance to Project Area	Description	Timeframe	Overlapping Resources	Source
Colstrip coal ash pond cleanup	Montana: Rosebud (Colstrip)	About 1 mile southwest of the EHV AC Rosebud Transmission Line at MP 3	<ul style="list-style-type: none">Remediation activities associated with groundwater contamination from leaking coal ash ponds at the Colstrip Steam Electric StationsActivities include expanding the existing groundwater capture system, dewatering the ash ponds, and installing clean water injection wells to help flush contaminants and restore groundwater quality	Began in 2012 and ongoing as of 2025	<ul style="list-style-type: none">Air QualityGroundwater HydrologyCultural/Tribal/Historic ResourcesSocioeconomicsWildlife	MTDEQ Undated_b
NextEra Clearwater Wind Energy Center	Montana: Rosebud, Custer, and Garfield	About 34 miles north of the HVDC Transmission Line at MP 43	750 MW wind farm	In operation since 2023	<ul style="list-style-type: none">Air QualitySocioeconomics	NextEra 2025a
Pipeline Replacement Project	North Dakota: Hettinger	About 35 miles south of the HVDC Transmission Line at MP 259	Montana-Dakota Utilities Co. replacing existing natural gas mains and services in 2024	In operation since May 2024 and anticipated to be completed December 2024	<ul style="list-style-type: none">Air QualityPublic Health and SafetySocioeconomics	Montana-Dakota Utilities Co. 2024
NextEra Oliver Wind IV Project	North Dakota: Oliver, Mercer, and Morton	About 9.5 miles northwest of the EHV AC Oliver Transmission Line at MP 50	202 MW wind farm with 71 wind turbines	In operation since fall of 2024	<ul style="list-style-type: none">Air QualityVisual and AestheticsSocioeconomicsWildlife	NextEra 2025c
I-94 Interchange (Exit 161) Reconstruction Project and NDDOT Statewide Transportation Improvement Program Projects	North Dakota: Burleigh (Dickinson and Bismarck NDDOT districts)	About 14 miles east of the EHV AC Oliver Transmission Line at MP 28	Interchange reconstruction on I-94 and major and minor rehab and preventive maintenance to major roads in all counties	<ul style="list-style-type: none">I-94 Interchange Reconstruction Project: Spring 2024 to summer 2026Maintenance projects: 2024 to 2027	<ul style="list-style-type: none">Air QualitySocioeconomicsWildlife	NDDOT 2023, 2025
Intermountain Infrastructure Group Buried Fiber Optic Telecom Project	<ul style="list-style-type: none">Montana: Multiple countiesNorth Dakota: Multiple counties	<u>Within Montana</u> <ul style="list-style-type: none">Installation from the southeast corner of the state to the Montana/Idaho border, loosely following the I-90 corridor and MT 200 route in northwest MontanaCrosses Wibaux, Custer, Prairie, Rosebud, Treasure, and Yellowstone countiesAbout 3 miles of the HVDC Transmission Line at MP 42 (closest proximity) <u>Within North Dakota</u> <ul style="list-style-type: none">Crosses Grant, Morton, Stark, Slope, Golden Valley, and Billings countiesHettinger County also likely crossed by this projectLikely crosses at MP 30 of the EHV AC Oliver Transmission Line	Installation of new fiber optic lines	<ul style="list-style-type: none">Montana section under construction; anticipated completion in 2025North Dakota section in permitting process; construction not started	<ul style="list-style-type: none">Air QualityGroundwater HydrologySurface Water HydrologyMinerals and GeologySoilsCultural/Tribal/Historic ResourcesSocioeconomicsWildlife	Grant County 2025

Activity	Location(s) State: County	Distance to Project Area	Description	Timeframe	Overlapping Resources	Source
Silverthorn Wind Farm	Montana: Rosebud and Treasure	About 30 miles northwest of the EHV AC Rosebud Transmission Line at MP 5	Planned 600 MW facility south of I-94	Scheduled to begin construction in 2025	<ul style="list-style-type: none">• Air Quality• Socioeconomics	Silverthorn Renewables 2023
Oliver County Substation ^a	North Dakota: Oliver	Overlaps Project area (Project ties into the substation)	A 345-kV/230-kV facility being proposed and developed by Minnesota Power as a part of the Minnesota Power HVDC Modernization Project	Scheduled to begin construction in fall 2025	<ul style="list-style-type: none">• Air Quality• Groundwater Hydrology• Surface Water Hydrology• Minerals and Geology• Soils• Fisheries• Wildlife• Public Health and Safety• Cultural/Tribal/Historic Resources• Land Use and Recreation• Visual and Aesthetics• Noise• Socioeconomics	Grid United 2024; NDPSC 2024
Cabin Creek Lateral Pipeline Project and Cabin Creek EOR (Cabin Creek Project)	Fallon County, Montana	<ul style="list-style-type: none">• Pipeline crosses at MP 148• EOR project area is 10.5 miles north of HVDC Transmission Line at MP 144	<ul style="list-style-type: none">• Approximately 25.8-mile-long liquid (dense phase) CO₂ pipeline and associated facilities and infrastructure areas encompasses 290.95 acres in Fallon County, Montana• Cabin Creek EOR Unit Development project area encompasses approximately 10,169 acres in Fallon County, Montana	<ul style="list-style-type: none">• Construction concurrent with Project construction• North Plains Connector Project may occur between 2025 and 2029	<ul style="list-style-type: none">• Air Quality• Noise• Groundwater Hydrology• Visual and Aesthetics• Socioeconomics• Wildlife• Socioeconomics• Cultural/Tribal/Historic Resources	BLM 2025
AES Sundog Solar Development	North Dakota: Bowman	About 20 miles south of the HVDC Transmission Line at MP 217	Approximately 1,600-acre, 250 MW solar development to be constructed on private land	<ul style="list-style-type: none">• Scheduled to begin construction in 2026• Scheduled to begin operation in 2027	<ul style="list-style-type: none">• Socioeconomics• Visual and Aesthetics• Wildlife	AES 2025
NextEra New Salem Wind I&2 Project	North Dakota: Oliver, Mercer, and Morton	About 13 miles north of the HVDC Transmission Line at MP 323	200 MW wind farm with 110 wind turbines	Scheduled to begin operation in 2027	<ul style="list-style-type: none">• Air Quality• Groundwater Hydrology• Surface Water Hydrology• Visual and Aesthetics• Socioeconomics• Wildlife	NextEra 2025d
NextEra Glendive Wind Project	Montana: Dawson (near the town of Glendive)	About 50 miles north of the HVDC Transmission Line at MP 133	800 MW wind farm	Scheduled to begin operation in 2028	<ul style="list-style-type: none">• Socioeconomics	NextEra 2025b

Activity	Location(s) State: County	Distance to Project Area	Description	Timeframe	Overlapping Resources	Source
Colstrip Switchyard Upgrades	Montana: Rosebud (Colstrip)	Overlaps Project area (Project ties into the substation)	Addition of new breakers	Construction concurrent with Project construction (scheduled to begin in 2028), with completion by Project operations (scheduled completion in 2032)	<ul style="list-style-type: none">• Air Quality• Groundwater Hydrology• Surface Water Hydrology• Minerals and Geology• Soils• Fisheries• Wildlife• Public Health and Safety• Cultural/Tribal/Historic Resources• Land Use and Recreation• Visual and Aesthetics• Noise• Socioeconomics	Amended NOI
Residential subdivisions	<ul style="list-style-type: none">• Montana: Custer• North Dakota: Morton, Burleigh (Bismarck)• Wyoming: Sheridan	Nearest developed subdivision to the Project area is 7 miles away (Project does not cross it)	Eight residential subdivisions	Subdivisions in various stages of approval	<ul style="list-style-type: none">• Air Quality• Socioeconomics• Wildlife	Custer County 2025; Morton County Undated_a, Undated_b
Various road construction projects	North Dakota: Burleigh (Bismarck)	About 14 miles east of the EHV AC Oliver Transmission Line at MP 24	Various road construction projects	Ranging from construction to planned for coming years	<ul style="list-style-type: none">• Socioeconomics• Wildlife	Burleigh County 2025
Ranching/livestock grazing activities and vegetation monitoring studies	<ul style="list-style-type: none">• Montana: Custer, Fort Keogh• North Dakota: All counties crossed	Project area crosses and adjacent to activities	Ongoing ranching/grazing activity and vegetation monitoring studies	Ongoing	<ul style="list-style-type: none">• Groundwater Hydrology• Surface Water Hydrology• Minerals and Geology• Soils• Vegetation• Fisheries• Wildlife• Cultural/Tribal/Historic Resources	C. Mehaffie, Pers. Comm., April 14, 2025

AC = alternating current; CO₂ = carbon dioxide; EHV = extra-high voltage; EOR = enhanced oil recovery; HVDC = high-voltage direct current; I-94 = Interstate 94; kV = kilovolt; MP = Milepost; MT 200 = Montana Highway 200; MW = megawatt; NDDOT = North Dakota Department of Transportation; NOI = Notice of Intent

Notes:

^a Since the publication of the Draft EIS, the developer of the Oliver County Substation has given the substation the formal name of East Oliver Substation, published in the developer’s application to the North Dakota Public Utility Commission (PU-24-381). Prior to the formal name change, the substation has been referred to throughout the EIS as the Oliver County Substation and is still referred to as such. (Grid United 2026)

B.3.4. Chapter 5

Table 5-1
Comparison of Project Impacts by Alternative

Resource Area/Impact	No Action Alternative	Proposed Alternative
Air Quality		
Ambient Air Quality Standards	No change from current condition.	Air emissions resulting from the construction activities are expected to be localized and short-term, resulting in negligible direct and secondary impacts on air quality in the area. The Proposed Alternative would have negligible operational emissions and, therefore, is not expected to have impacts on air quality.
Regional Haze/Visibility	No change from current condition.	Haze precursor air emissions resulting from the construction activities are expected to be localized and short-term, resulting in negligible direct and secondary impacts on regional haze and visibility in the area and the closest Class I areas (Northern Cheyenne Reservation and Theodore Roosevelt National Park). No emissions are expected during operations; therefore, there would be no operational impacts on regional haze/visibility.
Chemical Deposition	No change from current condition.	Air emissions resulting from the construction activities are expected to be localized and short-term, resulting in negligible direct and secondary impacts on acidic deposition in the area and the closest Class I areas (Northern Cheyenne Reservation and Theodore Roosevelt National Park). No emissions are expected during operations.
GHG Emissions	No change from current condition.	GHG (CO ₂ e) emissions resulting from the construction activities and operations of the Project are expected to be negligible direct, secondary, and cumulative; localized; and short-term in nature.
Cultural/Tribal/Historic Resources		
Cultural Resources	No change from current condition.	If the Project were to have an adverse effect on historic properties, per the Programmatic Agreement, an HPTP would be developed to address the adverse effects. Potential physical impacts would be direct, localized, permanent, and of varying degrees specific to the sensitivity of the resource and how its ongoing use and/or research value would be impacted. For physically impacted historic properties, mitigation measures would be developed through the Programmatic Agreement. The potential for non-physical impacts on historic properties is anticipated to be primarily visual and are in the process of being evaluated. Potential minor acoustic impacts are anticipated during construction and operations. Potential non-physical visual impacts would last for the duration of the Project, and the degree of significance would vary per resource. Should any significant non-physical impacts on historic properties be identified, they would be avoided if possible or an appropriate treatment would be developed per the HPTP.
Public Health and Safety		
EMFs	No change from current condition.	EMFs generated during the construction and operations of the Project would be localized, permanent (for the life of the Project), and negligible. No significant EMF impacts are expected from construction or operations of the Proposed Alternative. The EMF levels associated with the Project would result in no impacts on people with implantable medical devices, audible noise levels, or radio and television services. With the implementation of appropriate conductors across various routes, operational impacts due to radio interference would be direct and secondary, permanent, and localized.
Stray Voltage	No change from current condition.	Impacts due to stray or induced voltage would be reduced by proposed implementation of safety measures. To minimize the impacts of electric fields, metal buildings, fences, or other large permanent conductive objects near the AC portions of the proposed transmission line should be grounded to prevent excessive discharge. For Project-related vehicles operating within or near the ROW, the Proponent would ensure all vehicles are properly grounded. Therefore, no impacts from stray or induced voltage during construction or operations are anticipated.
Public Services	No change from current condition.	Public service impacts during construction would be direct, localized, and short-term. The Proposed Alternative may require temporary suspension of nearby utility services (e.g., water, cable, transmission) during construction. There would also be direct, localized, and short-term traffic disruptions for construction occurring near public roadways.
Corona and Surface Gradient	No change from current condition.	Corona analysis indicated that the permanent impacts of the Proposed Alternative would be localized, and negligible and, therefore, would not have an impact on public health and safety.
Erionite Features	No change from current condition.	The HVDC Transmission Line crosses erionite testing radii, and erionite is known to occur in the geologic formations crossed in Slope and Hettinger counties, North Dakota. Erionite could be encountered during ground disturbance during construction of the Proposed Alternative. If lands contaminated with erionite are encountered during construction, the Proponent would implement established BMPs, which include notifying contractors of the potential for erionite so that the contractor can implement the necessary measures to protect their employees, and using water to reduce dust, particularly when working within erionite testing radii. If erionite is encountered, impacts could be direct, localized, and short-term; however, impacts are anticipated to be mitigated through BMPs. During operations, there would be no ground disturbance and no impacts from erionite features are anticipated.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Agricultural Operations	No change from current condition.	The Proposed Alternative permanent transmission lines would cross 311.0 miles of grasslands and shrublands (160.1 in Montana and 151.0 in North Dakota), and 97.0 miles of agricultural lands (12.6 miles in Montana and 84.4 miles in North Dakota). Safety risks from the Project on agricultural operations would occur during loading, unloading, or repairing irrigation pipes near transmission structures, where moisture and contact could cause electrical shock; avoiding these activities within the ROW minimizes this risk. With standard safety practices and awareness of transmission line clearances, permanent impacts on irrigation would be direct and localized.
Floodplains	No change from current condition.	Floodplain impacts during construction would be direct, localized, and short-term to permanent. The implementation of construction best practices for floodplain areas would prevent impacts on public health and safety.
Extreme Weather Interactions	No change from current condition.	There is the potential for direct, localized, short-term to permanent health and safety hazards caused by extreme weather events during construction; however, these would be minimized through the implementation of safety practices, and no impacts are anticipated. During operations, the Proposed Alternative would be designed to minimize the risk of structural failure under extreme weather conditions and would be regularly inspected and maintained. The Proponent has incorporated mitigation measures to address hazards such as wildfire risk, including vegetation management within the ROW, routine inspection and preventative maintenance programs, and coordination with applicable agencies on emergency response. Therefore, impacts from extreme weather interactions would be short-term and localized.
Groundwater Hydrology		
Groundwater Quantity	No change from current condition.	Construction activities such as access road creation, surface grading, and excavation for foundation installation may temporarily affect groundwater by altering stormwater flow and precipitation infiltration, resulting in direct and secondary, medium- to long-term localized, impacts on groundwater quality during Project construction. Approximately 7.1 million gallons of water would be needed for concrete batching, and approximately 191,000 gallons of water per mile would be needed for access roads, pulling and tensioning site, and structure pad dust control based on the anticipated construction duration, which would be obtained from municipal sources. If additional water is needed, it would be supplied by existing water rights holders via groundwater wells near the Project. By sourcing water from municipal sources or, if necessary, from existing water rights holders, use of groundwater in the Project area would mitigate impacts on groundwater quantity. Groundwater quantity impacts resulting from the construction activities would be direct, short-term, and localized. There are 57 private wells identified within 150 feet of Project impacts areas that could be damaged during construction. BMPs would be in place to avoid the wells and surface disturbance near wells would be monitored. If any wells are impacted, impacts would be direct, short-term, and localized. Dewatering may be necessary during construction, which would comply with necessary permits and water quality standards. Direct and secondary impacts on groundwater due to construction dewatering would be short-term, localized, and minimal. The Proposed Alternative would not result in operational groundwater quantity or quality impacts and, therefore, is not expected to have an impact on overall groundwater conditions in the region.
Groundwater Quality	No change from current condition.	Unintended leaks or spills of petroleum-based fluids during construction activities could potentially directly affect groundwater quality to varying degrees. With implementation of a Project-specific Spill Prevention and Response Plan and Hazardous Materials and Waste Management Plan (Appendix E), impacts due to a petroleum spill or other hazardous material spill would be avoided or mitigated and are not anticipated.
Surface Water Hydrology		
Watersheds	No change from current condition.	Temporary and permanent surface water impacts due to construction activities and changes in land cover would not be detectable at a watershed scale. Within each HUC 8 watershed crossed by the Project, the total impacts due to tree clearing and other construction activities would be <0.1% of the watershed areas. There are no watershed impacts anticipated during operations.
Floodplains	No change from current condition.	The Proposed Alternative would have direct, localized, medium- to long-term temporary impacts on approximately 13.3 acres of 100-year floodplains (approximately 9.0 acres in Montana and 4.3 acres in North Dakota) during the construction phase from overland travel, access roads, and temporary work areas. There would be approximately 19.4 acres (approximately 18.6 acres in Montana and 0.8 acres in North Dakota) of direct, localized, permanent impacts on 100-year floodplains during operations from tree removal, structure placement, and access roads. The Proposed Alternative would follow local floodplain ordinances and implement required BMPs to minimize impacts on floodplains.
Waterbodies	No change from current condition.	The Proposed Alternative would result in direct, localized, short- to long-term temporary impacts on approximately 1.0 acre of waterbodies (approximately 0.6 acre in Montana and 0.4 acre in North Dakota) during the construction phase from access roads and temporary work areas. There would be secondary, medium-term and permanent impacts on waterbodies from the clearing of trees adjacent to waterbodies within the maintained ROW and for temporary access roads and work areas. The Proposed Alternative would result in direct, localized, permanent impacts on approximately 0.6 acre of waterbodies (approximately 0.6 acre in Montana and less than 0.1 acre in North Dakota) through tree clearing and establishment of access roads, which would persist through Project operations. All waterbody impacts would occur under state and federal permit requirements.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Wetlands	No change from current condition.	The Proposed Alternative would result in direct, localized, medium-term temporary impacts on approximately 11.6 acres of wetlands (approximately 11.6 acres on PEM wetlands [2.5 in Montana and 9.1 in North Dakota]) during the construction phase from temporary construction activities such as timber matting or culverts for construction work areas or access roads. There would be secondary, medium-term and permanent impacts on wetlands from the clearing of trees adjacent to wetlands for temporary access roads and work areas and within the maintained ROW. The Proposed Alternative would result in direct, localized, and permanent impacts on 0.7 acre of wetlands (0.5 acre of PEM wetlands in Montana and 0.1 acre of PEM wetlands in North Dakota, and the conversion of less than 0.1 acre of PFO wetland in North Dakota to PEM/PSS wetlands through tree removal within the maintained Project ROW), which would persist through Project operations. All wetland impacts would occur under state and federal permit requirements, including meeting compensatory mitigation requirements.
Public Surface Water Sources and Source Water Protection Areas	No change from current condition.	The Proposed Alternative would not result in impacts on public surface water sources and source water protection areas due to the location of Project impact areas relative to the surface water intake locations.
Minerals and Geology		
Geologic, Mineral, and Paleontological Resources	No change from current condition.	Impacts on mineral and paleontological resources resulting from the construction activities are expected to be direct, localized, and short-term, resulting in negligible impacts on access and development of existing mineral resources and the preservation of paleontological resources in the Project area. There would be direct, localized, permanent impacts on shallow bedrock, including a conservative maximum amount of blasting impacts on approximately 747.0 acres for construction of structures, facilities, and access roads. Operations would have minor impacts on geologic, mineral, and paleontological resources. However, ROW operations would not have an impact on the overall availability of these materials as they are abundant throughout surrounding areas. Any direct impacts on paleontological resources would be mitigated through implementation of the Paleontological Resources Management and Mitigation Plan (Appendix E). While mining activities would likely not be permitted within the maintained ROW and coal mining activities would be limited within 35 feet of the transmission line infrastructure, the Proposed Alternative construction and operational phases are not expected to have long-term impacts on the availability of construction materials or future mining activities in the region.
Geologic Hazards	No change from current condition.	Geologic hazards (faults, seismicity, and soil liquefaction) are not anticipated to affect the Proposed Alternative. Approximately 386.8 acres of Project impact areas cross terrain with a slope percentage of 30% or higher. To mitigate landslide risks, the Proponent would place structures to avoid slopes greater than 30% and areas along streams and drainages. Additionally, the Proponent would conduct geotechnical surveys to assess subsurface suitability to ensure that the subsurface is geotechnically suitable for construction and operations of the Proposed Alternative. The Proponent would design structures to withstand and not exacerbate landslide activity.
Land Use and Recreation		
Land Ownership and Land Cover	No change from current condition.	Lands crossed by the Proposed Alternative transmission lines would be subject to temporary easements for construction work areas and temporary access roads and permanent easements for the transmission line ROW and permanent access roads. Ownership of the land would remain with the current owner. Construction of the proposed converter stations and switchyard would result in both temporary and permanent conversion of land from Grassland/Shrubland or Agricultural land to Developed land. The Proposed Alternative would have permanent, direct, localized impacts on approximately 1,078.1 acres of land (830.3 in Montana and 247.7 acres in North Dakota). Construction of the Proposed Alternative would have a medium-term, direct, localized impact on land cover categories. Operations would have a permanent, direct, localized impact on land cover categories. Project construction activities along the transmission lines would have 3,917.9 acres (1,632.0 in Montana and 2,285.9 in North Dakota) of direct, localized, and short-term impacts on grasslands, shrublands, and agricultural lands, resulting in some temporary interruptions to farming and ranching activities. During operations, the Proposed Alternative would result in direct, localized, and permanent impacts on 408.0 miles of shrublands, grasslands, and agricultural lands (172.7 in Montana and 235.4 in North Dakota). During operations, certain land use activities within the permanent ROW, such as grazing and farming, would generally be allowed to continue while structure placement may be restricted. Periodic disruptions to agricultural activities within the permanent ROW may occur during transmission line inspections, vegetation maintenance, or facility repairs.
Existing Residential and Commercial/ Industrial Development	No change from current condition.	The Project has been routed to avoid impacts on existing structures. Residences near the Project would be subject to direct and secondary, medium-term, localized noise, dust, visual impacts and road traffic during construction. Project operations would not disrupt or constrain residential land uses; however, depending on distance and topography, operations could result in a permanent, direct, and localized visual impact on existing residential developments. Construction and operations would have no impact on existing commercial or industrial development.
Planned Residential and Commercial Development	No change from current condition.	Based on county planning documents, the Proposed Alternative would not conflict with land use plans or policies.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Other Land Uses	No change from current condition.	Mining impacts are addressed in Section 3.7, Minerals and Geology, of the EIS. Air transportation/airports are addressed under Transportation in Section 3.10, Socioeconomics, of the EIS. The Project is not anticipated to affect the Gold Creek Cellular of Montana Limited Partnership/Verizon cell tower due to its distance from Project impact areas.
Recreational and Managed Lands	No change from current condition.	Construction activities would result in short-term, direct, localized impacts on recreational and managed lands; however, the degree of impact would vary depending on the location of the users relative to construction activities. Construction activities may require users to avoid areas due to safety or site restrictions. Once construction activities are completed and temporary work areas are restored, recreational activities would be allowed to resume to the degree permitted prior to construction. The Project would permanently affect approximately 50.3 acres of Montana DNRC trust recreational lands and 1.8 acres of North Dakota trust recreational lands. While most recreation activities on trust lands would be able to continue during operations, some areas would be impacted where land uses are modified for Project infrastructure. In Montana, the Project would permanently affect approximately 28.8 acres of BLM recreational lands resulting in direct, permanent, localized impacts. In North Dakota, the Project would permanently affect approximately 3.8 acres of NFS recreational lands, resulting in direct, permanent, localized impacts.
U.S. Agriculture Research Lands	No change from current condition.	The Project would have direct, medium-term, localized impacts where it would permanently affect 25.0 acres of USDA ARS land at Fort Keogh in Custer County, Montana. The Proponent has coordinated with the USDA ARS to site Project components in areas where impacts on research activities would be limited. Impacts from operations would be permanent, direct, and localized to areas where Project components would alter existing land use within Fort Keogh.
Scenic Rivers	No change from current condition.	The HVDC Transmission Line crosses the Little Missouri River in Slope County, North Dakota, at approximately MP 187.5. Primary impacts from construction and operations would be changes to the viewshed from the transmission infrastructure. Impacts would be direct, localized, and permanent.
Visual and Aesthetics		
Visual Resources	No change from current condition.	The Project’s transmission line segments would permanently affect visual conditions along the Project corridor by introducing tall vertical structures and horizontal linear conductors that would be visible from up to approximately 20 miles away. While the impact on visual conditions would be permanent, visual impacts would diminish as distance away from the Project increases. The increased footprint of the Colstrip Substation would be noticeable from the town of Colstrip and surrounding municipal park areas. The HVDC Transmission Line crosses a total of 9.7 miles of BLM land, including 0.6 mile on BLM VRM Class II lands, 2.4 miles on BLM VRM Class III lands, and 6.7 miles on BLM VRM Class IV land. Project features (temporary and permanent access roads; turnaround areas; guard structure pads; pulling sites; structure footprints; and structure pads) cross a total of 168.8 acres on BLM land (28.0 acres on BLM Class II land, 30.2 acres on BLM VRM Class III land, and 110.7 acres on BLM VRM Class IV land). Additionally, the Project would introduce bare earth and/or gravel access roads to structures during construction and operations. The overall visual impact from the Project’s transmission line segments would be characterized as a direct, permanent impact that would affect regional conditions. The overall visual impact from construction and operational phases of the Proposed Alternative would also be characterized as direct, permanent impacts that would affect regional conditions.
Socioeconomics		
Population Increase	No change from current condition.	The Proponent estimates a construction period of 3 to 4 years with a peak temporary workforce of 800 workers. Workers residing temporarily in the socioeconomic analysis area could produce a medium-term increase in population within socioeconomic analysis area towns and cities during construction. Workers assigned to the Rosebud County Converter Station, Morton County Converter Station, and Morton County Switchyard are anticipated to work at these sites for the full construction period, resulting in a medium-term population increase within commuting distance of these facilities. Given the current populations of Rosebud, Custer, and Morton counties, impacts on population levels are anticipated to be minimal. The remaining workers would be distributed along the proposed transmission lines, resulting in an insignificant population change among the multiple towns and cities along the routes. Thus, construction would have a direct, medium-term, regional impact on the socioeconomic analysis area population; and operations would have a direct, long-term, regional impact on the socioeconomic analysis area population. Population change would have both beneficial and adverse impacts, resulting in beneficial economic activity and labor force resources within the Project area, as well as impacts due to demand for public services and potential competition for strained housing resources.
Economy, Employment, and Income	No change from current condition.	Direct economic benefits within the socioeconomic analysis area would include wages paid to workers and purchase of Proposed Alternative supplies and services from socioeconomic analysis area businesses to support construction. The Proponent’s Economic Impact Analysis estimates the Proposed Alternative would generate an average of 2,055 jobs annually in Montana and North Dakota during a 3-year construction period (Bureau of Business and Economics Research, University of Montana 2025). Construction may occur for an additional year with the total economic impacts distributed over the longer time period, as noted in the Proponent’s Economic Impact Analysis. Operations would result in two to four full-time equivalent jobs within the socioeconomic analysis area, as well as periodic contracts or hiring of line crews for transmission line maintenance. Construction would result in beneficial, direct and secondary, regional, medium-term impacts on economics, employment, and income in the socioeconomic analysis area, while operations would result in negligible beneficial impacts.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Housing	No change from current condition.	Housing impacts would result from increased demand for rental or for-sale housing due to the influx of workers. Given the shortage of housing reported by state and local agencies, housing needs during construction could strain an already limited supply of affordable rental housing. The supply of hotel and motel rooms within the socioeconomic analysis area (supplemented by RV campgrounds) is sufficient to support the Proposed Alternative workforce that chooses this option. Operations would require only two to four full-time equivalent jobs plus periodic line maintenance workers and, therefore, would not affect regional demand for permanent or transient housing. The impact on hotels, motels, and campgrounds is likely to be beneficial in providing demand for the existing businesses. Construction would have a direct, regional, medium-term impact on housing supply and a potential beneficial, direct, regional, medium-term impact on businesses providing transient lodging in the socioeconomic analysis area. Proposed Alternative operations would have neither adverse nor beneficial negligible, direct, long-term impact on housing.
Public Services and Facilities	No change from current condition.	Impacts on schools would be small, as construction workers would most likely be residents of the socioeconomic analysis area or only relocate for short periods of time; thus, most construction workers would be unlikely to temporarily relocate with their families. Due to potential demands on emergency responders, medical services, and law enforcement resources, construction would have a medium-term, secondary, regional impact on public services and facilities. Operations would generate an imperceptible incremental demand for public services and facilities.
Taxes and Revenues	No change from current condition.	Taxes and revenues resulting from construction would include income taxes, goods and services taxes on certain items, and fees. Benefits would accrue to socioeconomic analysis area counties through revenue sharing by Montana or North Dakota or through the state facilities and services funded within the socioeconomic analysis area. Construction would have a beneficial, direct and secondary, regional, medium-term impact on taxes and revenues, while operations would have a beneficial, secondary, regional, long-term impact.
Transportation	No change from current condition.	Construction-generated traffic (e.g., commuting workers) would not result in significantly increased congestion on the highways serving the region. Area highways and roads have capacity to carry increased traffic volumes without congestion. Project construction traffic would be dispersed among the regional highways and even more dispersed on local roads to reach the worksites or contractor yards. The Proponent would provide mitigation for the delays by traffic management measures that include providing road improvements where required by road authorities, mapping authorized transportation routes, providing marking of these routes using signs or flagging, and providing training for field personnel that includes instruction to use only the approved roads and observe speed limits. Project construction would have medium-term, regional, and direct impacts on air traffic due to the use of helicopter transport. Project operations would have no impact on air traffic.
Public Health, Welfare, and Safety	No change from current condition.	Based on the relatively small influx of workers necessary for construction, construction would have a secondary, regional, medium-term impact on public health, welfare, and safety due to the introduction of transient workers from outside the area to small towns and rural areas. Operations would have a beneficial, secondary, regional, permanent impact on public health, welfare, and safety due to the generation of tax revenues that would accrue to county governments, fire districts, schools, and other public service authorities.
Property Value	No change from current condition.	The Project was routed to avoid proximity to residences with transmission line centerlines at least 600 feet from all except one residence within 500 feet of the Morton Transmission Line. Construction and operations are generally not anticipated to affect property values for land use types crossed by the transmission lines. Proposed Alternative transmission lines could potentially have limited secondary, regional, long-term impact on property values for residential properties. The impact on residential properties would vary depending on proximity, topography, and intervening uses and vegetation; and the impact may dissipate with the length of time that the lines are in place.
Soils		
Prime Farmland and Farmland of Statewide Importance	No change from current condition.	Activities required to build the Proposed Alternative in Montana and North Dakota, including vegetation clearing, grading, structure and facility foundation excavations and installation, and movement of construction equipment and materials within the Project impact areas have the potential to affect soils designated as prime farmland or farmland of statewide importance. Approximately 130.7 acres of prime farmland (63.6 in Montana and 67.0 in North Dakota), and 1,492.4 acres of farmland of statewide importance (370.2 in Montana and 1,122.2 in North Dakota) would be temporarily affected. Approximately 17.7 acres of prime farmland (7.3 in Montana and 10.5 in North Dakota), as well as 99.6 acres of farmland of statewide importance (63.2 in Montana and 36.5 in North Dakota) would be permanently affected. Impacts from temporary construction activities on farmland soils would be direct, short- to medium-term, and localized. Where impacts are proposed for permanent structures, access roads, improvements, facilities, and vegetation clearing within the permanently maintained ROW, impacts would be direct, permanent, and localized.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Hydric Soils and Compaction-Prone Soils	No change from current condition.	Impacts on wet soils during periods of water saturation in Montana and North Dakota are expected to occur. Hydric or wet soils are at greater risk of rutting and compaction from movement of heavy equipment. The Proposed Alternative would temporarily affect approximately 32.9 acres of hydric soils (2.1 in Montana and 21.9 in North Dakota) and permanently affect approximately 3.0 acres of hydric soils (2.9 in Montana and 0.1 in North Dakota). The Proposed Alternative would temporarily affect approximately 14.3 acres (2.8 in Montana and 11.5 in North Dakota) and permanently affect approximately 3.1 acres (3.1 in Montana and less than 0.1 acre in North Dakota) of compaction-prone soils. Soil impacts due to construction would be direct, short-term, and localized, and impacts due to operations would be direct, permanent, and localized.
Highly Water Erodible and Wind Erodible Soils	No change from current condition.	Soil loss impacts caused by water and wind erosion in Montana and North Dakota are expected to occur. There would be direct, short-term, localized impacts in temporary work areas with highly water erodible soils (approximately 1,227.9 acres total; 758.0 acres in Montana and 469.8 acres in North Dakota) and highly wind erodible soils (approximately 170.7 acres; 2.4 acres in Montana and 168.3 acres in North Dakota). There would also be direct, permanent, and localized impacts on highly water erodible soils (approximately 154.9 acres total; 141.7 acres in Montana and 13.2 acres in North Dakota) and highly wind erodible soils (1.7 acres total; less than 0.1 acre in Montana and approximately 1.7 acres in North Dakota).
Soils with Low Revegetation Potential	No change from current condition.	Following ground-disturbing activities in Montana and North Dakota, successful restoration and revegetation efforts are essential in maintaining soil productivity by avoiding and minimizing impacts on soils, particularly erosion. The Proposed Alternative would temporarily affect approximately 2,314.0 acres (1,325.7 acres in Montana and 988.3 acres in North Dakota) and permanently affect approximately 240.8 acres (217.6 acres in Montana and 23.1 acres in North Dakota) of soils identified as having a low revegetation potential. Ground disturbance activities would generally be limited to vehicle travel, equipment and material staging, and vegetation clearing and grading that may be necessary for structure pads, wire pulling and tensioning areas, temporary access roads, overland travel paths, and facility sites. Soil impacts from temporary construction activities would be direct, short- to medium-term, and localized. The Proponent has identified specific areas within the ROW where vegetation clearing would be required. Where impacts are proposed for permanent structures, access roads, improvements, facilities, and vegetation clearing within the permanently maintained ROW, impacts would be direct, permanent, and localized.
Rocky and Shallow Bedrock Soils	No change from current condition.	During grading and excavation activities in Montana and North Dakota, construction crews could encounter shallow bedrock soils and rocks on the surface or within the surface soil horizon. The Proposed Alternative would temporarily affect approximately 184.5 (166.0 acres in Montana and 18.5 acres in North Dakota) and permanently affect approximately 11.2 acres (11.1 acres in Montana and less than 0.1 acre in North Dakota) of rocky soil. Approximately 2,644.7 acres (1,132.9 acres in Montana and 1,511.7 acres in North Dakota) of shallow to bedrock soil would be temporarily affected and approximately 217.1 acres (184.0 acres of shallow bedrock soil in Montana and 33.1 acres in North Dakota) would be permanently affected. These impacts are expected to be direct, short-term to permanent, and localized. However, most areas with temporary impacts on soils with shallow bedrock would not require blasting. While the soil itself may have shallow bedrock, the primary construction activity within the soils with shallow bedrock would be overland travel.
Topsoil	No change from current condition.	Construction of the Proposed Alternative would disturb topsoil and subsoil where grading or excavation are required and where heavy equipment travels along access roads. These activities have the potential to cause mixing of topsoil and subsoil, which would result in a loss of soil productivity. With implementation of mitigation measures and BMPs, impacts on topsoil would be direct and secondary, short- to medium-term, and localized.
Slope Gradient	No change from current condition.	Steep slopes can affect constructability, water erosion potential, revegetation efforts, soil compaction, and rutting potential, in addition to other soil properties. The Proposed Alternative transmission lines would cross approximately 3,788.9 acres (79.4%) of soils with a 0 to 15% slope, 560.8 acres (11.7%) of soils with a 15 to 30% slope, and 386.8 acres (8.1%) of soils with 30% or greater slope. The Proposed Alternative would permanently affect approximately 283.3 acres (8.9%) of soils with a 0 to 15% slope, 79.0 acres (1.7%) of soils with a 15 to 30% slope, and 46.2 acres (1.0%) of soils with 30% or greater slope. With implementation of mitigation measures and BMPs, impacts on soils with steep slope gradients from temporary construction activities would be direct, short- to medium-term, and localized. Where impacts are proposed for permanent structures, access roads, improvements, facilities, and vegetation clearing within the permanently maintained ROW, impacts would be direct, permanent, and localized.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Noise		
Sound Levels at Residential/Recreational Receptors	No change from current condition.	Construction activities could result in direct, short-term, localized increases in noise at residential locations that are in closer proximity to the ROW, although only one residence was identified within 500 feet of the centerline of the Morton Transmission Line; all others are greater than 600 feet from the Project centerlines. Helicopter use for line stringing would also result in direct, short-term, localized increases in noise. Blasting, if used, may also result in very short duration increases in noise at any one residence. Construction noise would only occur for brief periods in the vicinity of any residence, and no long-term impacts would occur. Operational noise along the transmission lines could consist of corona noise (i.e., crackling, hissing sound) or aeolian noise (whistling sound). While these noises are expected to be mostly limited to the edge of the ROW, they would be permanent impacts. Operational noise from the Morton County Converter Station would result in minor increases to noise at nearby noise-sensitive locations. No increases in noise would occur at noise-sensitive locations for the Rosebud County Converter Station. Projected noise levels due to operations of both converter stations would remain below the USEPA recommended noise level for NSAs. In addition, the cumulative noise level (converter station plus existing ambient) would also remain below the USEPA recommended level. Overall, noise increases from operations would result in direct, short-term to permanent, and localized impacts.
Vegetation		
Vegetation Loss	No change from current condition.	During construction, the Proponent would remove trees, shrubs, and brush as necessary within the Project impact areas. Vegetation would be cut at or above the ground surface to leave the rootstock intact, which would help maintain soil stability and erosion control. Additionally, trees and tall shrubs would be permanently removed from the ROW for the entire duration of construction and operations of the Proposed Alternative. The Proposed Alternative would disturb approximately 10,741.3 acres of vegetation in temporary impact areas (4,309.1 acres in Montana and 6,431.9 acres in North Dakota) and 812.6 acres in permanent impact areas (722.6 acres in Montana and 89.9 acres in North Dakota) within the Project area. ^a These disturbances during construction would cause direct, localized, and permanent impacts on existing vegetation in the Project area. One USDA Forest Service RFSS plant was documented during surveys and has the potential to be impacted as a result. Other secondary impacts on vegetation could include changes in hydrology, changes in successional stage, and a decline in species structure. No vegetation loss is anticipated during operations aside from the initial clearing of the ROW and subsequent maintenance.
Noxious Weeds and Invasive Species	No change from current condition.	Grading and removal of grassland habitat could introduce invasive species that would decrease forage and habitat quality. Prior to construction, noxious weeds would be marked to limit the infestation to the construction area. Noxious weeds would be treated with herbicide or mowed as needed. BMPs would be installed to prevent the herbicide used from affecting other plants, wildlife species, or waterbody. The duration of impacts on vegetation communities would be influenced by the type of vegetation, the presence of noxious weeds, and growing conditions. Potential introduction of invasive species during construction and lasting into operations would be direct, localized, short-term impact on vegetation.
Dust Deposition	No change from current condition.	Construction of the Proposed Alternative would temporarily increase fugitive dust emissions, particularly in areas with erosion-prone soils where vegetation clearing and heavy equipment operations occur. Factors such as precipitation, wind, and soil disturbance from activities like vehicle movement, excavation, grading, and blasting would contribute to dust generation. As a result, construction activities would have secondary, localized, medium-term impacts on plants due to dust deposition. To mitigate these impacts, the Proponent would use water for dust control on unpaved roads, minimize sediment tracking, and promptly remove soil from paved roadways. In erosion-prone areas, the Proponent would minimize surface disturbances, use soil stabilization practices, and cover material stockpiles to minimize the potential of dust, implementing reclamation efforts to reduce erosion after construction activities. No dust deposition impacts are anticipated during operations.
Fisheries and Wildlife		
Threatened and Endangered Species	No change from current condition.	Sixteen federally listed, proposed, or under review species (15 terrestrial and 1 aquatic) were observed to potentially occur within 1 mile of Project impact areas. Of the 15 terrestrial species, 5 were identified in or adjacent to Project impact areas during the field surveys. The one aquatic species was identified as occurring based on publicly available data, natural heritage inventory data, and/or survey data. Consultation with the USFWS pursuant to Section 7 of the ESA is ongoing for federally listed species. Impacts on species and habitats due to construction and operations are varied and described in rows below.
Special Status Species	No change from current condition.	Montana classifies special status species as SOC, and North Dakota classifies special status species as SGCN or SGIN. A total of 72 terrestrial wildlife species classified as Montana SOC have potential to occur in Project impact areas, of which 29 were identified during surveys. Similarly, 20 North Dakota SGCN and 3 North Dakota SGIN were observed in Project impact areas. Populations of greater sage-grouse are overall declining due to habitat loss and degradation. The species is not listed by the ESA; however, the Montana Greater Sage Grouse Stewardship Act of 2015 and Montana EO 12-2015 are state regulations that provide specific stipulations for the greater sage-grouse. There were 26 terrestrial BLM SSS species identified to have documented occurrences within Project impact areas. Additionally, there were eight documented USDA Forest Service RFSS within Project impact areas. Impacts on special status species due to construction and operations are varied and described in rows below.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Habitat Loss and Degradation	No change from current condition.	Construction of the Proposed Alternative would lead to habitat loss/conversion and degradation through grading and vegetation removal. The Proposed Alternative would permanently affect approximately 832.6 acres and temporarily affect 10,997.9 acres. Approximately 433.7 acres of forest and woodland would be permanently removed due to clearing or conversion to herbaceous grassland in the ROW or for access roads and other permanent Project facilities. The loss of trees could affect bat species that rely on trees for summer roosting habitat. Additionally, 130.2 acres of shrubland would be permanently impacted and 1,384.5 acres would be temporarily impacted. The Project would permanently remove 216 acres of potentially undisturbed (unbroken) grasslands in Montana and 24 acres in North Dakota, and construction activities would also result in up to 1,786 acres of temporary impacts on unbroken grassland (871 acres in Montana and 915 acres North Dakota), leading to impacts on species that rely on this habitat. Habitat loss and degradation due to grading and vegetation removal could result in permanent or long-term impacts that would be direct and secondary, localized, and medium-term to permanent. Greater sage-grouse avoid transmission line corridors; transmission lines have an impact on habitat selection and survival due to avian predators using transmission lines near leks to perch (Lebeau et al. 2019). Impacts on nesting success have been demonstrated up to 1.6 miles from transmission lines (Kohl et al. 2019). Greater sage-grouse avoidance of maintained ROW would be a direct, permanent, and localized impact.
Direct Mortalities	No change from current condition.	Grading and construction activities could lead to the mortality of ground dwelling species such as the black-tailed prairie dog and other small mammals, ground-nesting bird species, reptiles, and amphibians. Additionally, 800 workers would be mobilized across the Project during construction. The additional traffic due to commuting or direct activities could lead to vehicle strikes, resulting in severe injury or mortality of big game species. The Proposed Alternative operational phase could lead to bird species mortality, as they could collide in flight with the lines. Bird species with larger wingspans and slower maneuverability (e.g., cranes, herons, swans, pelicans, and geese) are more susceptible to power line collisions, as are smaller, heavy-bodied birds that are fast flyers (e.g., ducks). Eagles and other raptors are adept flyers, and collision incidents with overhead lines occur with much less frequency than collision incidents involving other bird species. Factors such as increased human activity may flush birds and result in collisions; inclement weather and low-light conditions during bird migration may also increase collision risk. Bat collisions are uncommon and are not listed as a current threat for the northern long-eared bat (<i>Myotis septentrionalis</i>). Increased mortalities resulting from construction and due to collisions with infrastructure during operations could cause direct, localized, and permanent impacts on fisheries and wildlife.
Fragmentation	No change from current condition.	The removal of vegetation and establishment of a maintained ROW would break up contiguous areas of habitat leading to fragmentation. Fragmentation can reduce habitat quality and affect wildlife behavior as some species avoid forest or habitat edges. The majority of Project impact areas are grassland and agricultural and would reestablish more quickly than woody vegetation; however, the permanent conversion of forest and shrubland habitat within the ROW could affect interior forest dwelling species. Habitat fragmentation resulting from construction and operations may result in direct and cumulative, localized, and permanent impacts.
Sensory Impacts from Light and Noise	No change from current condition.	Noise and light impacts would be anticipated from Project construction and operations. Construction-related noise from equipment would exceed ambient noise levels in some areas, potentially altering wildlife behavior and leading to increased stress and mortality. Helicopter use and blasting would generate the highest noise levels; however, they would only be used for brief periods. Noise impacts would be localized and expected to attenuate to ambient levels past 1,000 feet from construction. During operations, there are potentially corona noise (i.e., crackling, hissing sound) and aeolian noise (whistling sound) impacts along the proposed transmission line. Construction would potentially use artificial lighting temporarily, and the proposed converter and switchyard stations would have permanent lighting. Impacts resulting from construction-related noise from equipment, helicopters, and blasting would be direct, localized, and medium-term. Operational increases in noise and light could cause direct, localized, and permanent impacts on fisheries and wildlife.
Stream Crossings and Sedimentation	No change from current condition.	With the exception of Project access roads, Project impact areas have been designed to avoid placing permanent transmission line structures or temporary construction within waterbodies. Existing access roads would be used to the extent practicable. Where public or private roads are not available to access remote segments, the Proponent would construct new access roads, siting them to avoid impacts on waterbodies where possible. Proposed waterbody crossings could include clear span bridges, span bridges with in-water supports, culverts/flumes, vented rock fords, or low water crossings. The Proponent would comply with the design specifications required by federal and state agencies for waterbody crossings and acquire all necessary permits from federal, state, and local agencies in compliance with minimization and mitigation measures for permanent waterbody impacts. Access roads installed during construction could disturb the streambed and cause minor changes in water quality and instream habitat characteristics at the crossing location. These impacts could affect water quality and aquatic life downstream of the immediate location disturbed and thus are localized and regional. Impacts resulting from the waterbody crossings would begin with the start of construction and could be long-term and persist beyond construction throughout the life of the established crossing. If the crossing is one that is used within the streambed itself, there could be ongoing direct impacts on aquatic organisms, particularly benthic invertebrates, through injury or mortality. Secondary impacts may occur due to altered aquatic habitat and substrates, as long as the road is in use. Overall, the impacts of waterbody crossings on fisheries from construction and ongoing operations of access roads that cross waterbodies would be direct and secondary, localized, and short-term to long-term.

Resource Area/Impact	No Action Alternative	Proposed Alternative
Changes in Water Quantity	No change from current condition.	During construction, water would be withdrawn from municipal sources for dust suppression and batching of concrete during construction. If additional water is needed, it would be supplied by existing water rights holders via groundwater wells near the Proposed Alternative. There would be no water withdrawals during operations. No impacts on fisheries from water withdrawals are anticipated.
Changes in Water Quality	No change from current condition.	Unplanned spills or leaks of hazardous liquids during equipment refueling, operations, maintenance, or storage could cause localized, and medium-term impacts that could be direct, secondary, or cumulative. Access roads installed during construction could disturb the stream bed and cause minor changes in water quality and instream habitat characteristics at the crossing location. These impacts could affect water quality and aquatic life downstream of the immediate location of disturbance and are localized and regional. While no impacts on water quality during operations are anticipated, impacts on water quality from spills on fisheries during construction would be direct, localized, and long-term.

Source: Grid United 2026a, 2026b

< = less than; AC = alternating current; ARS = Agricultural Research Service; BLM = Bureau of Land Management; BMP = best management practice; CO₂e = carbon dioxide equivalent; DNRC = Department of Natural Resources and Conservation; EIS = Environmental Impact Statement; EMF = electromagnetic field; EO = Executive Order; ESA = Endangered Species Act; GHG = greenhouse gas; HPTP = historic property treatment plan; HUC = hydrologic unit code; HVDC = high-voltage direct current; MP = Milepost; NFS = National Forest System; NSA = noise-sensitive area; PEM = palustrine emergent; PFO = palustrine forested; Proponent = North Plains Connector LLC; PSS = palustrine scrub-shrub; RFSS = Regional Forester’s Sensitive Species; ROW = right-of-way; RV = recreational vehicle; SCP = Species of Conservation Priority (North Dakota status listing); SGCN = Species of Greatest Conservation Need; SGIN = Species of Greatest Information Need; SOC = Species of Concern (Montana status listing); SSS = Special Status Species (BLM status listing); USDA = U.S. Department of Agriculture; USEPA = U.S. Environmental Protection Agency; USFWS = U.S. Fish and Wildlife Service; VRM = Visual Resource Management Notes:

^a See Table 3.13-3; the land cover category “Other (Non-Vegetated or Developed Areas)” was excluded from the totals.

B.3.5. Chapter 7

Table 7.1-1
U.S. Department of Energy

Name	Role	Education
Berke, Carly	Public Engagement Lead	BA International Relations BS Film & Television
Christopherson, Kirsten	Biological Resources Specialist	MS Biological Sciences BS Zoology
Dull, Daniel	Visual Resources and Aesthetics Specialist	AA Computer Science
Taylor, Harry E.	NEPA Compliance Officer	AA Engineering BS Civil and Environmental Engineering
Larson, Jeffrey D.	Cultural Resources Specialist / Tribal Relations	MSc Classical Art & Archaeology BS History AA Business
Sherman, Ben	Water Resources Specialist	BS Environmental Science, concentration in Water Resources
Smith, Mitch	Geological Resources Specialist	BA Liberal Arts, concentration in Biology, Economics, Environmental Science, Peace Studies, and Justice Studies
Smith, Steve	NEPA Document Manager	MS Environmental Studies
Treich, Kira	Land Use and Recreational Resources Specialist	BS Electrical Engineering

AA = Associate of Arts; BS = Bachelor of Science; MS = Master of Science; MSc = Master of Science; NEPA = National Environmental Policy Act

Table 7.1-2
Montana Department of Environmental Quality

Name	Role	Education
Gronda, Emma	Deputy Project Manager through June 2025	BA Political Science and Environmental Studies
Harbage, Rebecca	EIS Reviewer	MA Community and Regional Planning
Jones, Craig	MEPA/MFSA Coordinator Project Manager	BA Political Science
Langston, Jeremiah	Staff Attorney	JD Attorney
Spezia, Anne	MEPA/MFSA Coordinator	BS Earth Science, Hard Rock Geology
Tasker, Bailey	Deputy Project Manager July 2025– current	MS Ecological Restoration, BS Biology (Research), Minor in Environmental Studies

BA = Bachelor of Arts; BS = Bachelor of Science; EIS = Environmental Impact Statement; JD = Juris Doctor; MA = Master of Arts; MEPA = Montana Environmental Policy Act; MFSA = Major Facility Siting Act; MS = Master of Science

Table 7.2-1
U.S. Department of Agriculture Forest Service

Name	Role	Education
Anderson, Zoanne	NEPA, WO Coordination	BA Organization Management
Best, Steven	Public Affairs, Public and Regional Coordination	MS Conservation Social Sciences
Colburn, LeAnn	NEPA	MS Soil Science BS Animal and Dairy Science
Dahl, Jack	Botany, Invasives	MS Animal and Range Science BS Animal and Range Science Associate Wildlife Management
Grudniewski, Curt	Engineering	BS Civil Engineering
Haakenson, Wade	Archeology and Heritage	MS BS Archeology
Hays, Misty	Medora District Ranger	BS Range Science
Hunting, Mark	USDA Forest Service Team Lead	GED
Ihle, Beth	Grasslands Supervisor	MS Earth Sciences BS Geology
Kempenich, Brian	Paleo, Minerals	BS Animal and Range Science; Business Administration
Kenninger, Kate	Project Coordinator / NEPA Review	MS Environmental Science BS Fisheries and Wildlife Biology
Nelson, J.J.	Wildlife Biologist, Fisheries	BS Zoology (Fisheries, Wildlife, Ecology, and Behavior focus), Minor in Botany PhD Conservation Biology
Schonert, Greg	Wildlife Biologist	BS Fisheries and Wildlife Biology
Semenza, Nick	Hydrologist, Soil Scientist	BS Geology
Walsh, Cathy	Lands and Special Uses	BS Accounting

BA = Bachelor of Arts; BS = Bachelor of Science; GED = General Educational Development; MS = Master of Science; NEPA = National Environmental Policy Act; PhD = Doctor of Philosophy; USDA = U.S. Department of Agriculture; WO = National Headquarters

Table 7.2-2
Bureau of Land Management

Name	Role	Education
Blundell, Phillip	BLM Project Manager, NEPA Review	JD
Buckmaster, Josh	Soils	MS Range Management BA Environmental Science
Carlson, Courtney	Cultural Resources	MA Applied Anthropology BA Anthropology
Doran, Dawn	Vegetation Resources, Livestock Grazing	BS Forestry, Minor Wildlife Biology

Name	Role	Education
Fox, Dan	Management Review, Renewable Resources	BS Environmental Science – Renewable Resources
Hickey, Whitney	Vegetation Resources, Livestock Grazing	BS Natural Resources – Rangeland Ecology
Keeran, Samantha	Geologist, Paleontology Permit Administrator	BS Wildlife Conservation and Ecology BS Environmental Geology
Kelly, Michael	Wildlife Biologist	BT Wildlife Management
Klempel, Beth	Management Review, Realty, Nonrenewable Resources	BS Range Science
Lang, Dena	Recreation, NCL, Visuals	BS Education and Health and Physical Education
Liggett, Greg	Paleontologist	MS Geology/Paleontology
Morris, Christopher	Hydrology	BS Geography
Peterson, Mark	Air Resources	MS Environmental Engineering BS Environmental Engineering
Reynolds, David	GIS Specialist	BS Biological Sciences
Rice, Benjamin	GIS Specialist	BS Criminology/Sociology
Shilling, Carissa	Solid Minerals Geology	MS Geology BS Geology, Minor in Geography
Stillings, Amy	Economist	MS Resource and Agricultural Economics BS Resource Economics
Stuart, Christina	Fisheries	BS Marine Biology
Undlin, Kent	Wildlife Biologist	BS Wildlife Management Technical 2 year—Natural Resources
Velman, Wendy	Vegetation Resources	BS Botany
Witkowski, Brenda	Invasive Species	Land Resource Analysis and Management
Wood, David	Wildlife Biologist	BS Wildlife Management MS Wildlife Management PhD Ecology and Environmental Sciences

BA = Bachelor of Arts; BS = Bachelor of Science; BT = Bachelor of Technology; BLM = Bureau of Land Management; GIS = Geographic Information System; JD = Juris Doctor; MS = Master of Science; NEPA = National Environmental Policy Act; PhD = Doctor of Philosophy

Table 7.2-3
U.S. Department of Agriculture, Agricultural Research Service

Name	Role	Education
David, Lindsey	Environmental Protection Specialist	MS Geology (Hydrogeology) BS Geology
Frank, Stephanie	Cultural Resources	PhD Policy, Planning and Development Certificate in Historic Preservation
Mehaffie, Carl	Realty Specialist	MBA BS Recreation Management
Welker, Elliott	Safety and Occupational Health Specialist	MS Microbiology BS Biotechnology

BS = Bachelor of Science; MBA = Master of Business Administration; MS = Master of Science;
PhD = Doctor of Philosophy

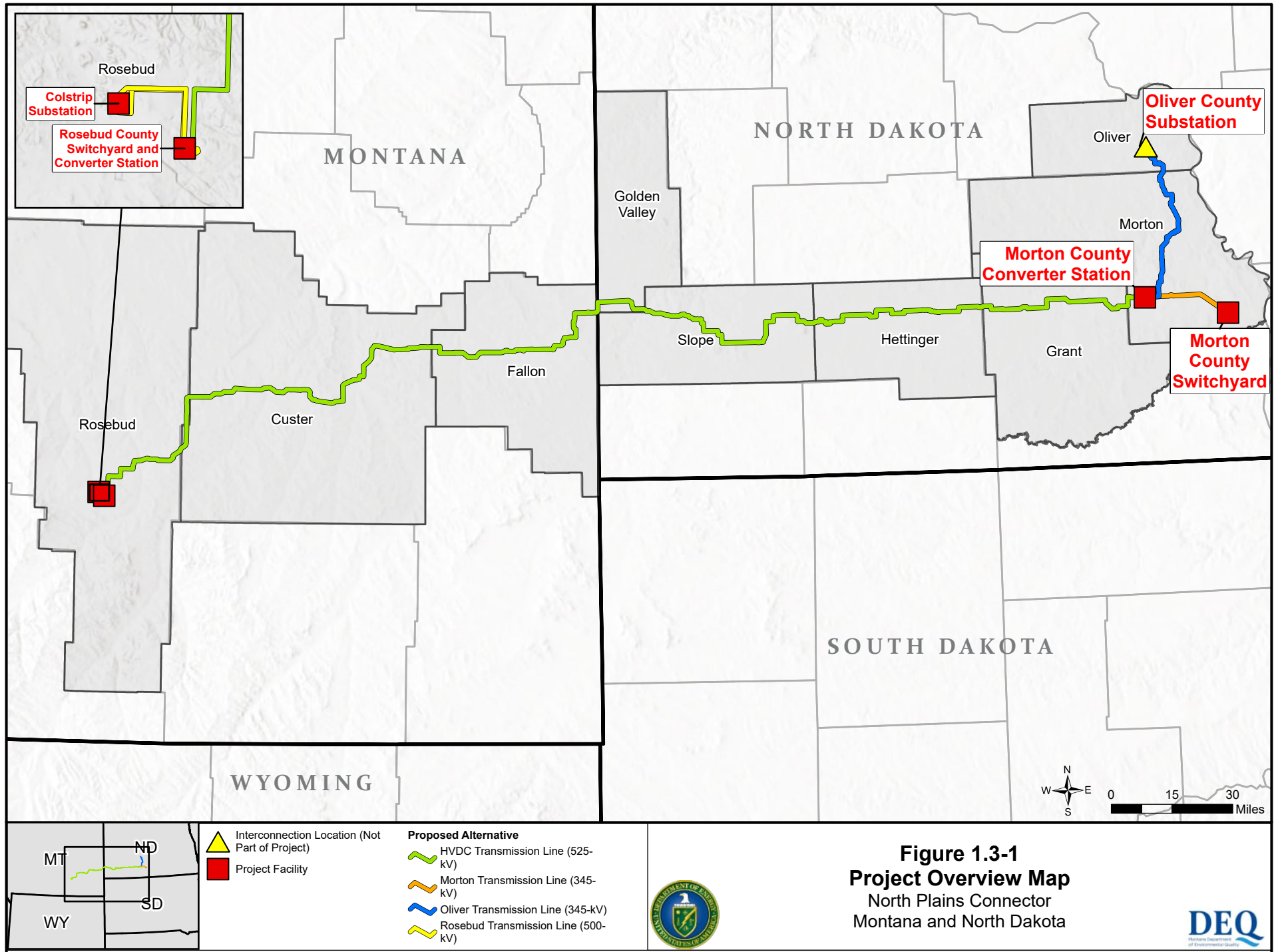
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Third-Party Consultant Team

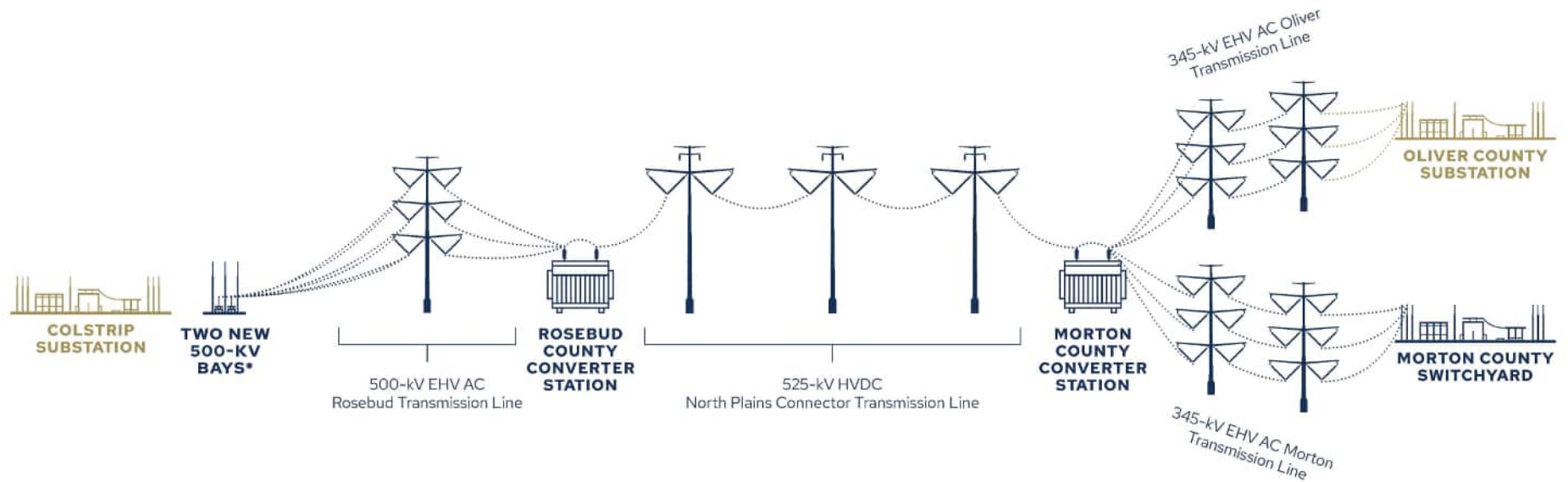
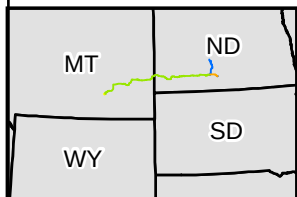
Name	Role	Education
Adams, Heather	Cultural Resources	MS Cultural Resource Management BS Liberal Arts in Archaeology/Anthropology
Agresti, Tony	Noise	BA Meteorology
Cano, Caitlyn	Public Health and Safety	BS Environmental Engineering
Cox, Mike	Partner in Charge	BS Geological Engineering
Davis, Ally	Noise	BS Biological Sciences
DeJooode, Daniel	Vegetation	PhD Ecology and Evolutionary Biology. MS Botany
Fickes, Morriah	Fisheries	MS Wildlife and Fisheries
Hall, Coby	Surface Water Hydrology	BS Geoscience (Hydrology)
Hegeman, Luke	Visuals/Aesthetics	Master of Landscape Architecture II
Hopson, Rosemary	Wildlife	MS Ecology BS Zoology and Botany
Huff, Jenifer	Land Use and Recreation Socioeconomics	BS Urban and Regional Planning
James, Lindsay	Purpose and Need Alternatives	BA Environmental Studies and Geography
Kolluru, Venkat	Public Health and Safety	PhD Ocean Engineering
Kuss, Landry	Groundwater Hydrology Geology and Mineralogy	BS Earth Sciences
Lee, Jennifer	Alternatives	BA Environmental Studies and Geography
Liger, Annika	Cultural Resources	MA History of Welfare and Medicine in Society

Name	Role	Education
		BA History BS Anthropology
Lisson, Ryan	Project Manager Wildlife	BS Biological Sciences
Lium, Robin	Visuals/Aesthetics	MS Wildlife Conservation & Habitat Management BS Biology
Michalk, Zach	Land Use and Recreation Socioeconomics	BS Urban and Regional Planning
Payette, Jacquie	Cultural Resources	MS English
Pirela, Herbert	Soils	PhD Soil Chemistry
Quinn, Duncan	Soils	MS Forestry BS Atmospheric Sciences
Quiroz, Nadja	Visuals/Aesthetics	Master of Landscape Architecture BA Conservation & Restoration, Biology
Rana, Anthony	Groundwater Hydrology Geology and Mineralogy	MS International Development Post-Graduate, Hydrogeology, Geology, Mineralogy and Organic and Inorganic Geochemistry BS Geology
Ronan, Allison	Air Quality Climate Change	MS Meteorology BS Meteorology
Samani, Olga	Air Quality Climate Change	MS Atmospheric Sciences
Semler, Ashley	Document Production	BA English
Sicora, Wayne	Public Health and Safety	BS Civil Engineering
Smith, Emily	Document Production	BA Journalism
Stueber, Renee	Document Production	BA Journalism and Mass Communication
Thorpe, Monika	Private Property	MS Engineering (GIS) BS Meteorology and Geography
Todorov, Melinda	Fisheries	MSc Aquatic Ecology BS Biology
Voeller, Erik	Vegetation	BS Biology
Weitzenkamp, Mariah	Deputy Project Manager	Bachelor of Bioproducts and Biosystems Engineering

BA = Bachelor of Arts; BS = Bachelor of Science; GIS = Geographic Information System; MS = Master of Science; MSc = Master of Science; PhD = Doctor of Philosophy

B.4. FIGURES





Legend

■ New project infrastructure

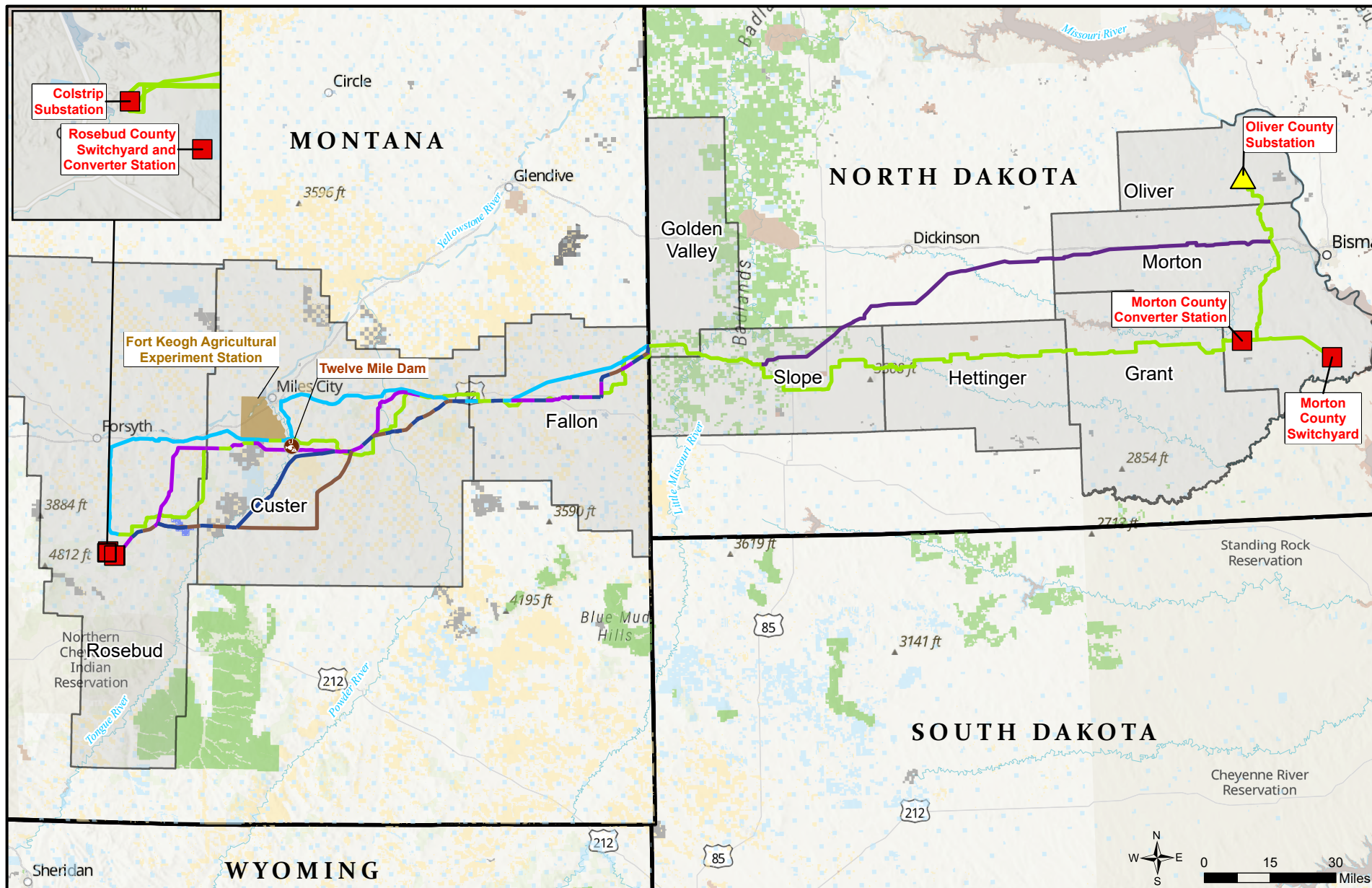
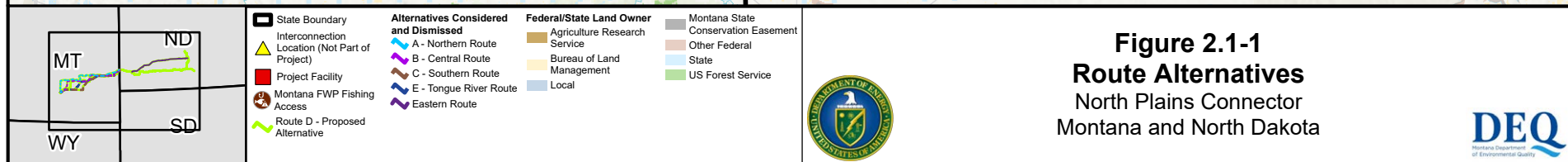
■ Pre-existing infrastructure / Future planned / Not part of project

*The existing footprint of the Colstrip Substation is estimated to be expanded by approximately 13.18 acres to accommodate the NPC interconnection

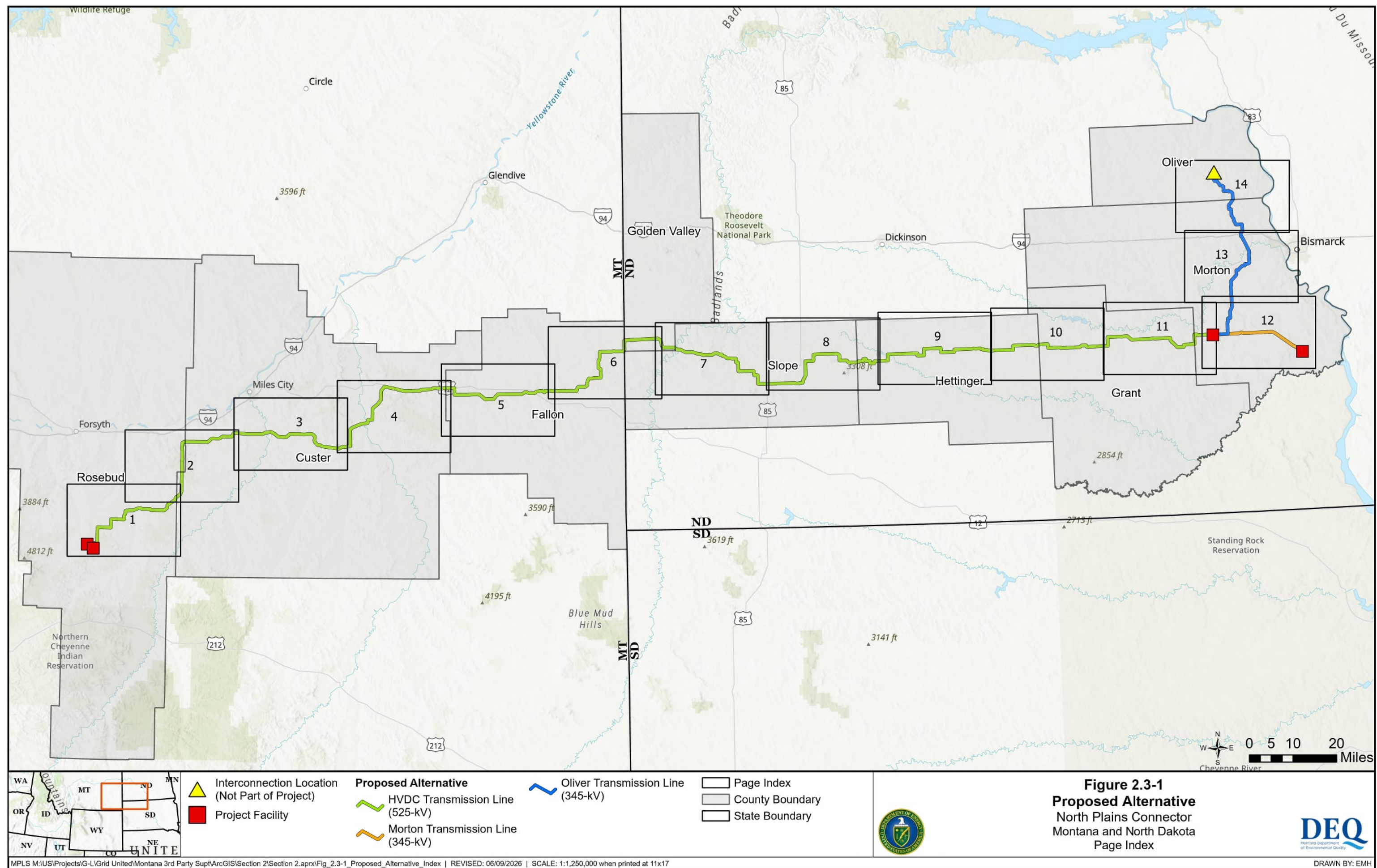


Figure 1.3-2
Major Project Components
 North Plains Connector
 Montana and North Dakota

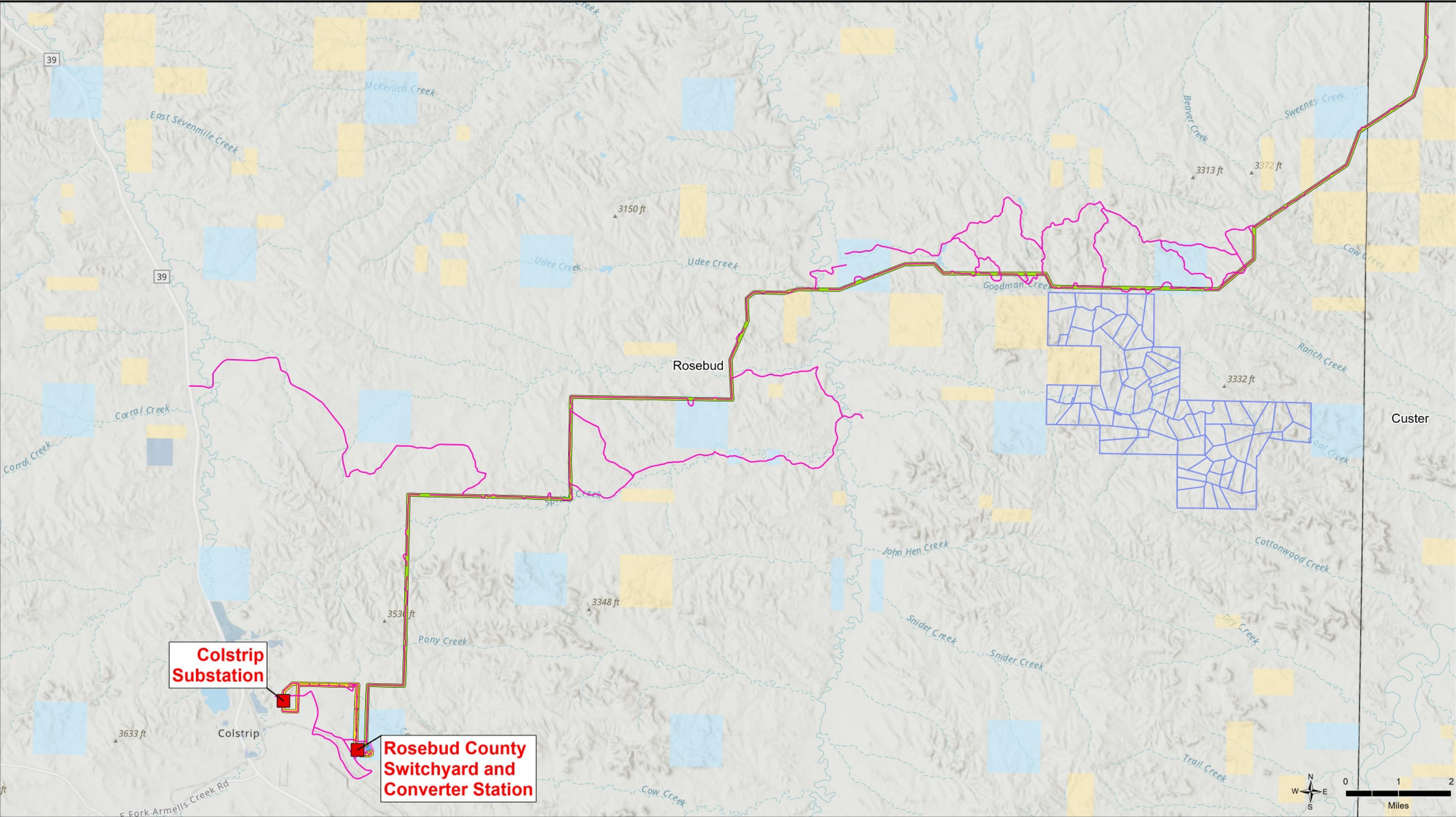




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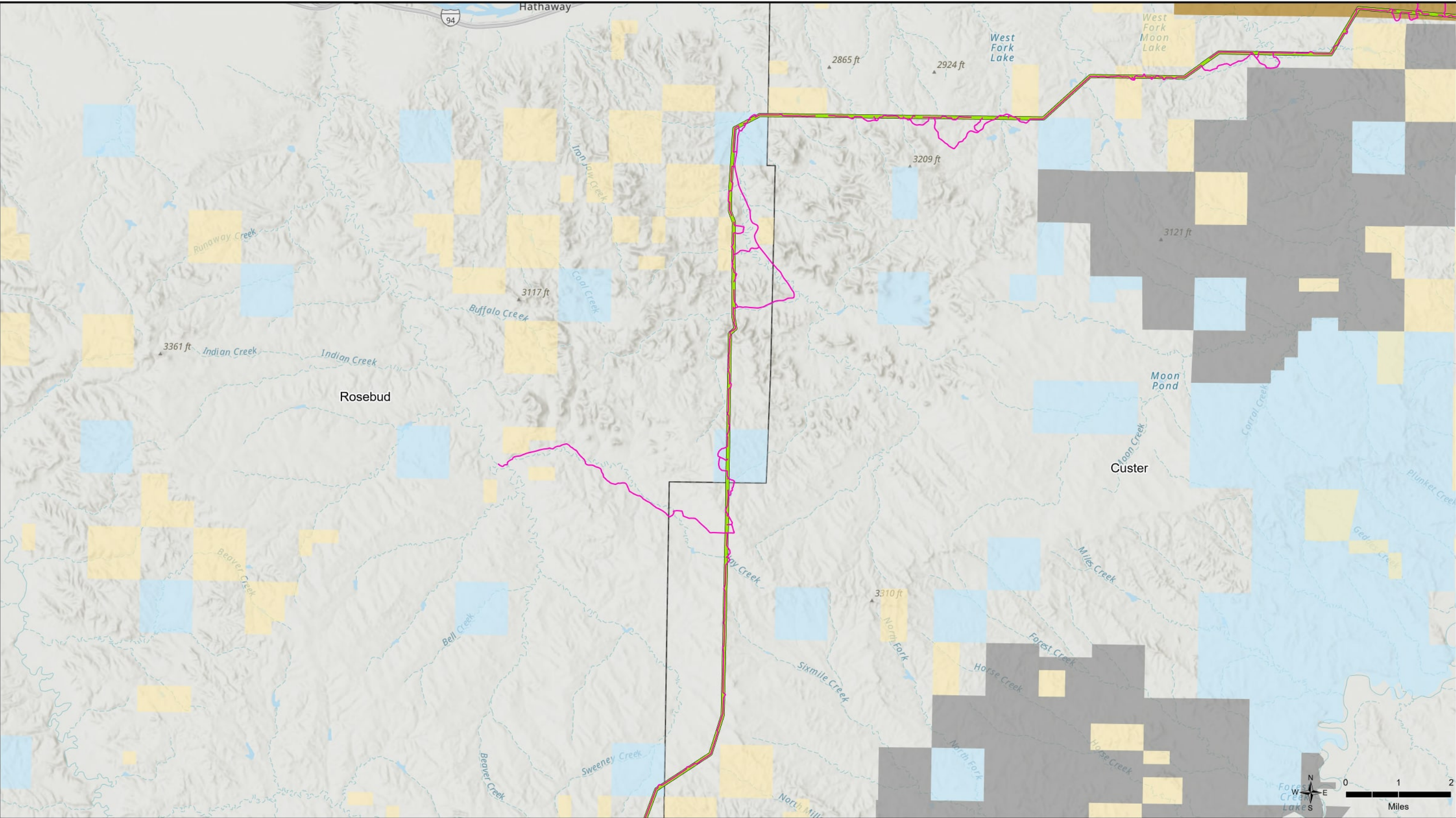
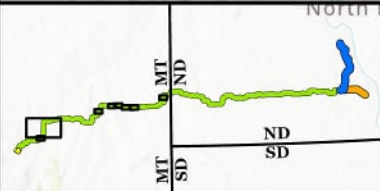
 Project Facility	 Rosebud Transmission Line (500-kV)	Project Facility	Federal/State Land Owner
 HVDC Transmission Line (525-kV)	 Access Road	 Project Converter Station	 Bureau of Land Management
	 County Boundary	 Temporary Impact Area	 Local
	 Subdivided Parcels	 Project Switchyard	 State



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Proposed Alternative
HVDC Transmission Line (525-kV)
Access Road

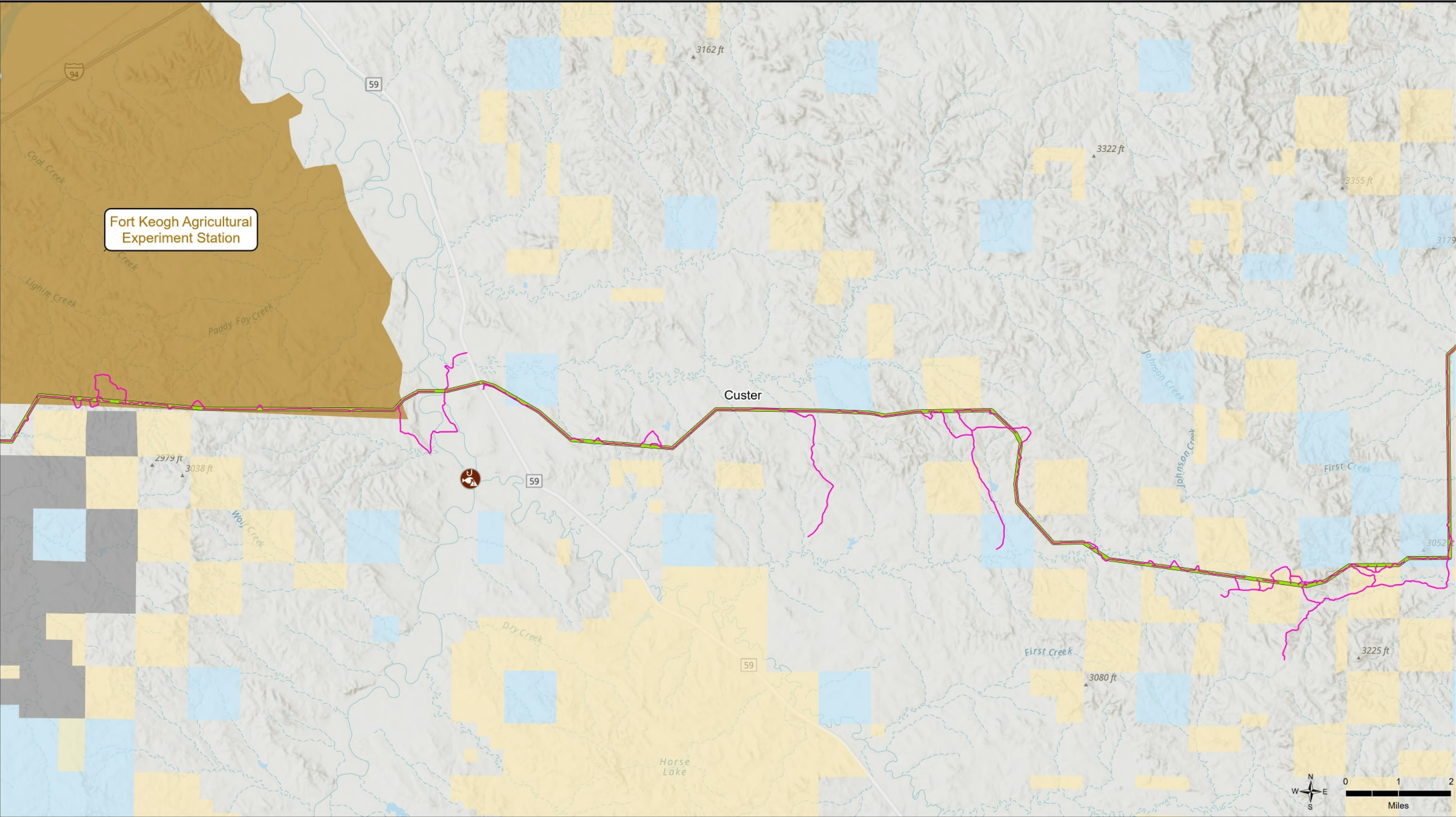
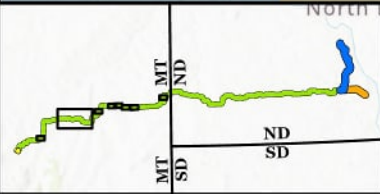
Federal/State Land Owner
County Boundary
Bureau of Land Management
Agriculture Research Service
Montana State Conservation Easement
State



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
Page 2 of 14



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 MT FWP Fishing Access

 Access Road

 **Proposed Alternative**
HVDC Transmission Line (525-kV)

 County Boundary

Federal/State Land Owner

 Agriculture Research Service

 Bureau of Land Management

 Montana State Conservation Easement

 Other Federal

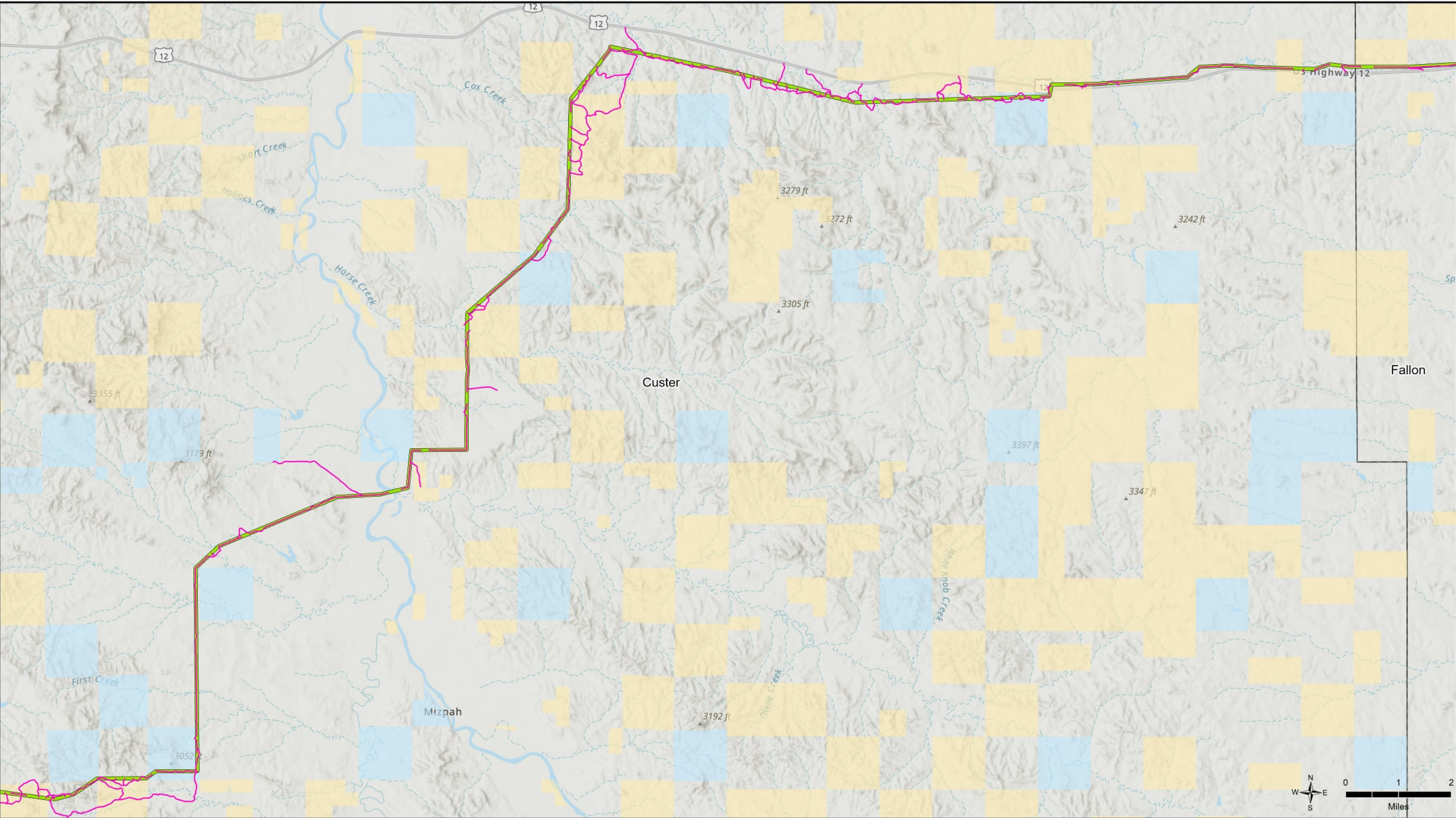
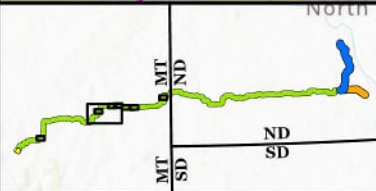
 State



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
Page 3 of 14



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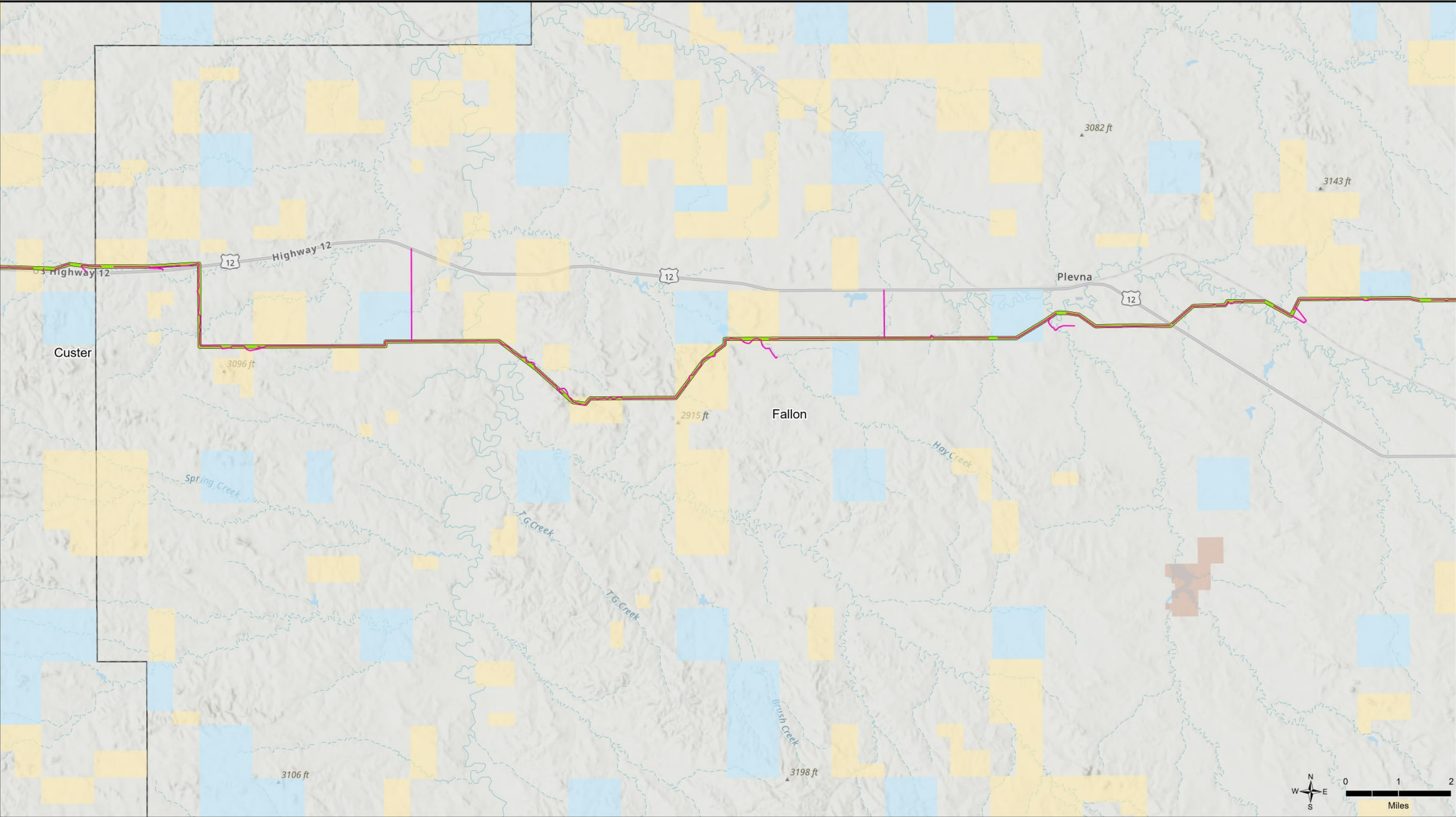
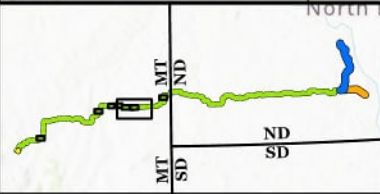


Proposed Alternative	County Boundary	State
HVDC Transmission Line (525-kV)	Federal/State Land Owner	
Access Road	Bureau of Land Management	

Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Proposed Alternative

- HVDC Transmission Line (525-kV)
- Access Road

County Boundary

- Federal/State Land Owner
- Bureau of Land Management

Local

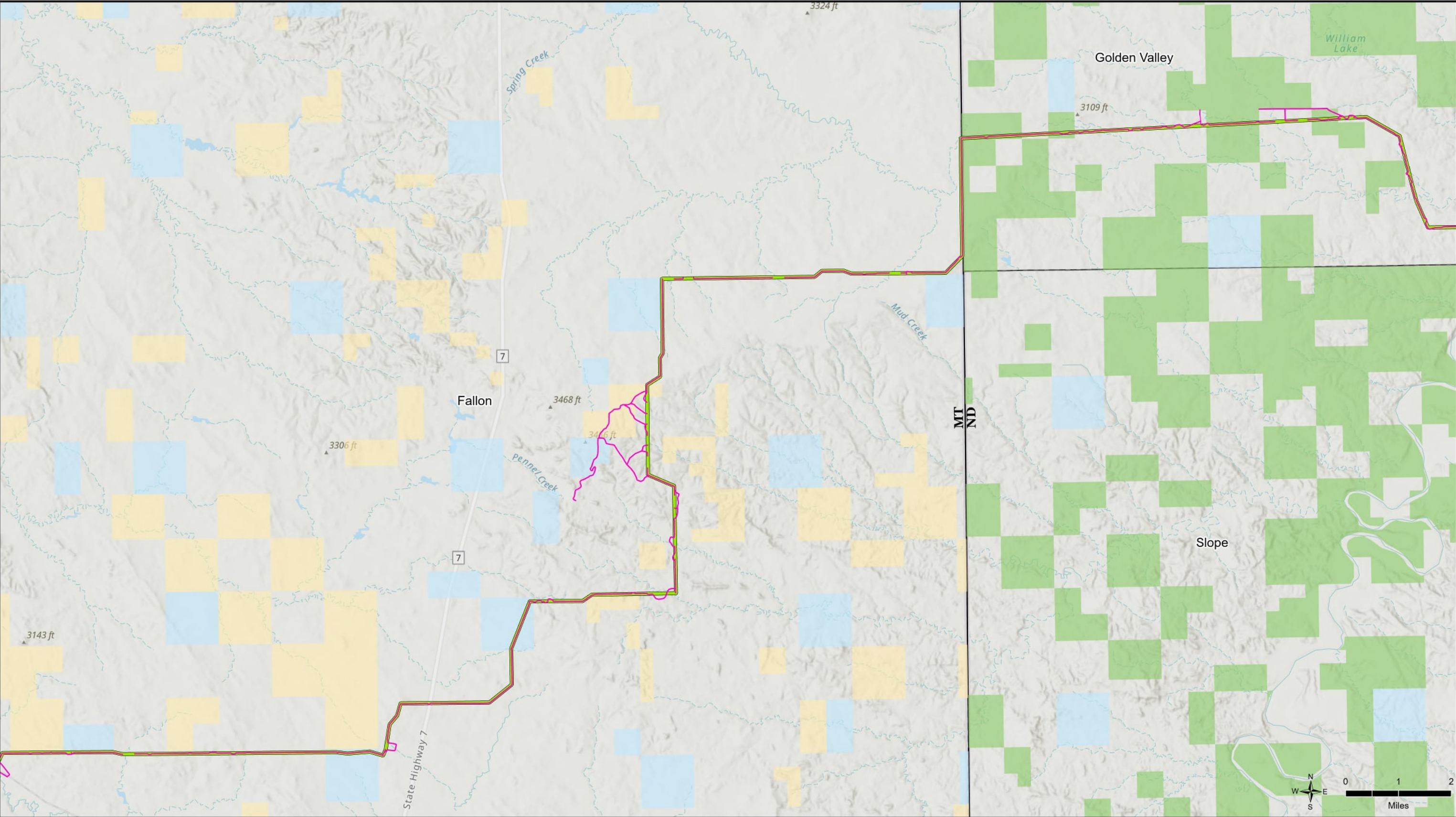
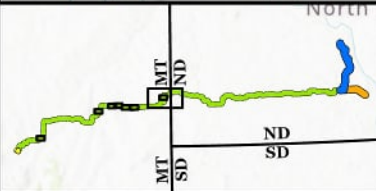
- Other Federal
- State



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
Page 5 of 14



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Proposed Alternative	County Boundary	State
HVDC Transmission Line (525-kV)	Federal/State Land Owner	USDA Forest Service
Access Road	Bureau of Land Management	

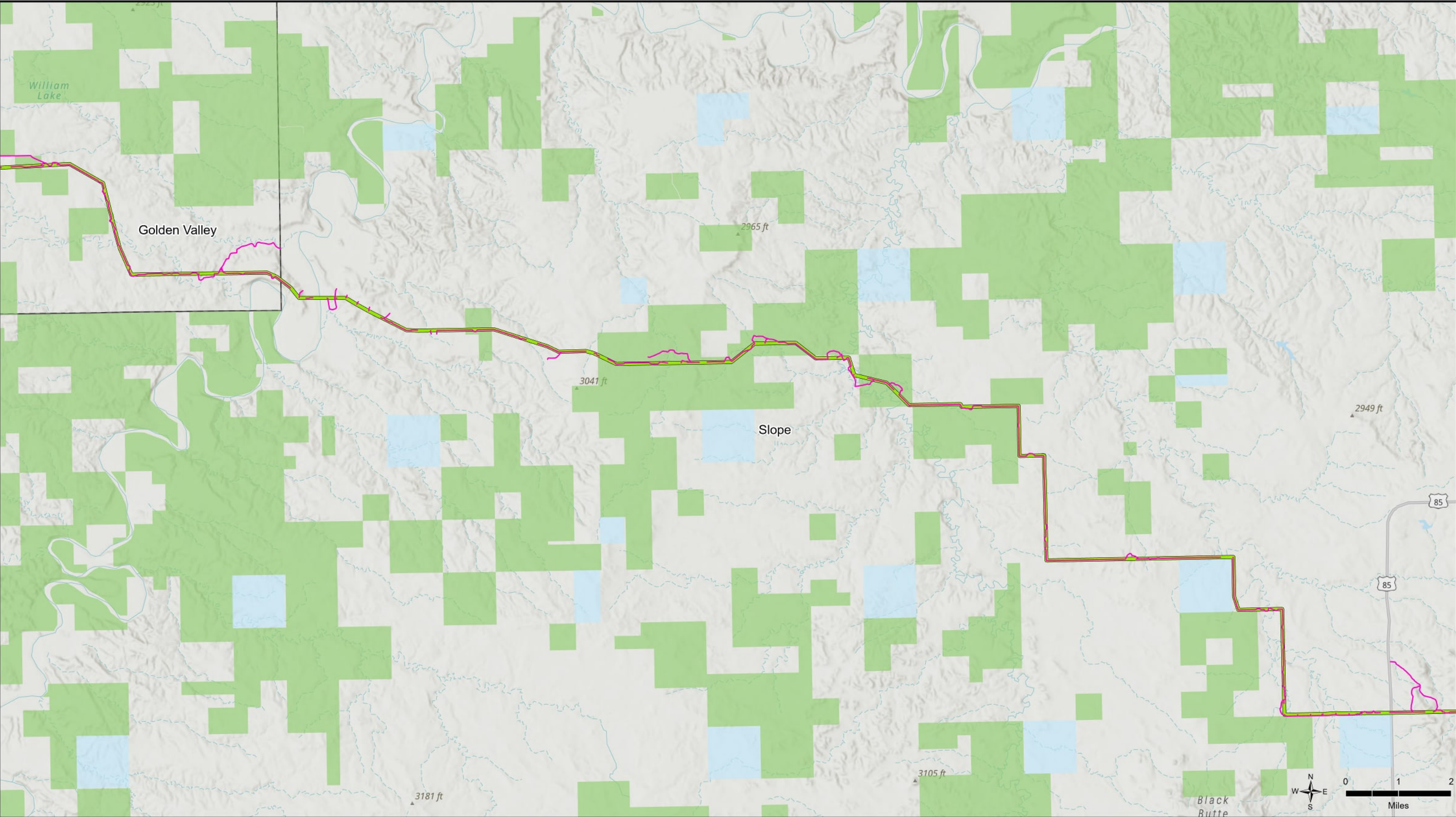
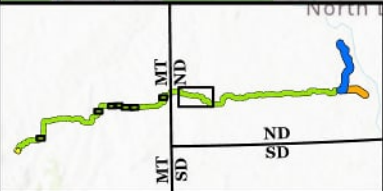


Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
Page 6 of 14



DEQ
Montana Department
of Environmental Quality

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Proposed Alternative

HVDC Transmission Line
(525-kV)

Access Road
County Boundary

Federal/State Land Owner

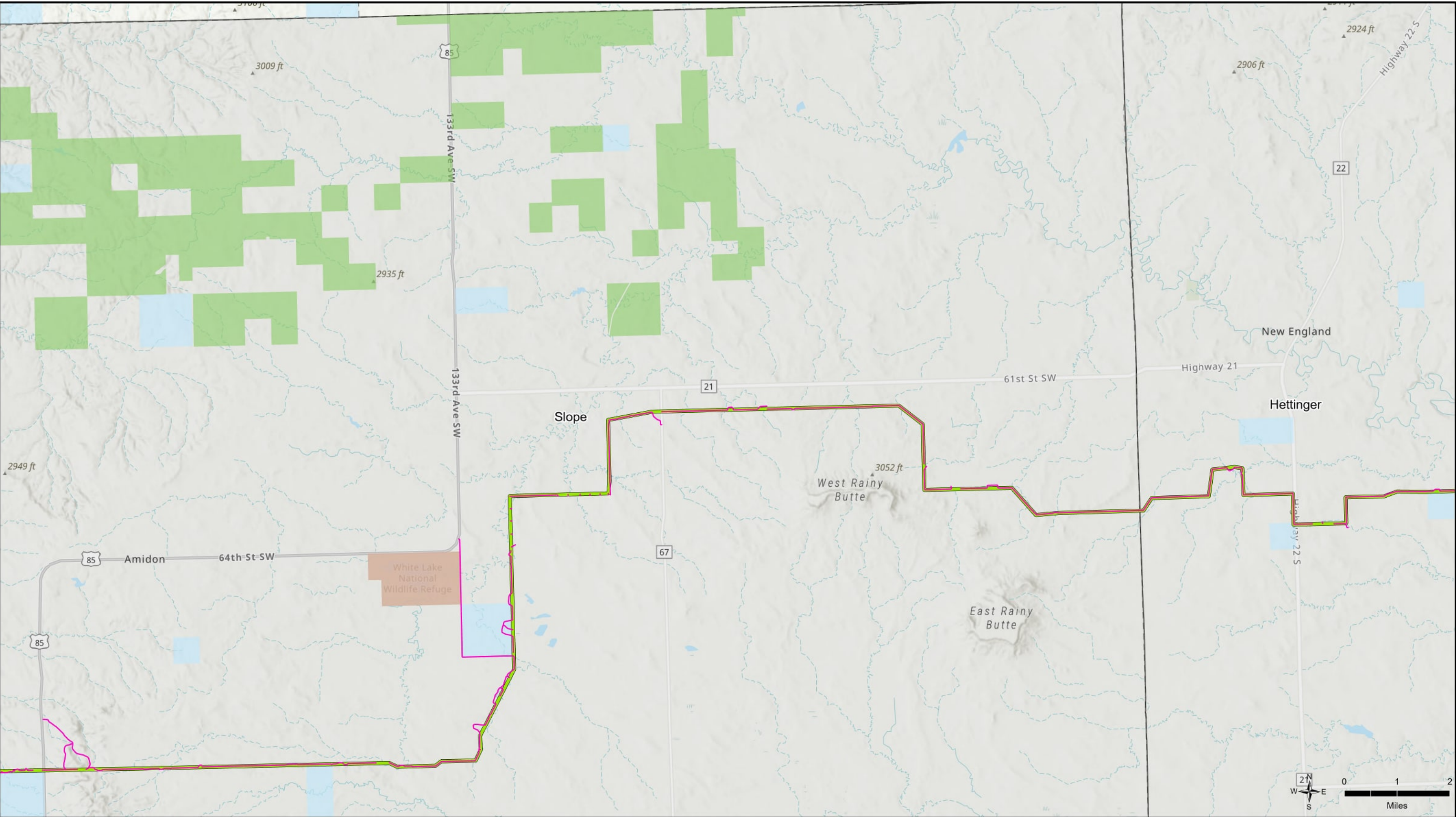
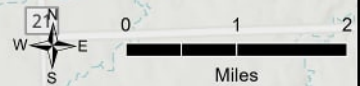
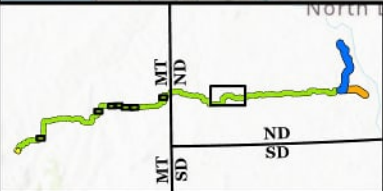
State
USDA Forest Service



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
Page 7 of 14



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Proposed Alternative

- HVDC Transmission Line (525-kV)
- Access Road

County Boundary

- Federal/State Land Owner
- Other Federal

State

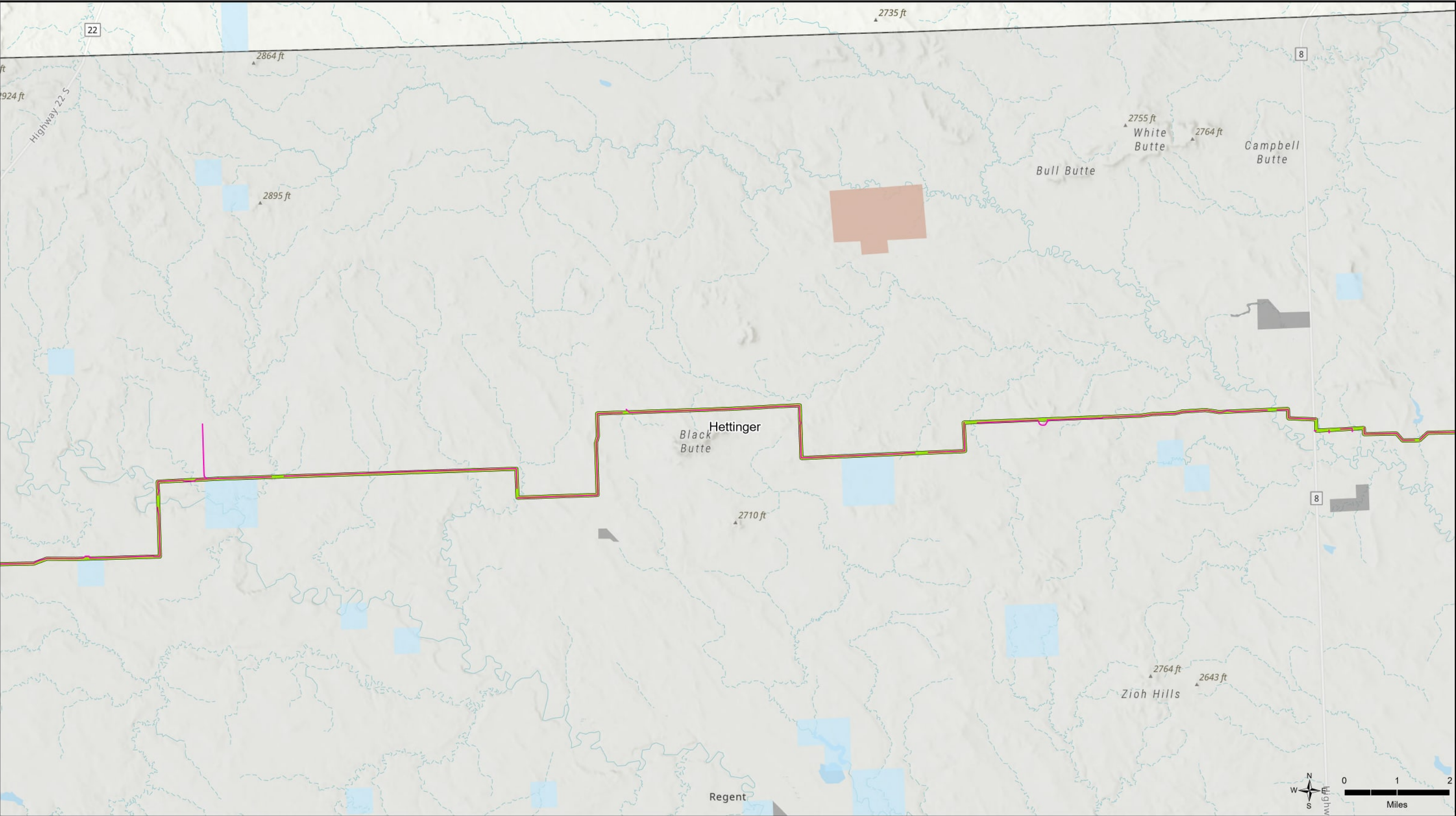
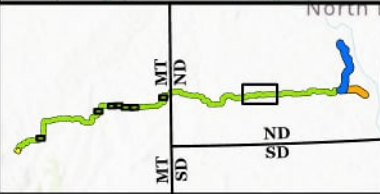
- USDA Forest Service



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Proposed Alternative

- HVDC Transmission Line (525-kV)
- Access Road

Federal/State Land Owner

- County Boundary
- Montana State Conservation Easement

Other Federal

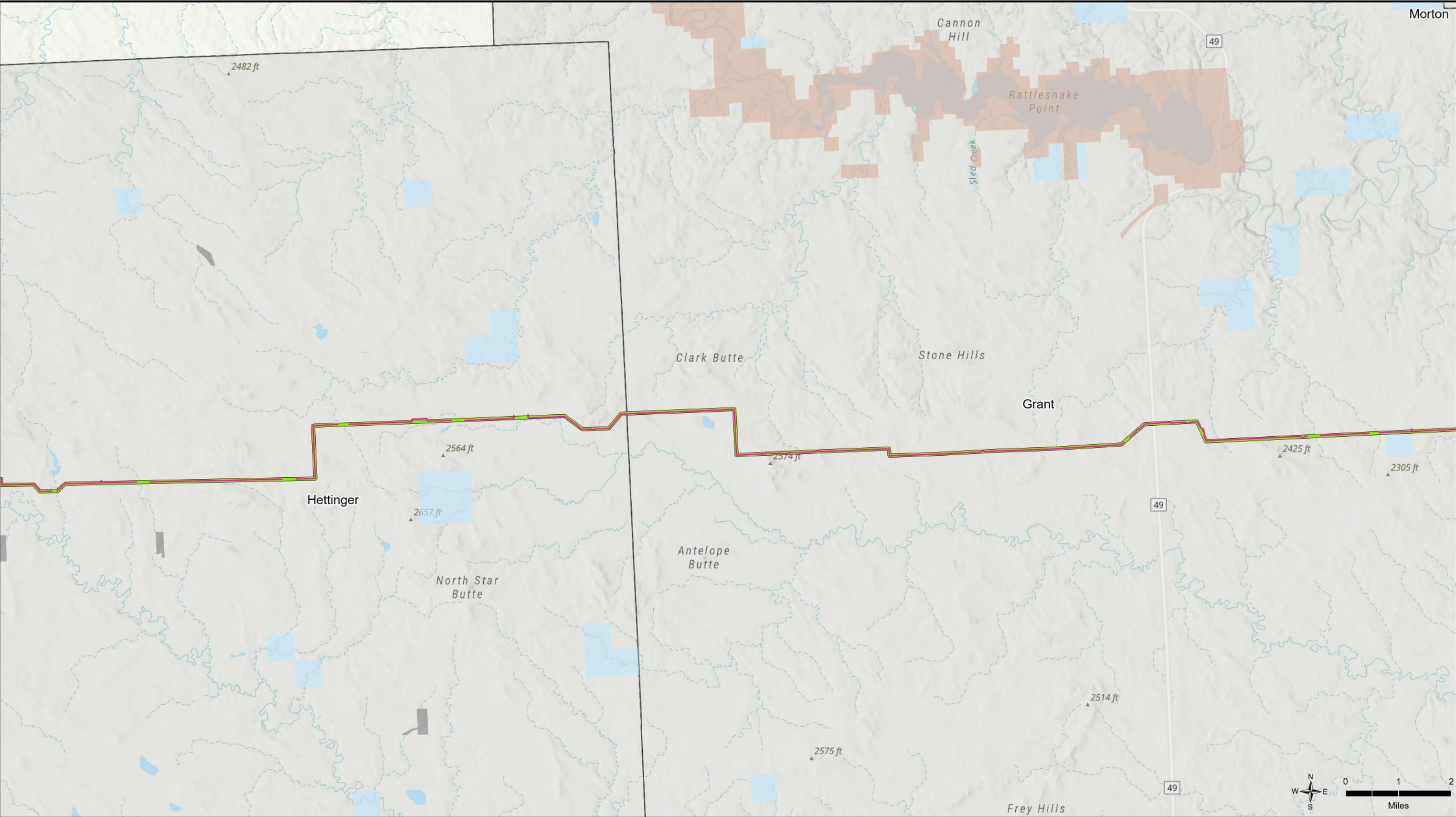
- State



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Proposed Alternative

- HVDC Transmission Line (525-kV)
- Access Road

Federal/State Land Owner

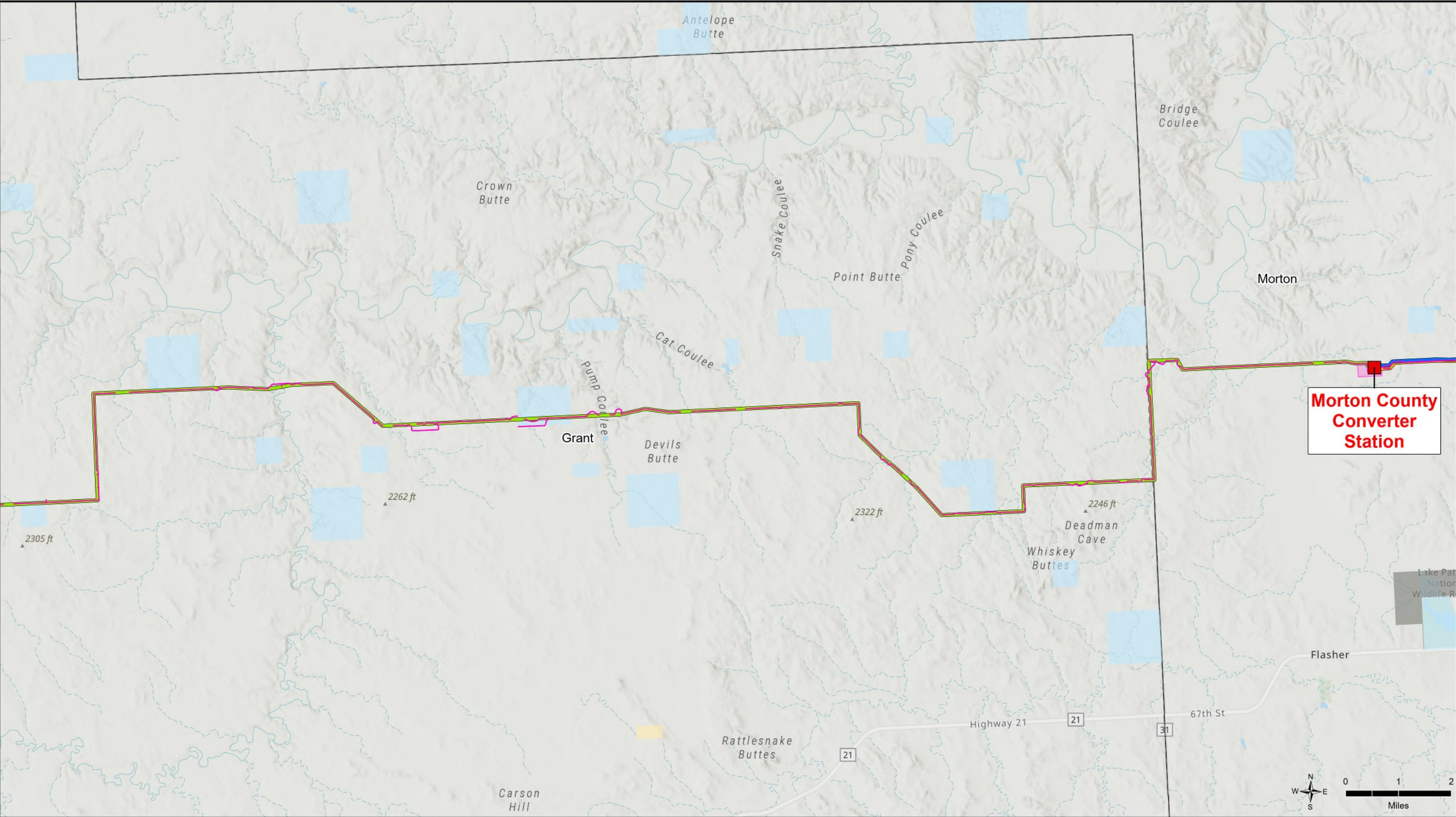
- County Boundary
- Other Federal
- State
- Montana State Conservation Easement



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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**Morton County
Converter
Station**



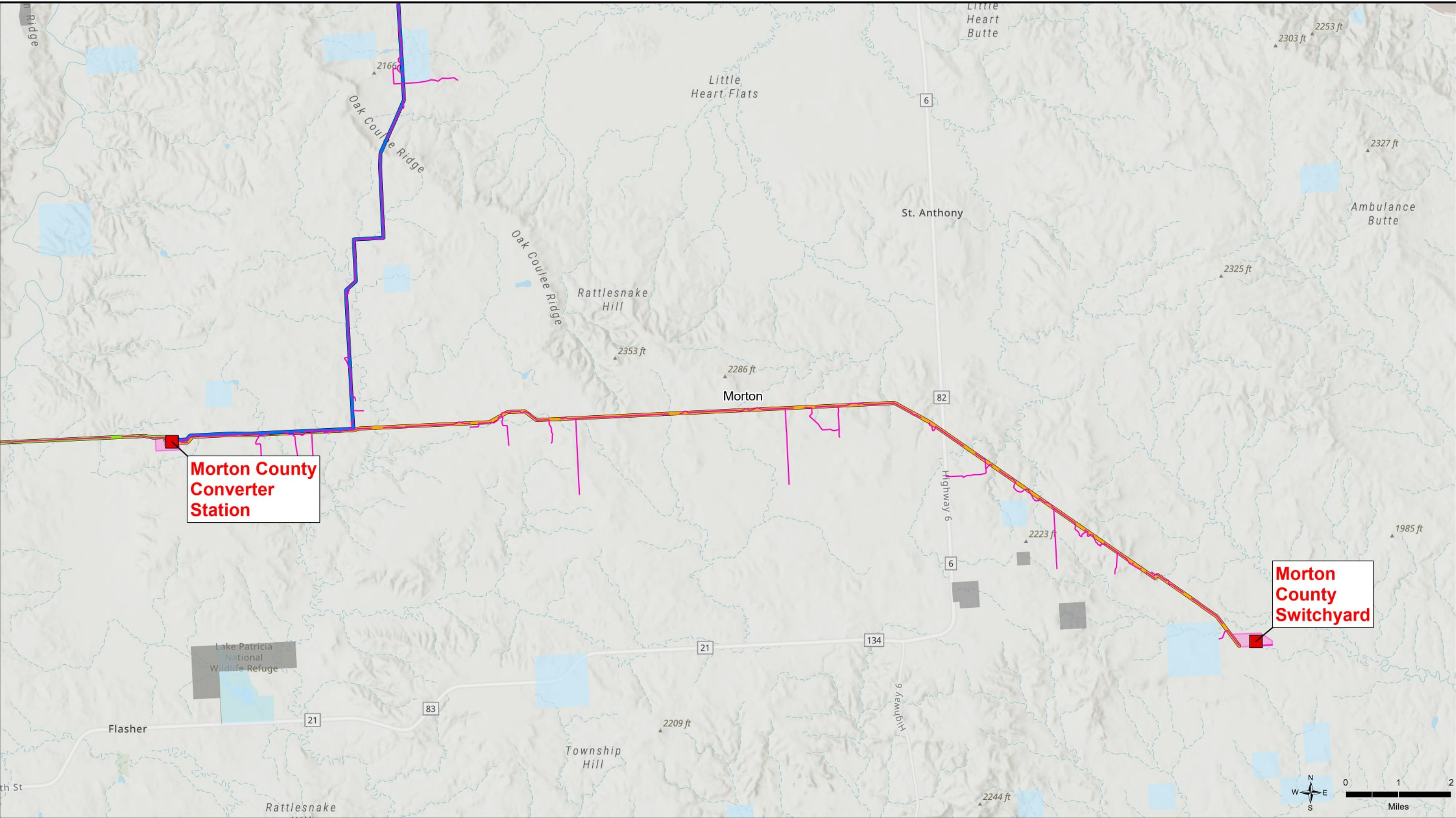
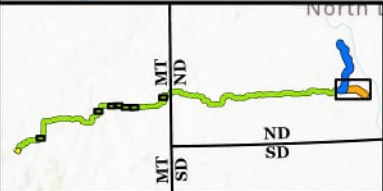
 Project Facility	 Morton Transmission Line (345-kV)	Project Facility	 Project Converter Station	Federal/State Land Owner	 Bureau of Land Management
 HVDC Transmission Line (525-kV)	 Oliver Transmission Line (345-kV)	 Temporary Impact Area		 Montana State Conservation Easement	 State
	 Access Road				
	 County Boundary				



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Project Facility	Morton Transmission Line (345-kV)	County Boundary	Federal/State Land Owner
HVDC Transmission Line (525-kV)	Oliver Transmission Line (345-kV)	Project Converter Station	Montana State Conservation Easement
Access Road		Temporary Impact Area	Other Federal
		Project Switchyard	State

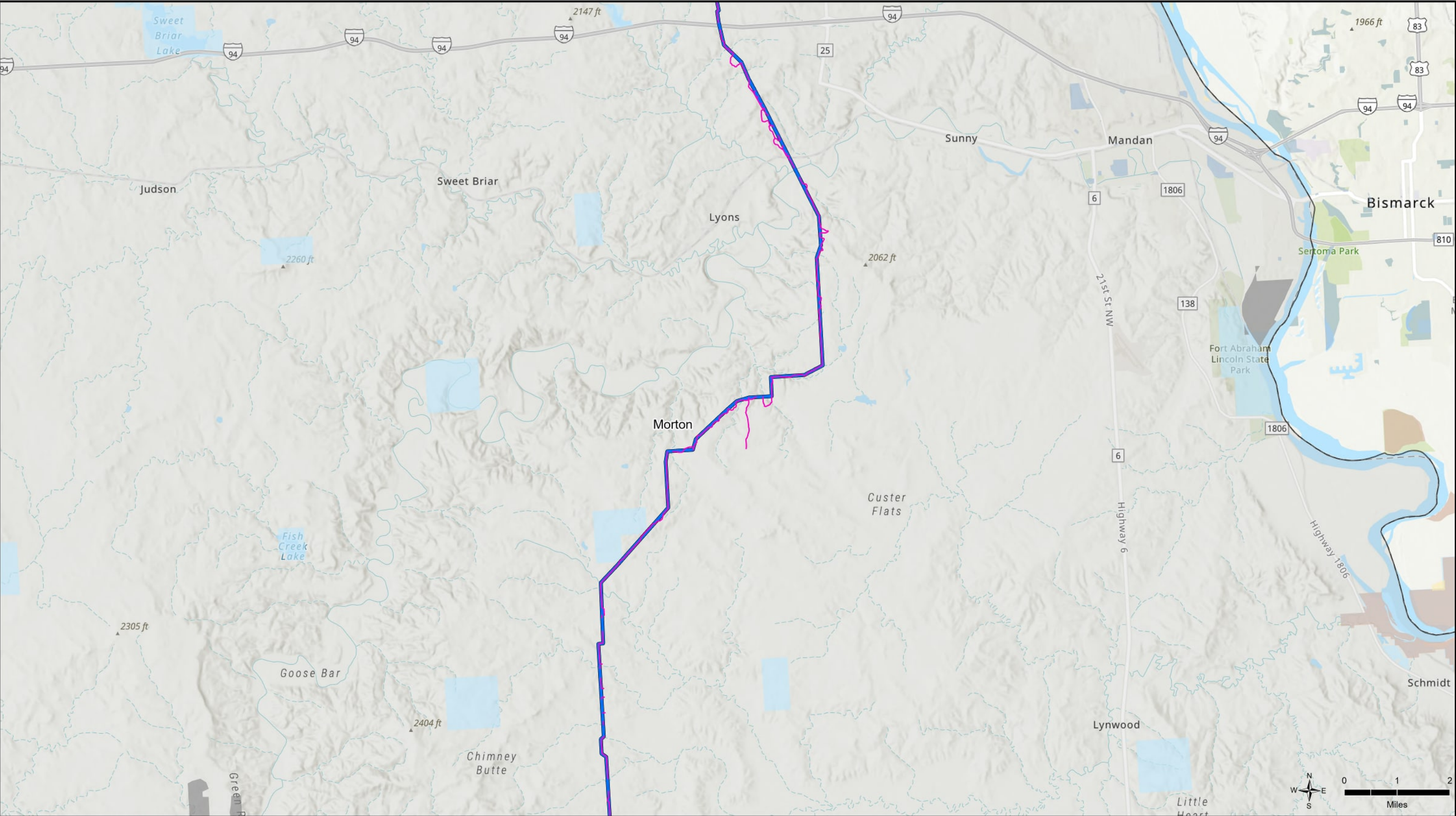
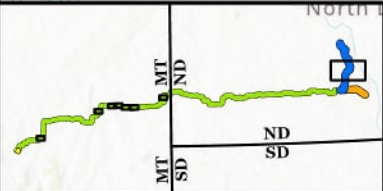


Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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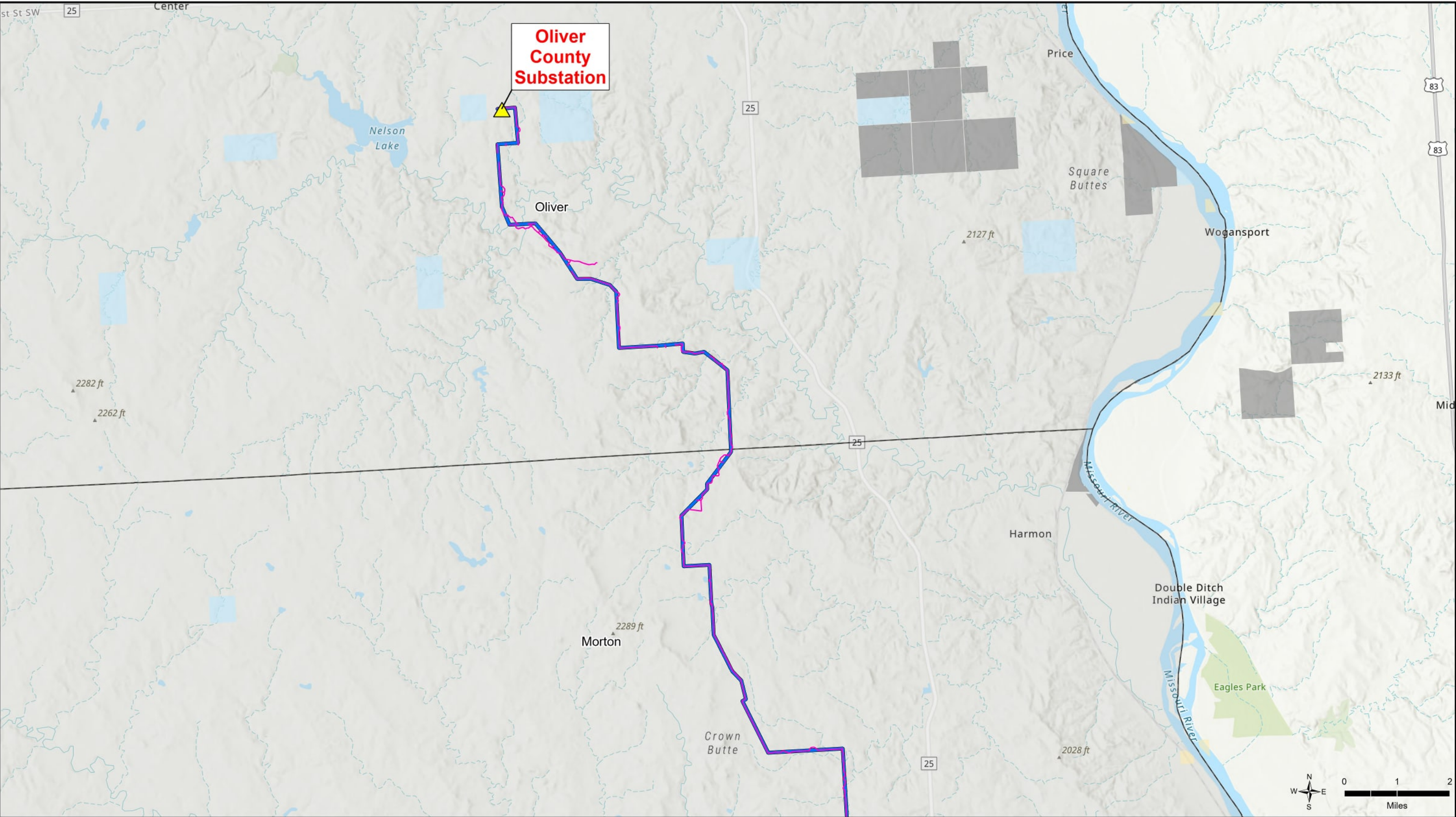
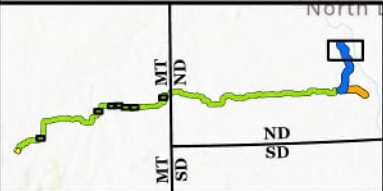
Proposed Alternative	County Boundary	Local	State
Oliver Transmission Line (345-kV)	Federal/State Land Owner	Montana State Conservation Easement	
Access Road	Bureau of Land Management	Other Federal	

Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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Montana Department of Environmental Quality

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- | | | |
|---|--|--|
|  Interconnection Location
(Not Part of Project) |  Access Road |  Montana State
Conservation Easement |
|  Proposed Alternative
Oliver Transmission Line
(345-kV) |  County Boundary |  State |
| | Federal/State Land Owner | |
| |  Bureau of Land
Management | |



Figure 2.3-1
Proposed Alternative
North Plains Connector
Montana and North Dakota
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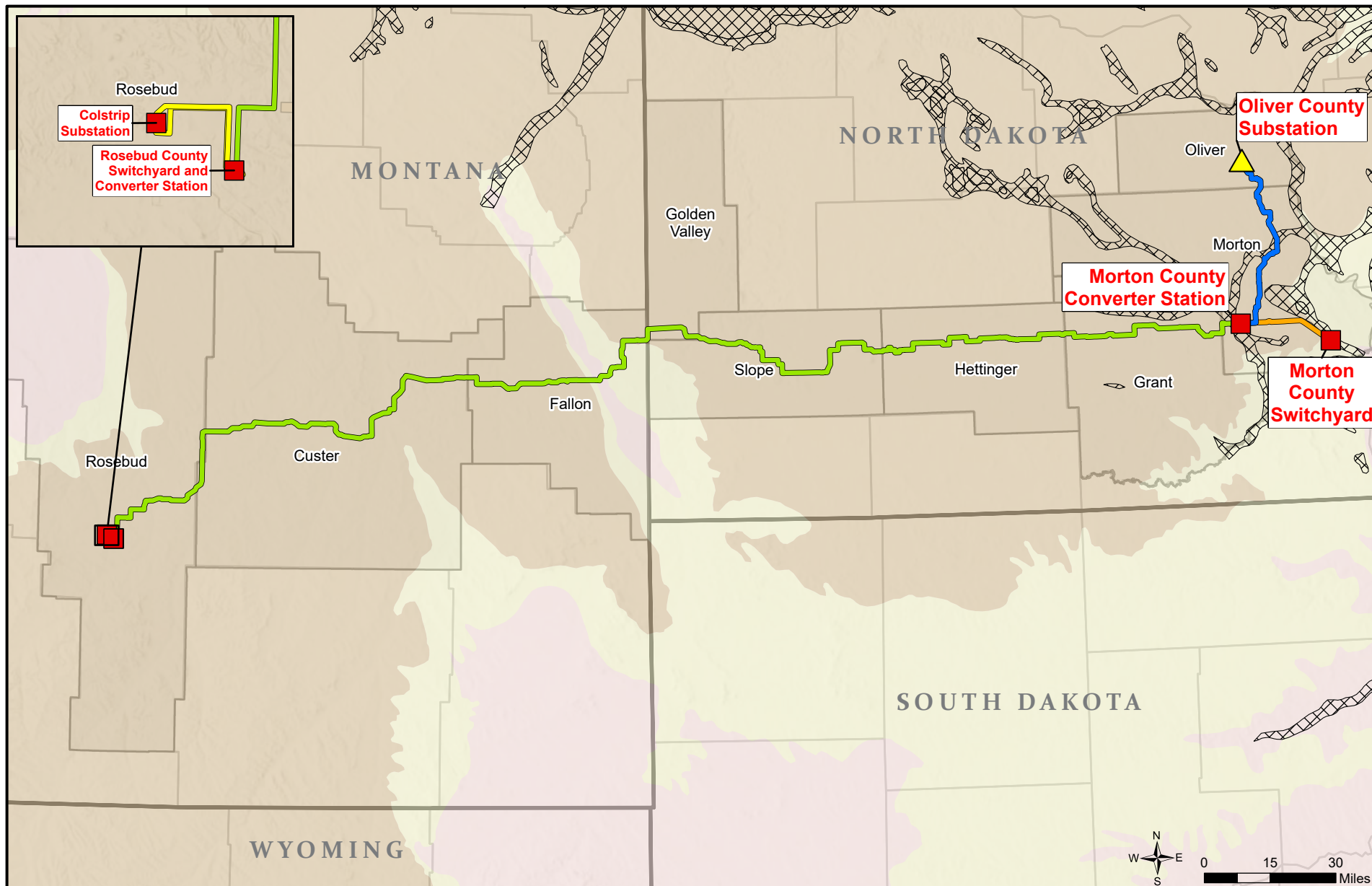
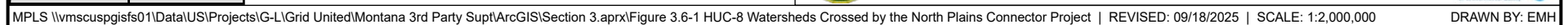
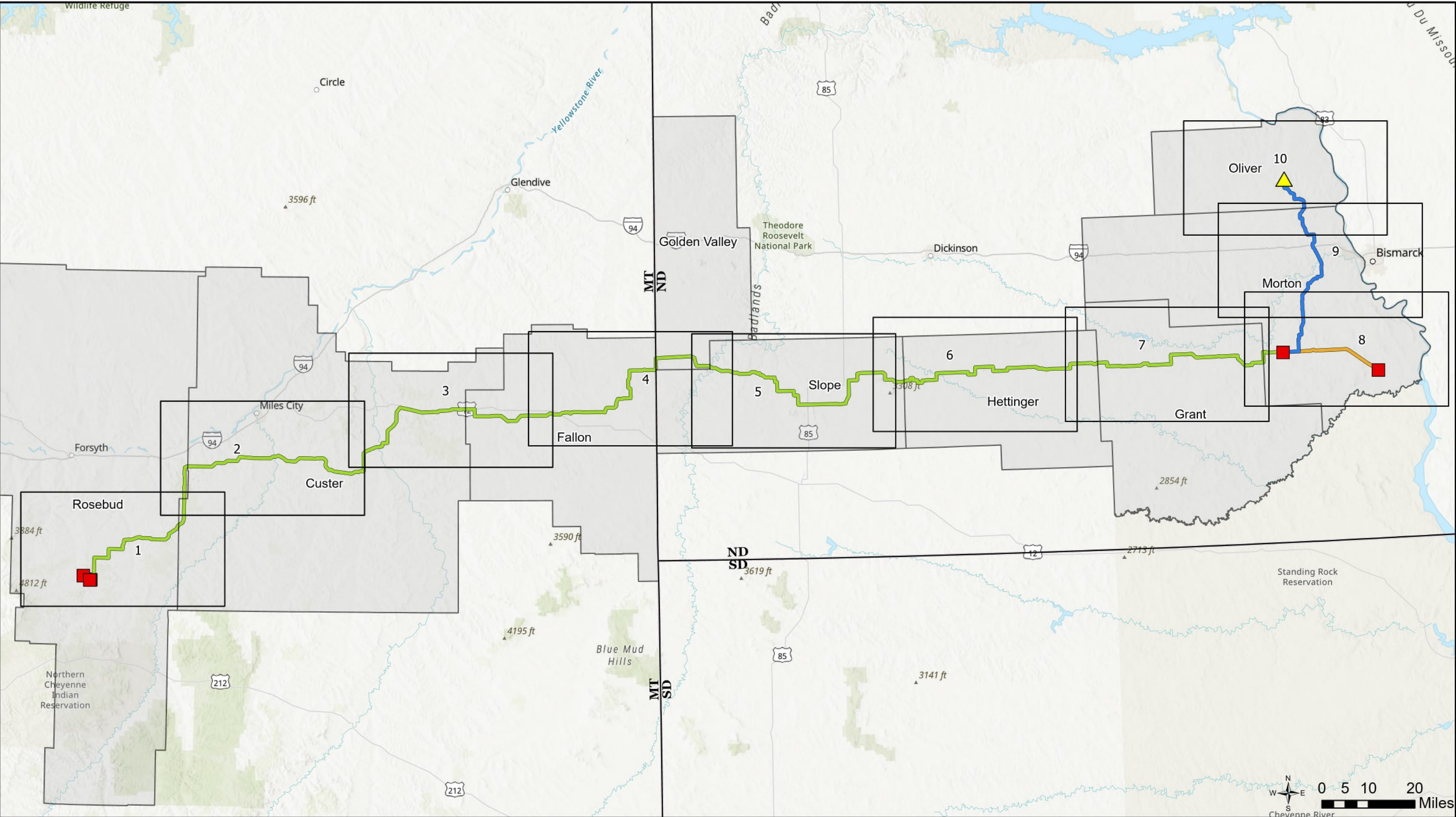
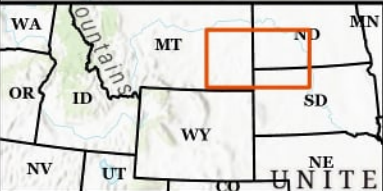


Figure 3.5-1
Principal Aquifers Crossed
 North Plains Connector
 Montana and North Dakota







- Interconnection Location (Not Part of Project)
- Project Facility

- Proposed Alternative**
- HVDC Transmission Line (525-kV)
 - Morton Transmission Line (345-kV)

- Oliver Transmission Line (345-kV)
- Rosebud Transmission Line (500-kV)

- Page Index
- County Boundary
- State Boundary



Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page Index



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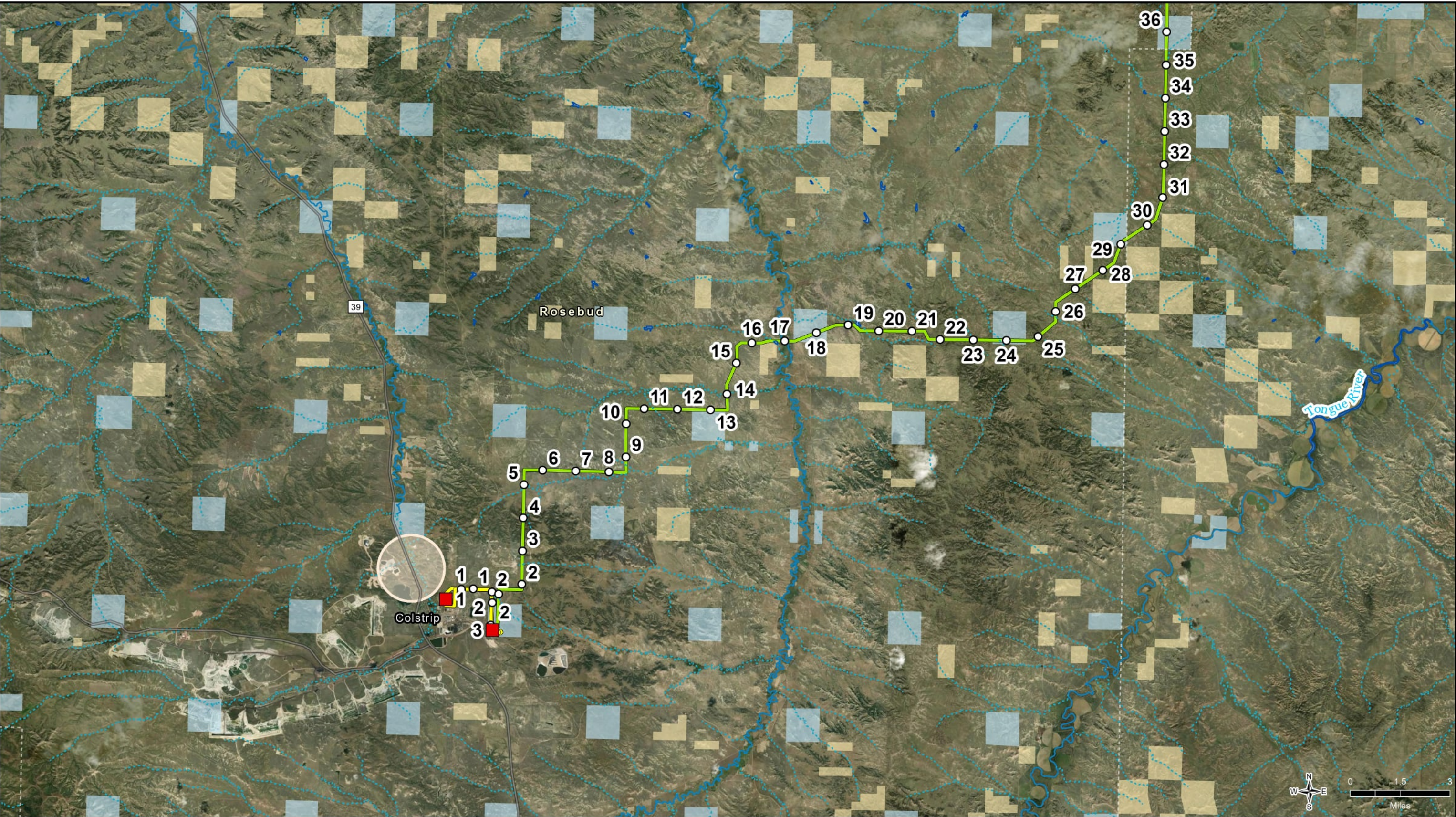
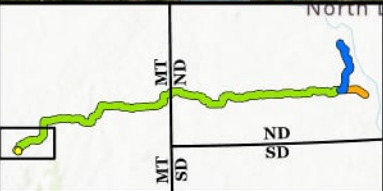
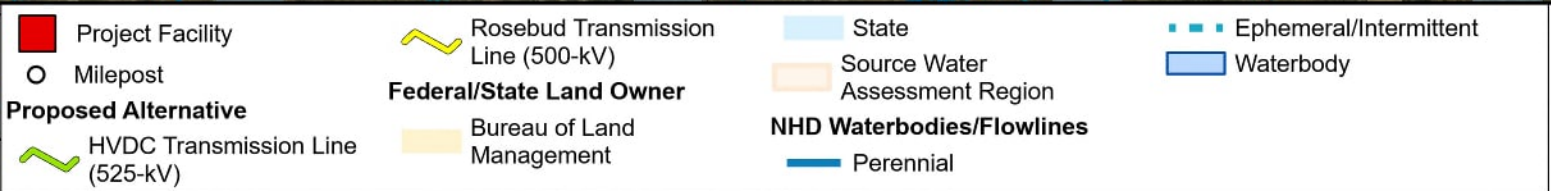


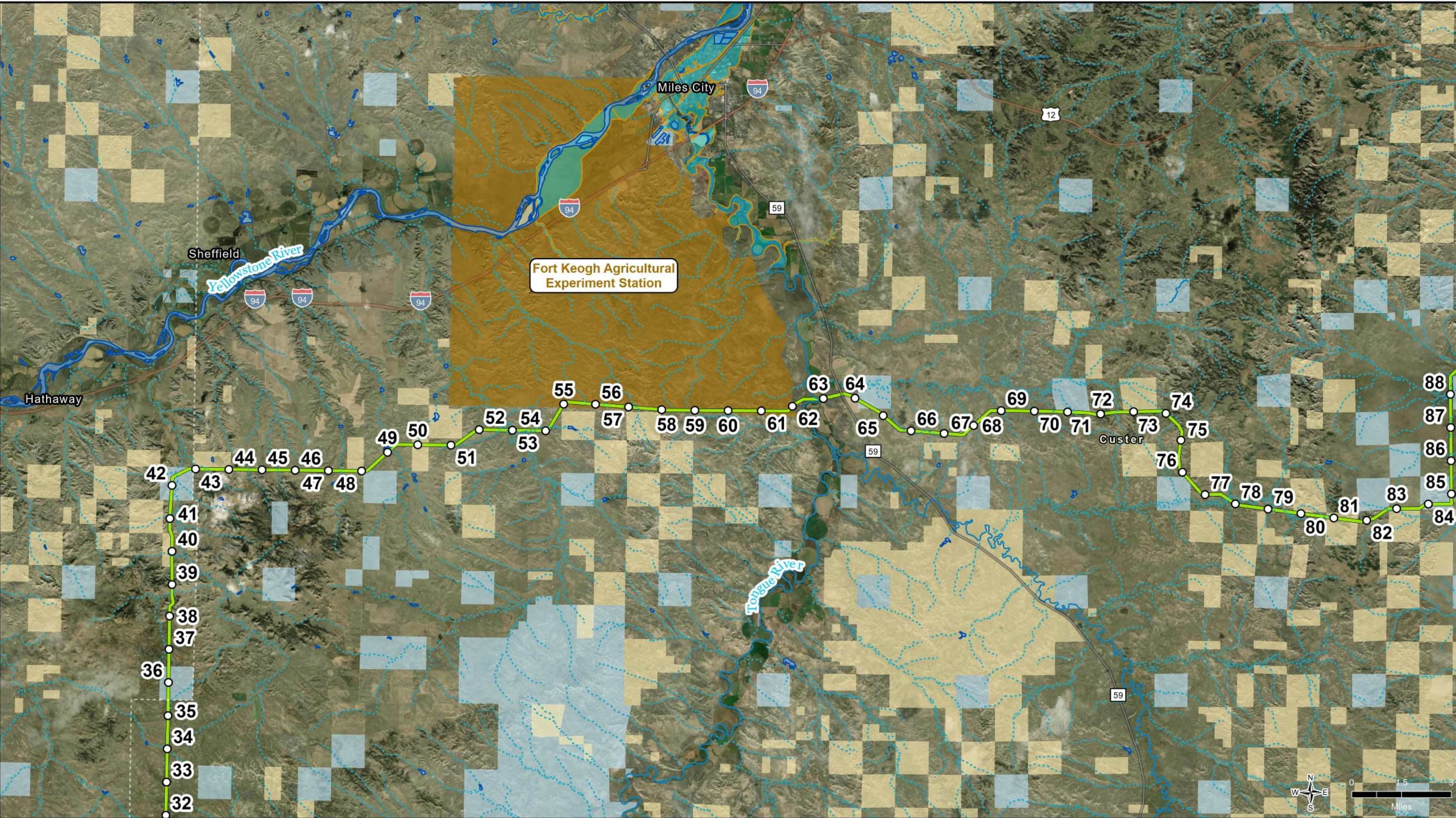
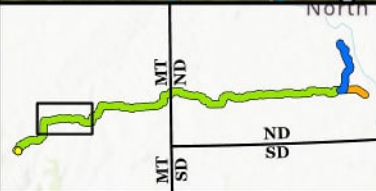


Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 1 of 10



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○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Federal/State Land Owner

- Agriculture Research Service
- Bureau of Land Management

State

NHD Waterbodies/Flowlines

- Perennial
- Ephemeral/Intermittent

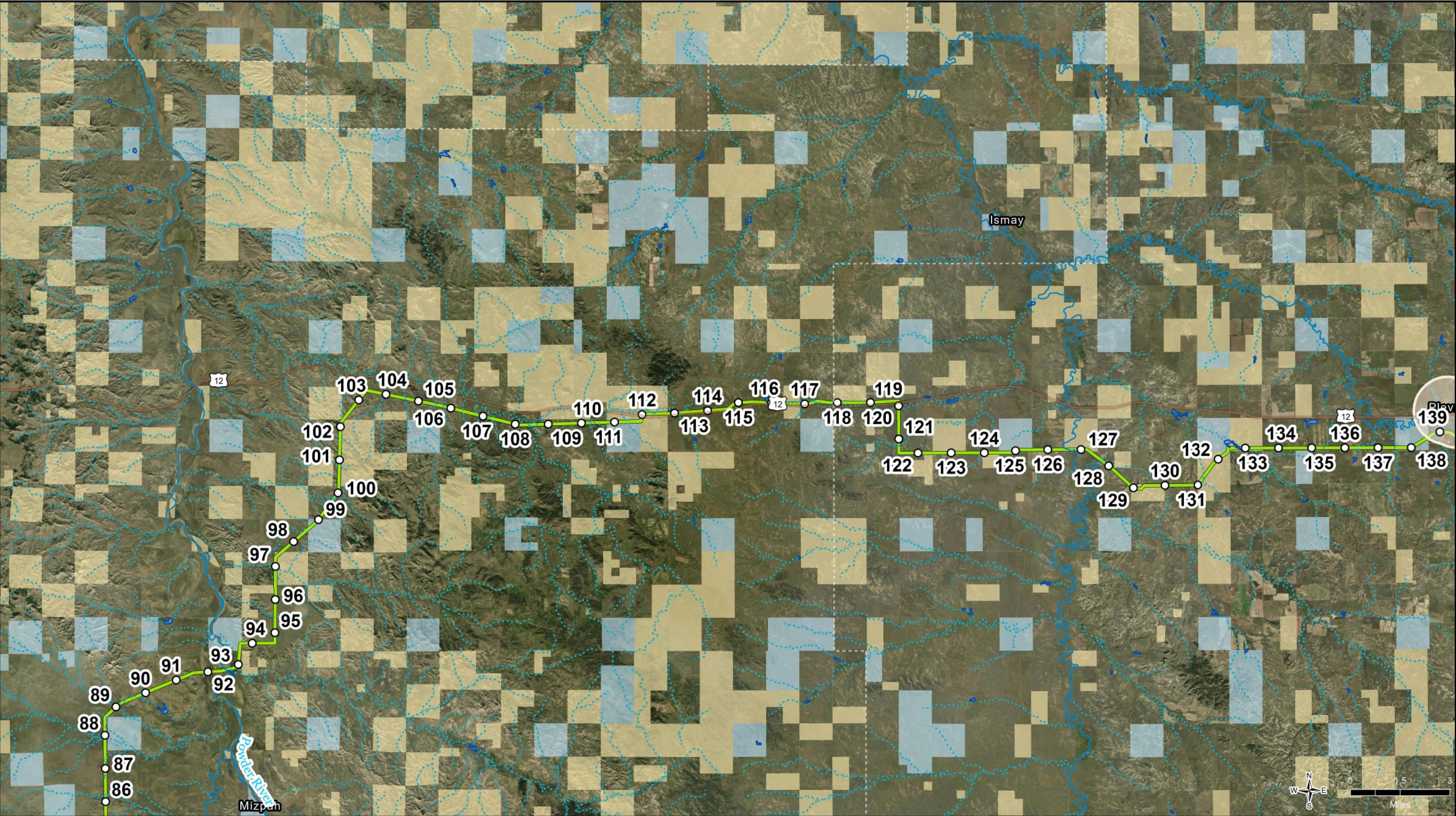
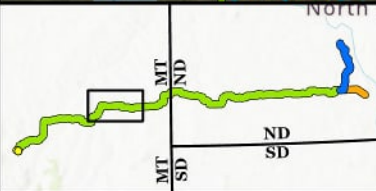
FEMA Floodplain

- 100-Year Floodplain (1% Annual Chance Flood Hazard)

Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 2 of 10

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<p>○ Milepost</p> <p>Proposed Alternative</p> <p>HVDC Transmission Line (525-kV)</p>	<p>Federal/State Land Owner</p> <p>Bureau of Land Management</p> <p>State</p>	<p>Source Water Assessment Region</p> <p>NHD Waterbodies/Flowlines</p> <p>Perennial</p>	<p>Ephemeral/Intermittent</p> <p>Waterbody</p>
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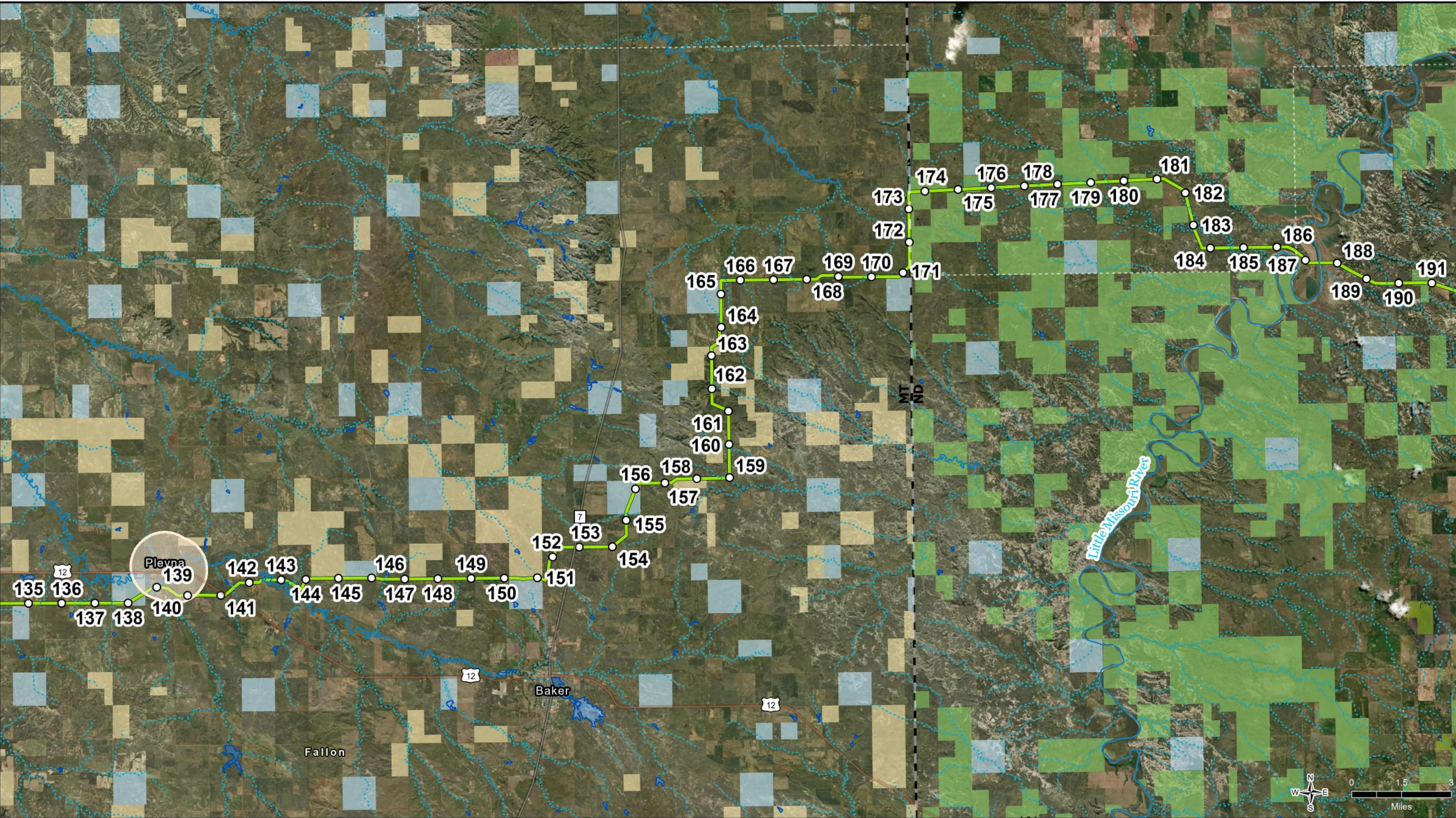
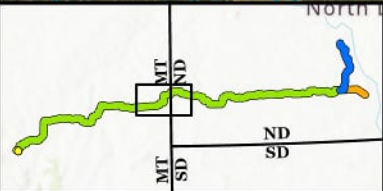


Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 3 of 10



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○ Milepost
Proposed Alternative
HVDC Transmission Line
(525-kV)

Federal/State Land Owner
Bureau of Land Management
State

USDA Forest Service
Source Water
Assessment Region

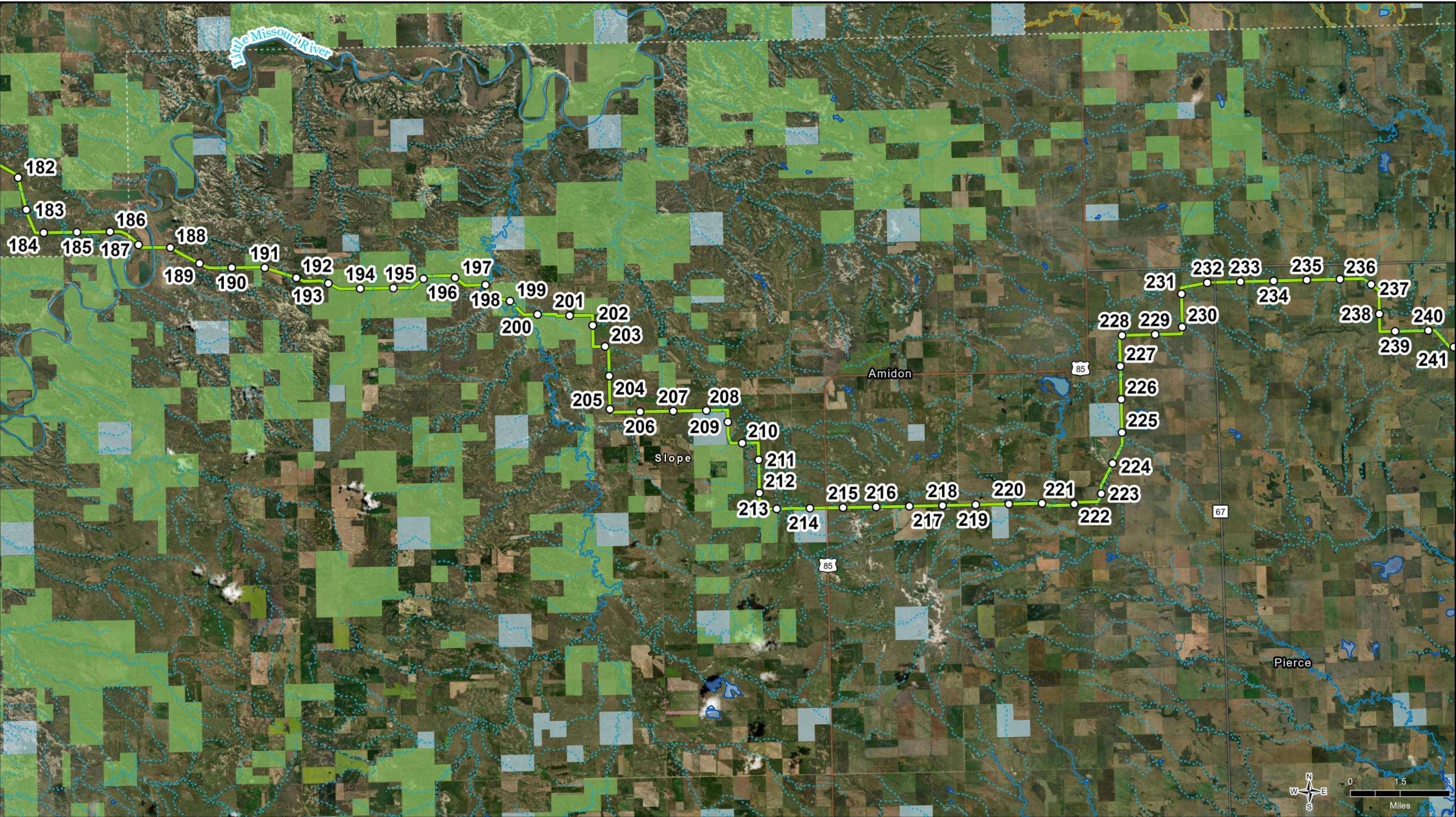
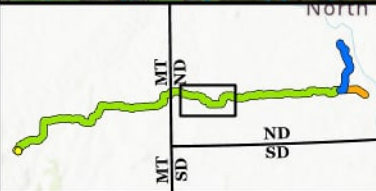
NHD Waterbodies/Flowlines
Perennial
Ephemeral/Intermittent
Waterbody



Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 4 of 10



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<p>○ Milepost</p> <p>Proposed Alternative</p> <p>HVDC Transmission Line (525-kV)</p>	<p>Federal/State Land Owner</p> <p>State</p> <p>USDA Forest Service</p>	<p>NHD Waterbodies/Flowlines</p> <p>Perennial</p> <p>Ephemeral/Intermittent</p> <p>Waterbody</p>	<p>FEMA Floodplain</p> <p>100-Year Floodplain (1% Annual Chance Flood Hazard)</p>
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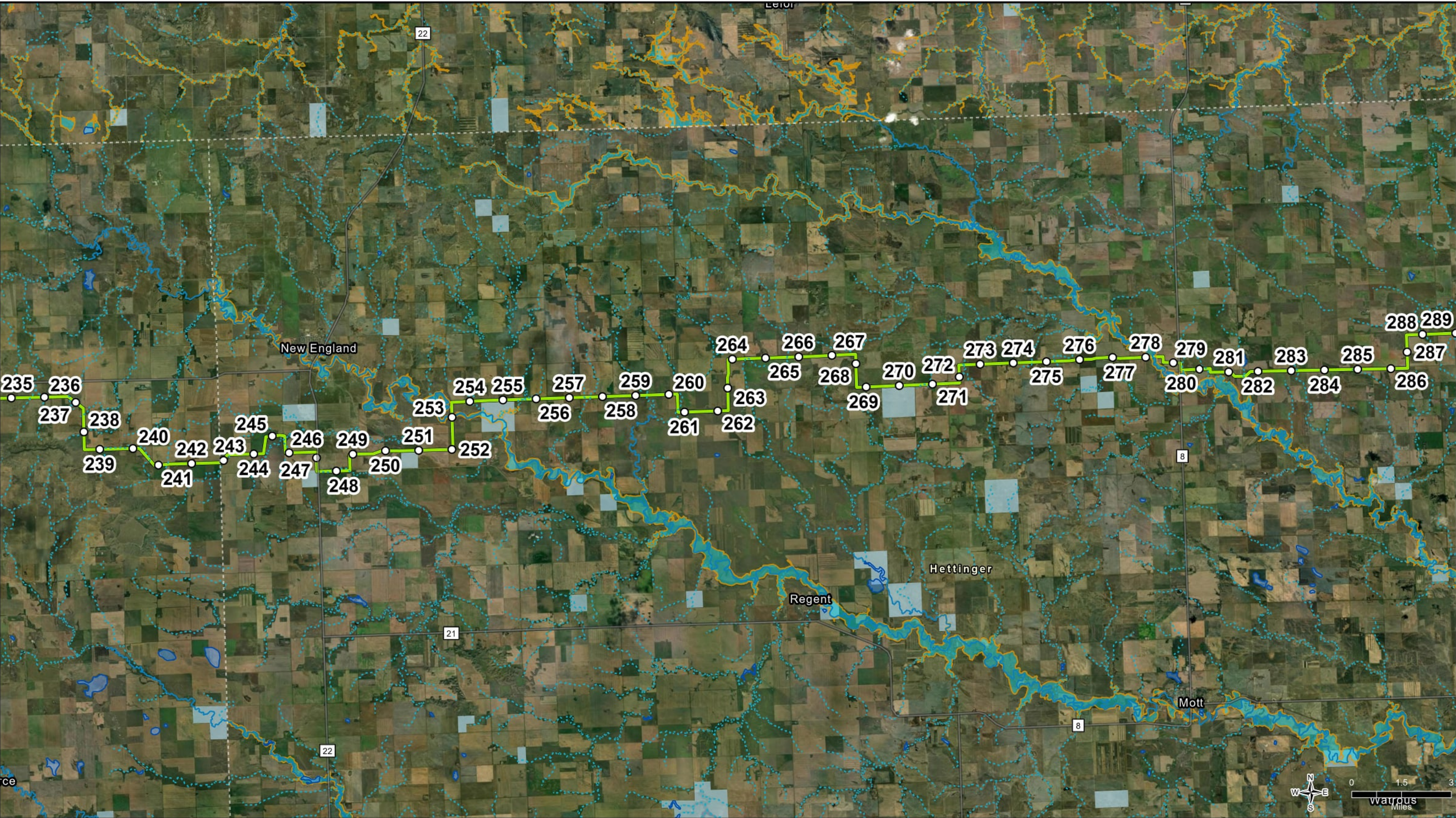
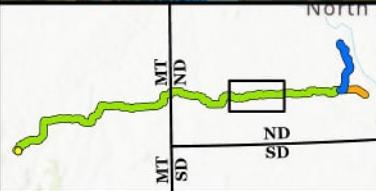
Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 5 of 10



DEQ
Montana Department of Environmental Quality

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<p>○ Milepost</p> <p>Proposed Alternative</p> <p> HVDC Transmission Line (525-kV)</p>	<p>Federal/State Land Owner</p> <p> State</p> <p>NHD Waterbodies/Flowlines</p> <p> Perennial</p>	<p> Ephemeral/Intermittent</p> <p> Waterbody</p>	<p>FEMA Floodplain</p> <p> 100-Year Floodplain (1% Annual Chance Flood Hazard)</p>
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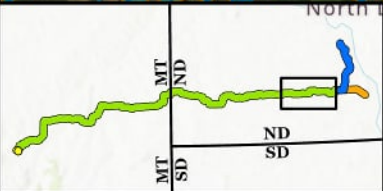


Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 6 of 10



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<p>○ Milepost</p> <p>Proposed Alternative</p> <p> HVDC Transmission Line (525-kV)</p>	<p>Federal/State Land Owner</p> <p> Bureau of Land Management</p> <p> State</p>	<p> Source Water Protection Area</p> <p>NHD Waterbodies/Flowlines</p> <p> Perennial</p> <p> Ephemeral/Intermittent</p>	<p> Waterbody</p> <p>FEMA Floodplain</p> <p> 100-Year Floodplain (1% Annual Chance Flood Hazard)</p>
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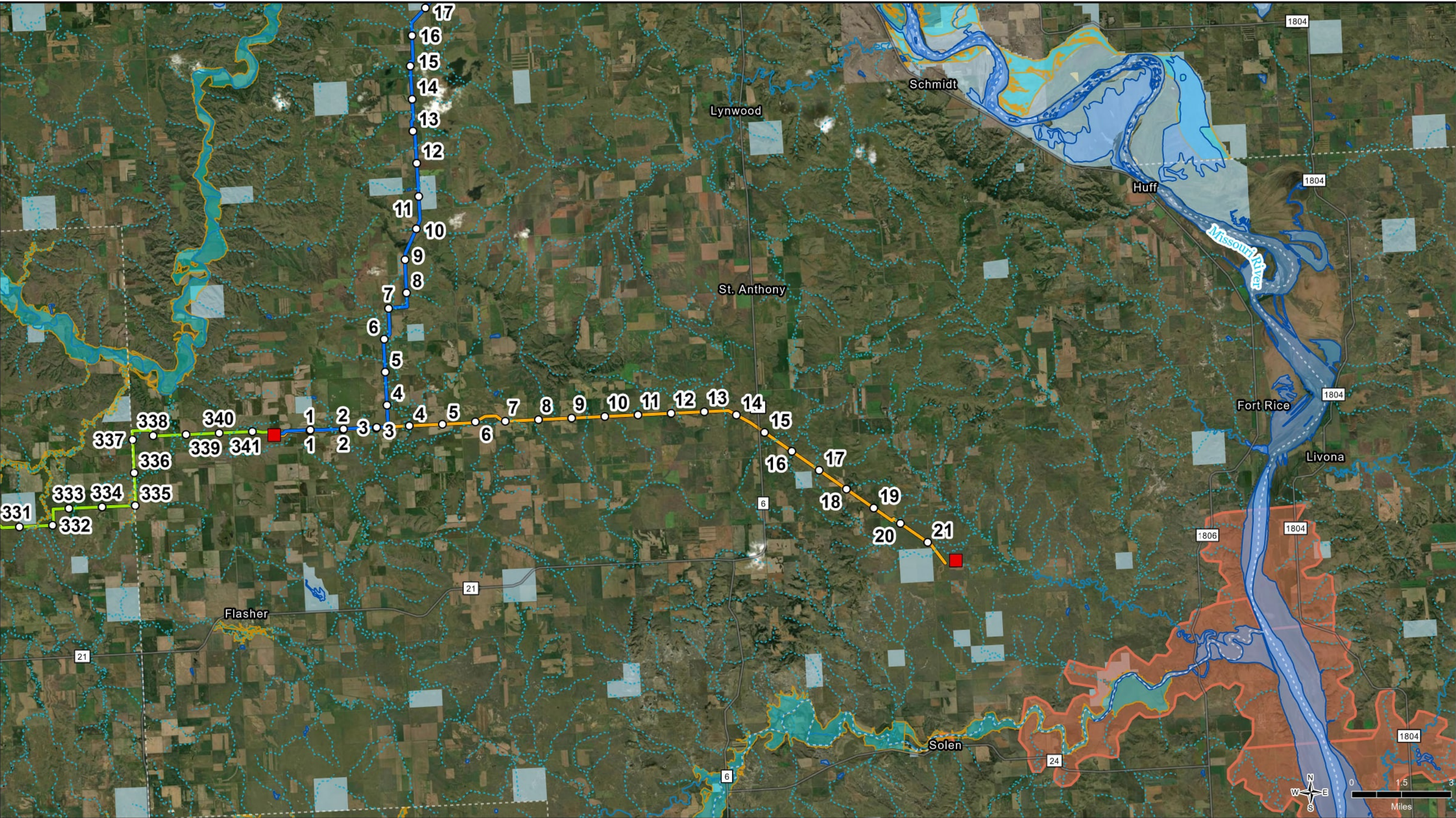
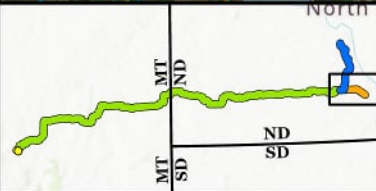


Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 7 of 10



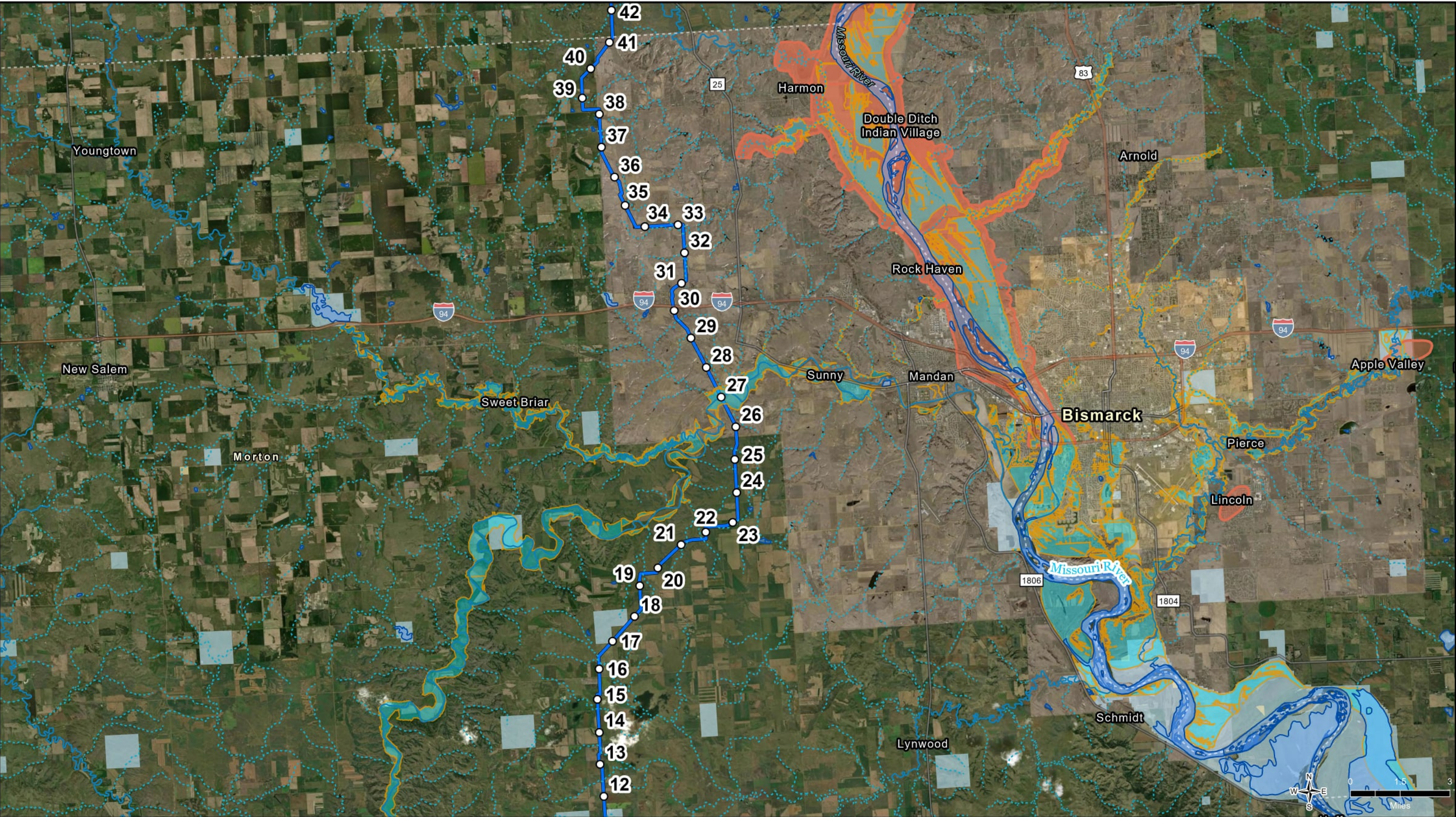
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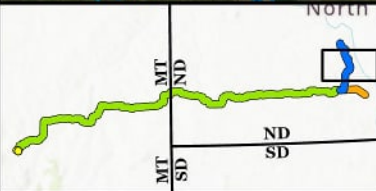
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Project Facility	Morton Transmission Line (345-kV)	Federal/State Land Owner Bureau of Land Management State	Source Water Protection Area	Waterbody
Milepost	Oliver Transmission Line (345-kV)		NHD Waterbodies/Flowlines Perennial Ephemeral/Intermittent	FEMA Floodplain 100-Year Floodplain (1% Annual Chance Flood Hazard)
Proposed Alternative HVDC Transmission Line (525-kV)				

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MT ND
MT SD
ND SD

○ Milepost

Proposed Alternative

Oliver Transmission Line (345-kV)

Federal/State Land Owner

Bureau of Land Management

State

Source Water Protection Area

NHD Waterbodies/Flowlines

Perennial

Ephemeral/Intermittent

Waterbody

FEMA Floodplain

100-Year Floodplain (1% Annual Chance Flood Hazard)

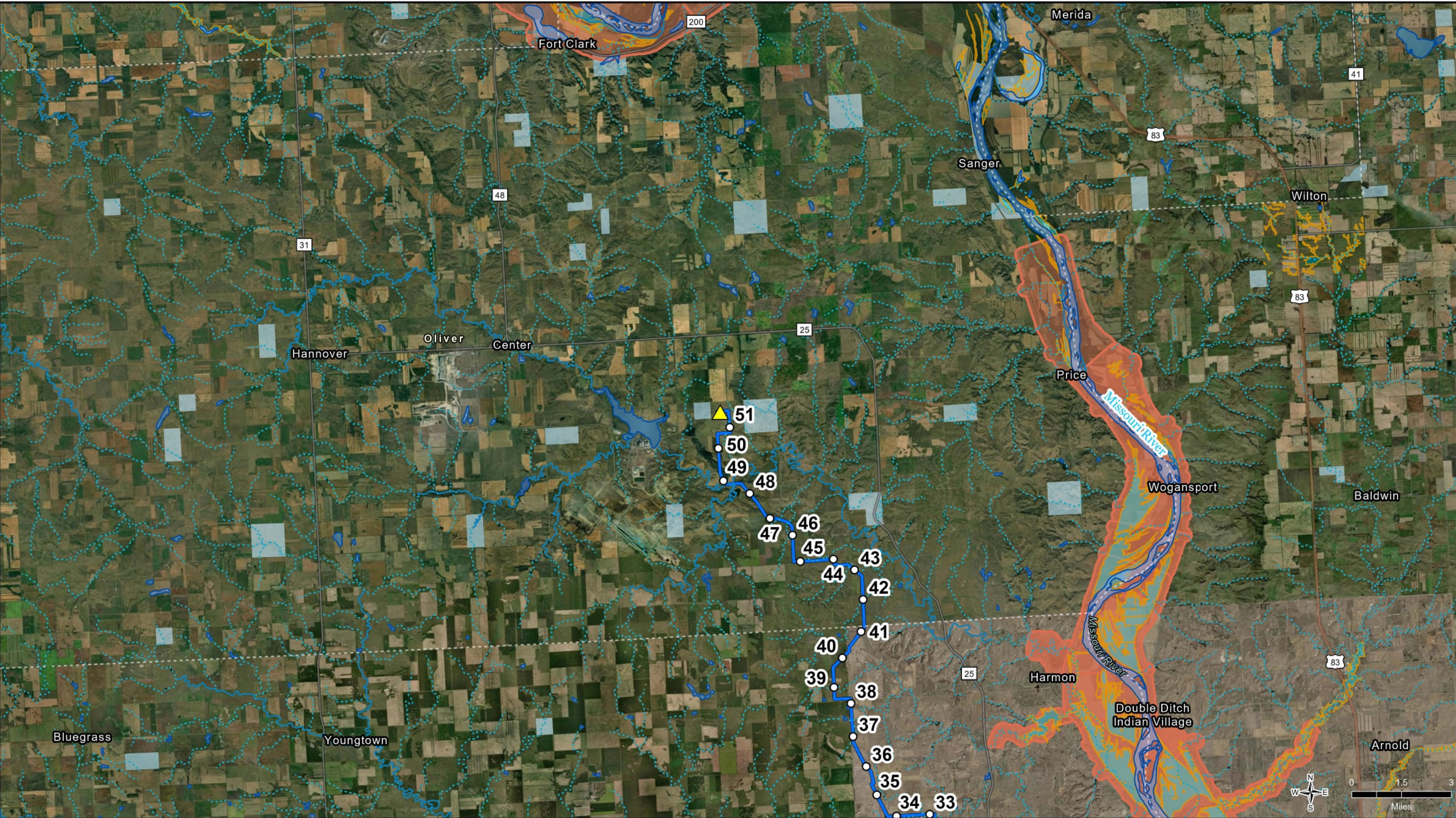
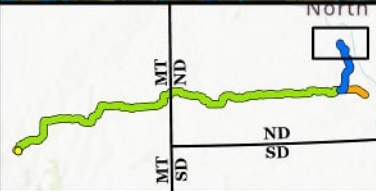


Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 9 of 10

DEQ
North Dakota Department of Environmental Quality

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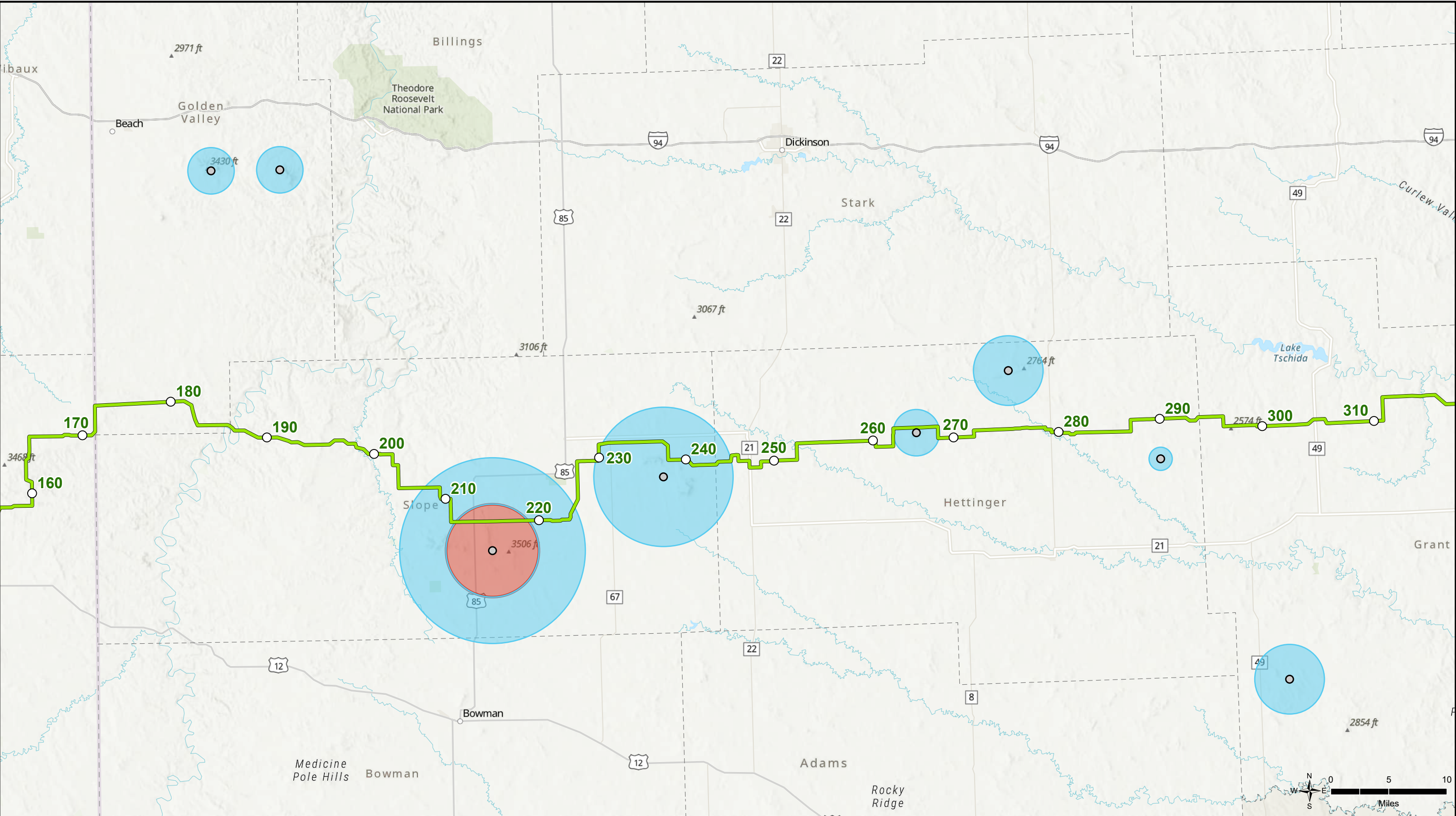
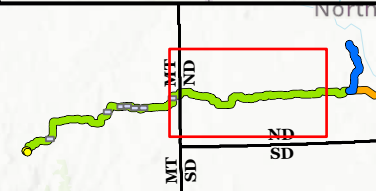


Interconnection Location (Not Part of Project)	Federal/State Land Owner	Source Water Protection Area	Waterbody
Milepost	Bureau of Land Management	NHD Waterbodies/Flowlines	FEMA Floodplain
Proposed Alternative	State	Perennial	100-Year Floodplain (1% Annual Chance Flood Hazard)
Oliver Transmission Line (345-kV)		Ephemeral/Intermittent	

Figure 3.6-2
Surface Water Hydrology
North Plains Connector
Montana and North Dakota
Page 10 of 10

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○ Milepost
● Township Section

Aggregate Source Limitations

■ Do Not Use
■ Written Approval Needed

Proposed Alternative

— HVDC Transmission Line (525-kV)
— Morton Transmission Line (345-kV)
— Oliver Transmission Line (345-kV)
— Rosebud Transmission Line (500-kV)



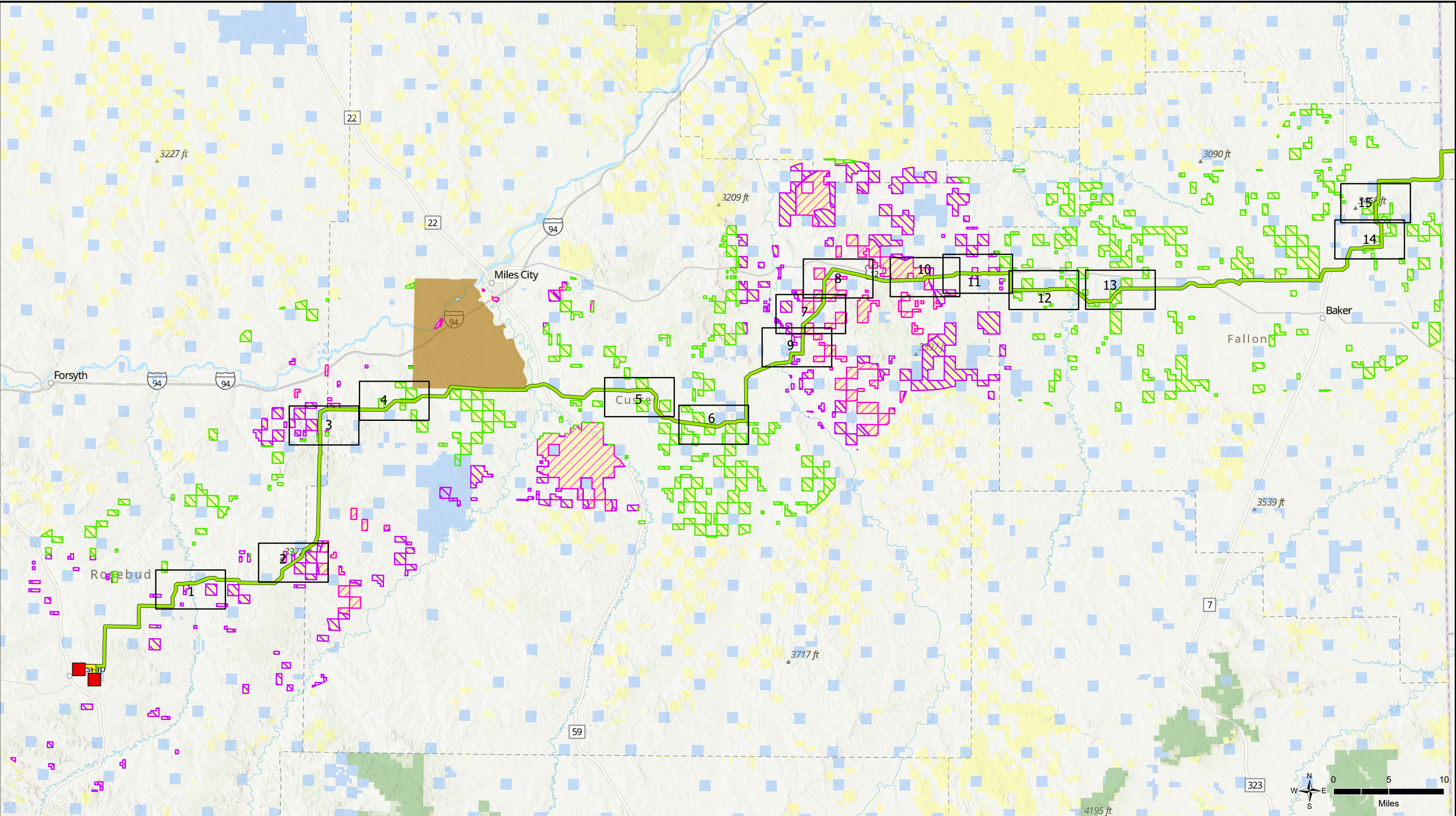
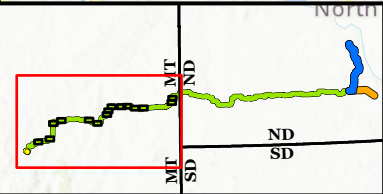
Figure 3.7-1
Aggregate Source Limitations
North Plains Connector
North Dakota



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 Project Facility
Proposed Alternative
 HVDC Transmission Line (525-kV)

 Rosebud Transmission Line (500-kV)
Land Ownership
 Montana State Trust Lands

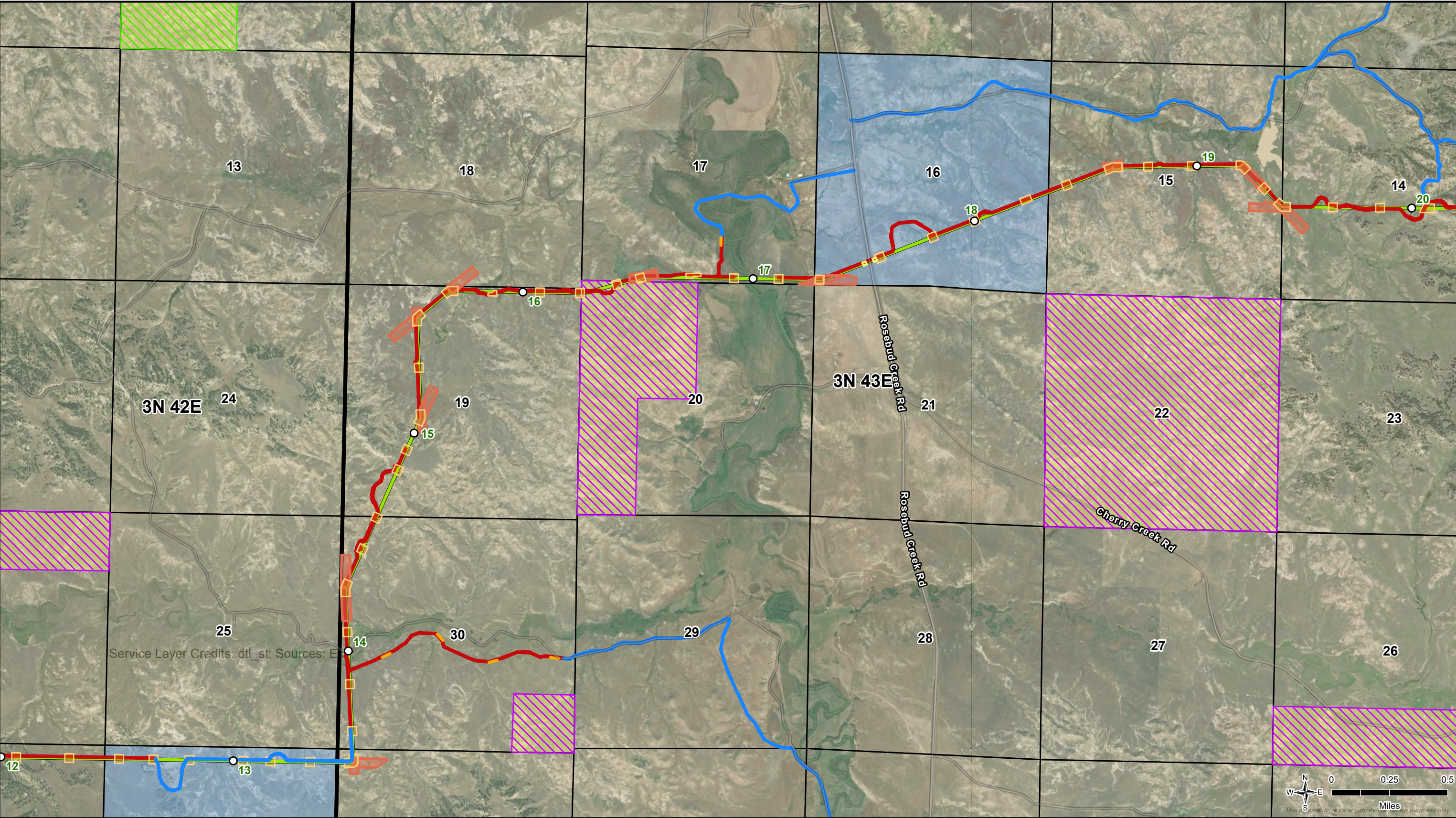
 Bureau of Land Management
 USDA Forest Service
 USDA Agriculture Research Service

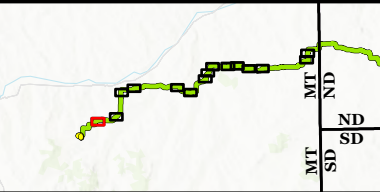


Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page Index



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○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Land Ownership

- Montana State Trust Lands
- Bureau of Land Management

Permanent Impact

- Structure Footprint
- Permanent Access Road

Temporary Impact

- Guard Structure Pad
- Structure Pad

Access Turnaround

- Pulling Site
- Temporary Access Road

BLM VRM Class

- Class III
- Class IV

PLSS

- Township
- Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

Montana

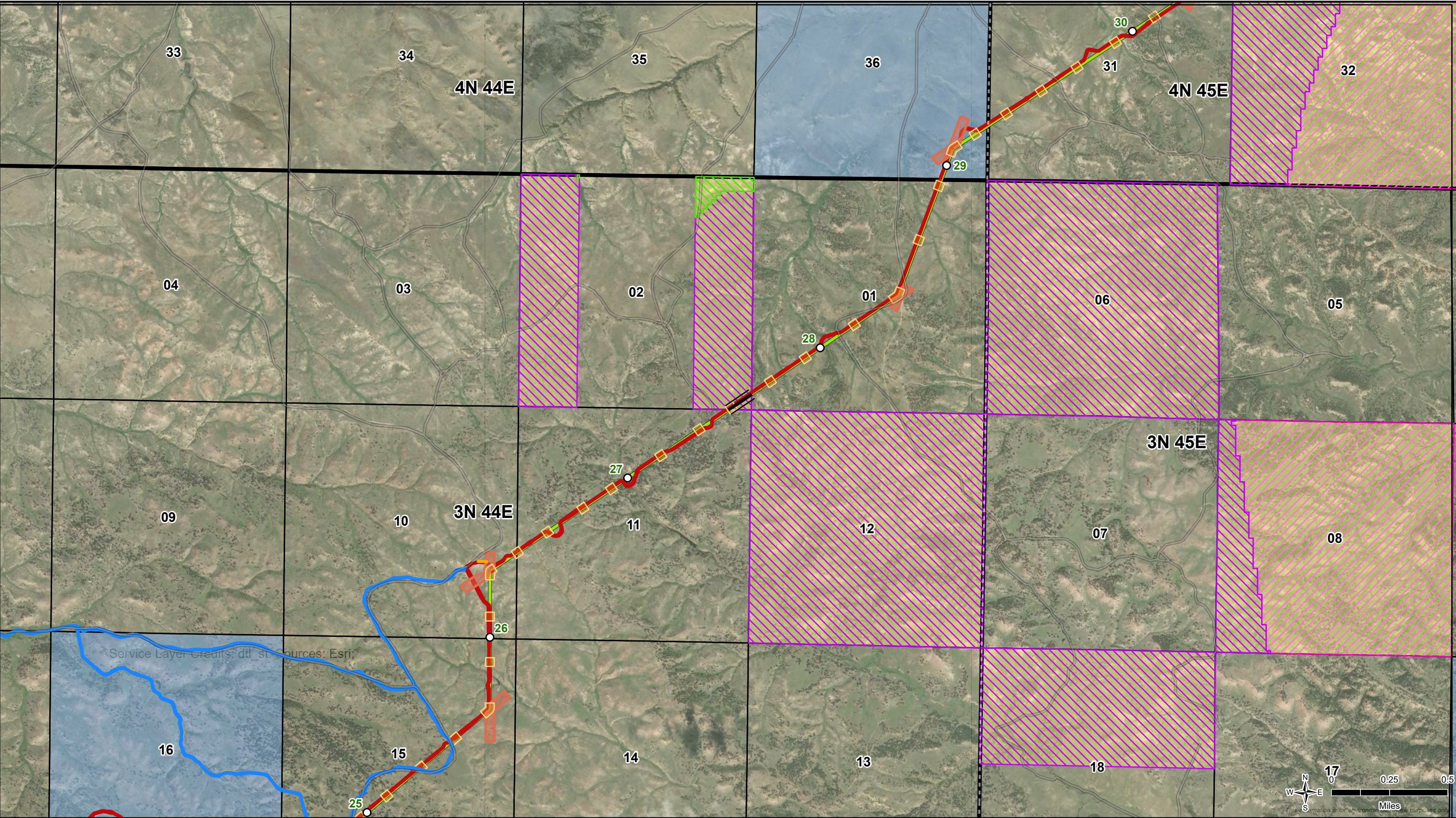
Page 1 of 15



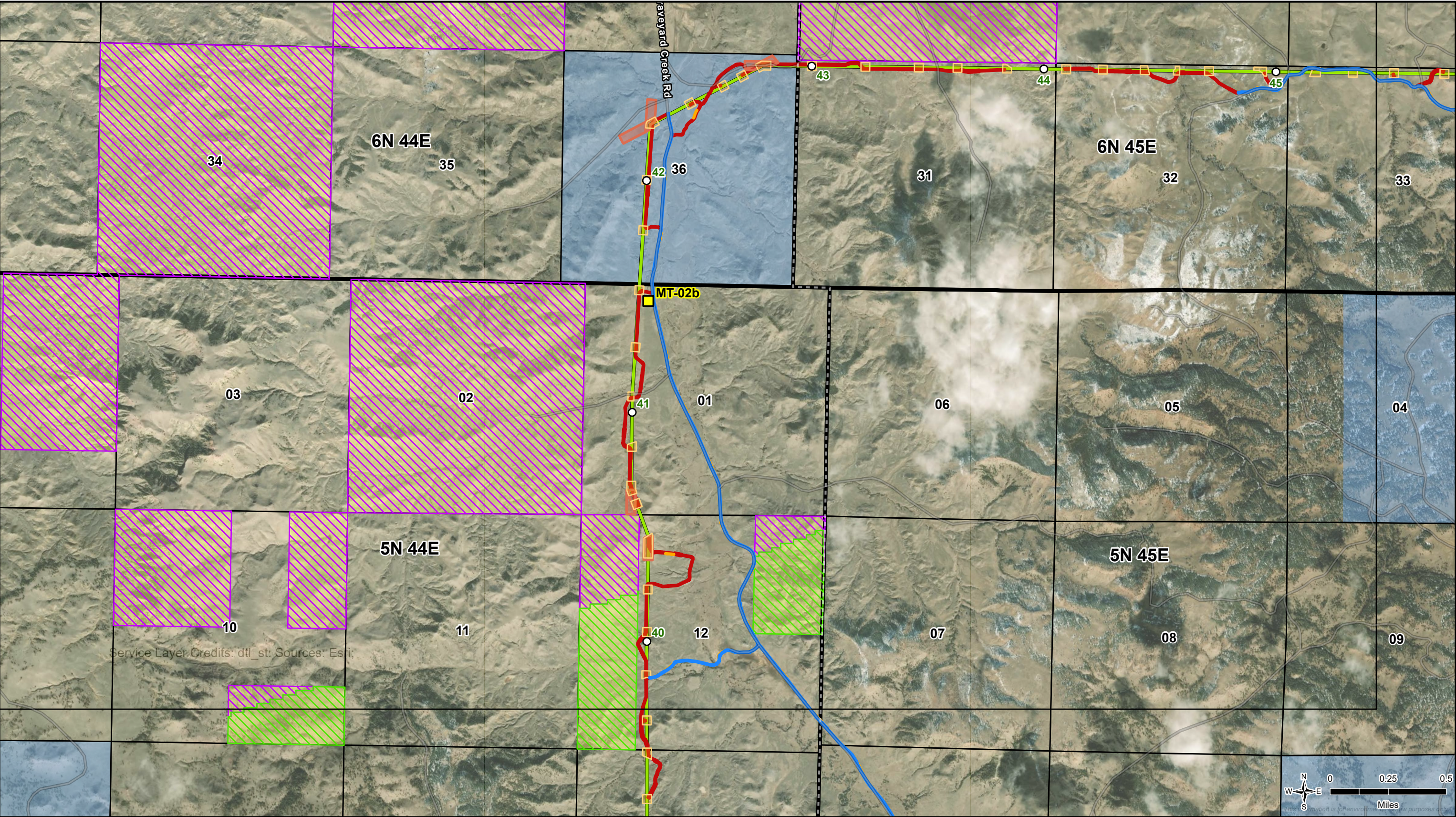
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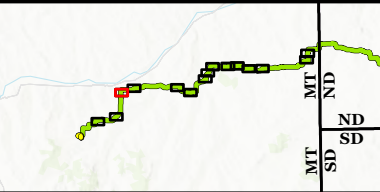
Montana Department of Environmental Quality

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Key Observation Point (KOP)

Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class III

Class IV

PLSS

Township

Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

Montana

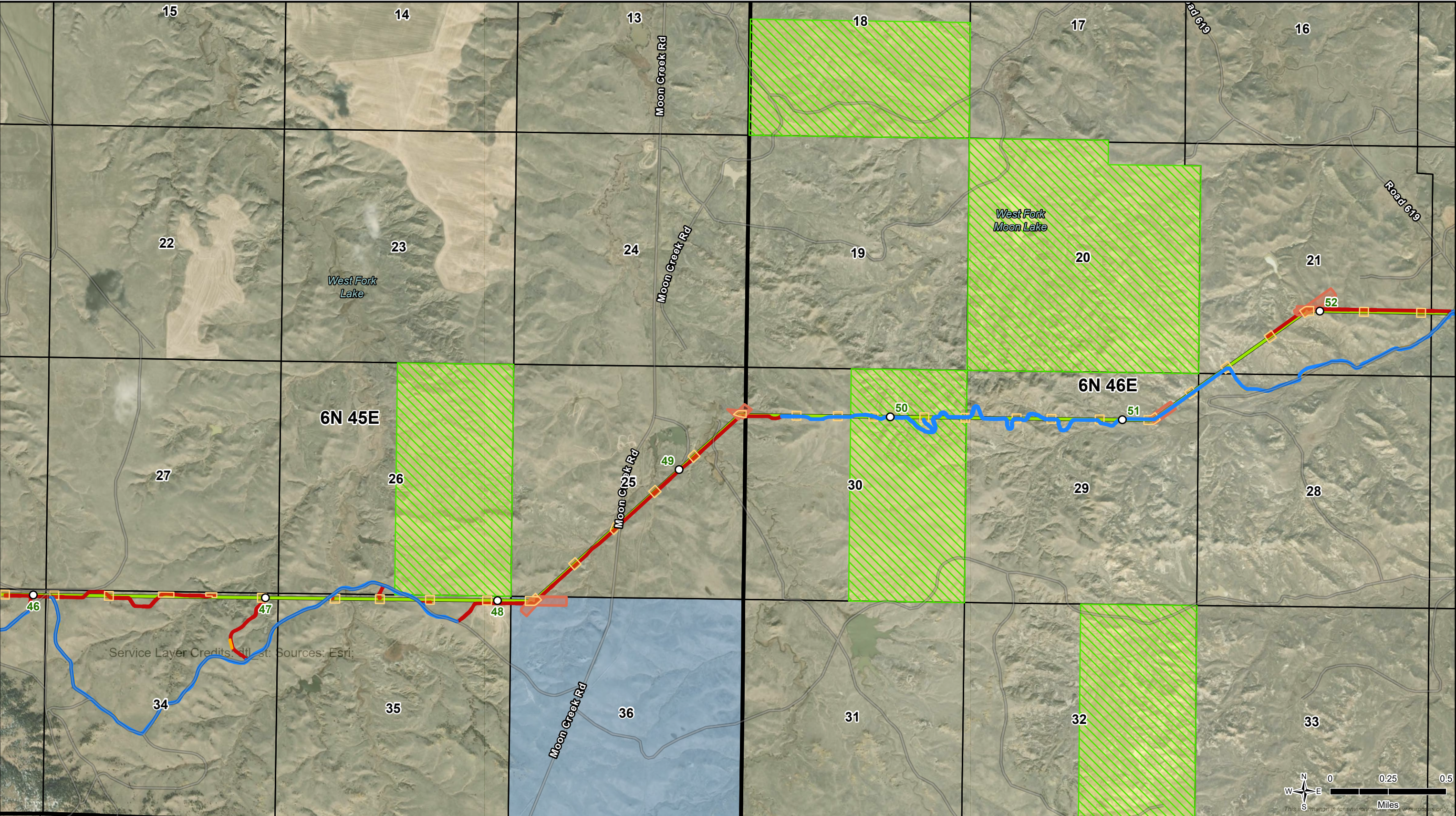
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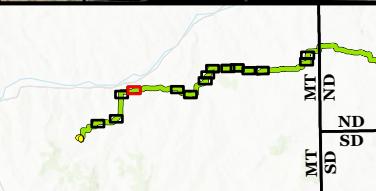


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○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class IV

PLSS

Township

Section

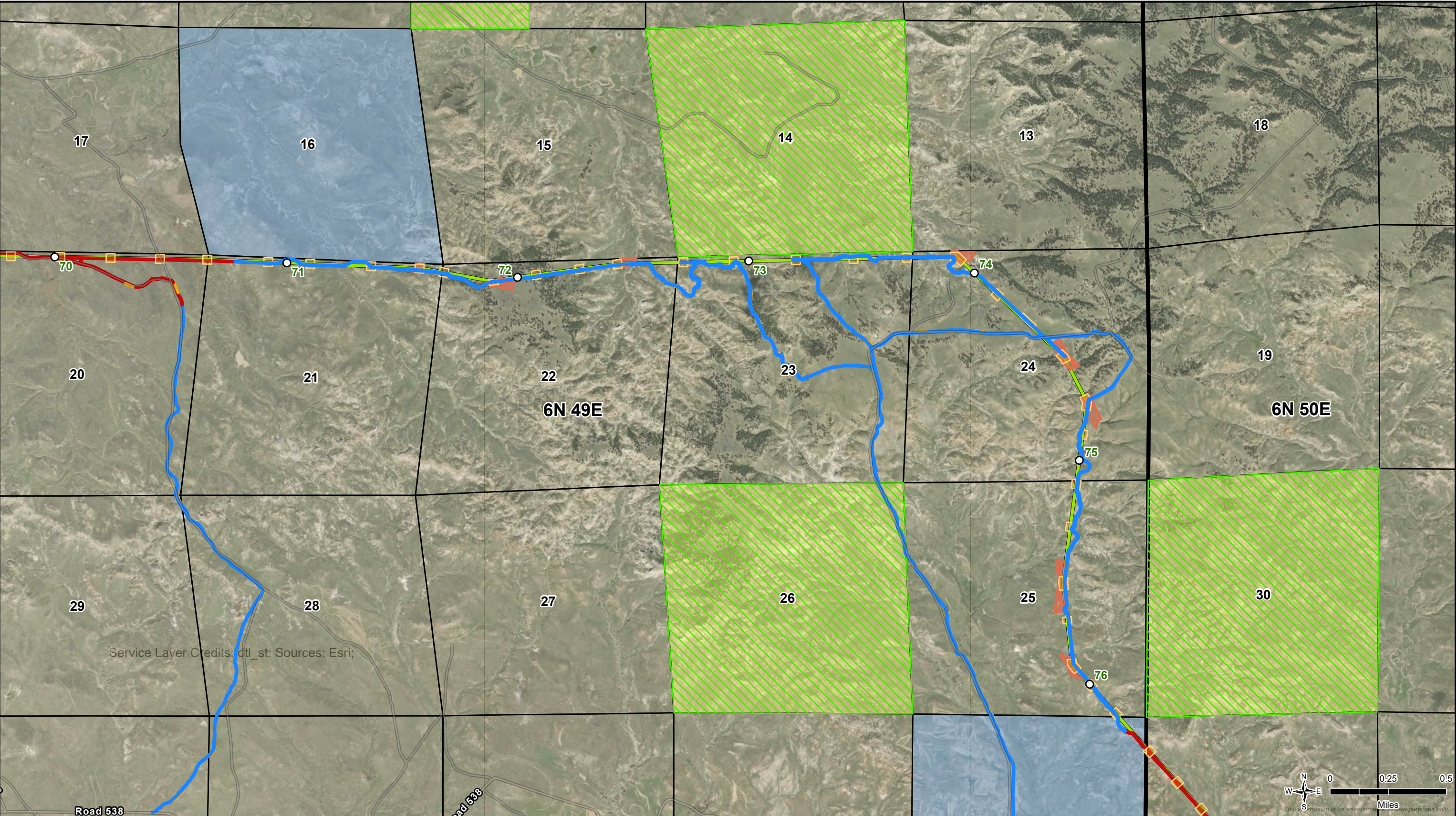


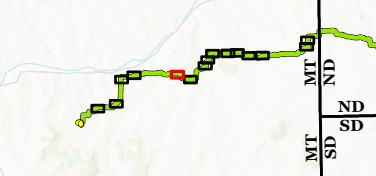
Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page 4 of 15



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○ Milepost
Proposed Alternative
HVDC Transmission Line (525-kV)

Land Ownership

- Montana State Trust Lands
- Bureau of Land Management

Permanent Impact

- Structure Footprint
- Permanent Access Road

Temporary Impact

- Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

- Class IV

PLSS

- Township
- Section

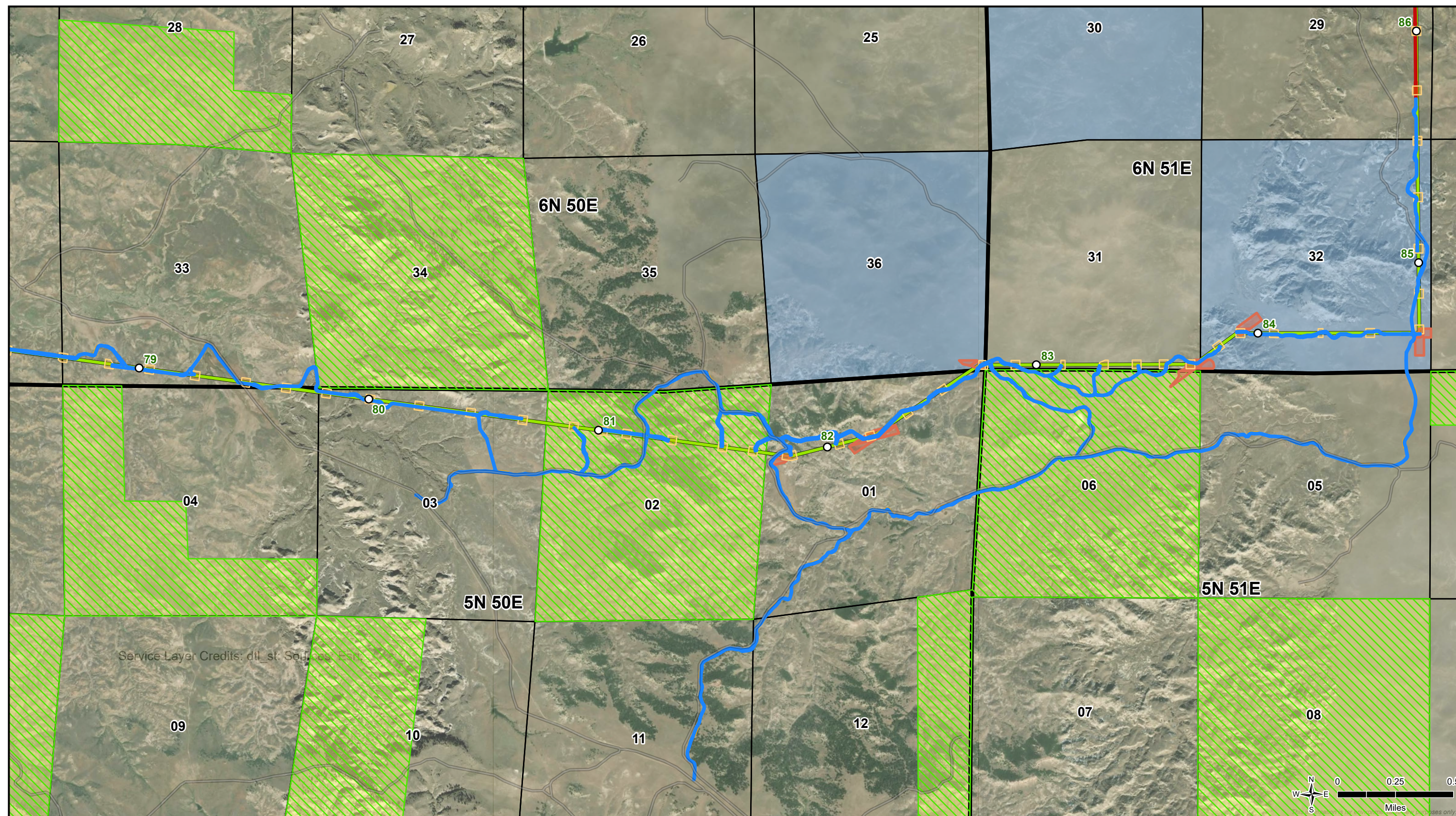
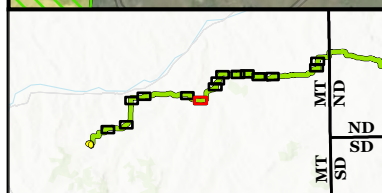


Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page 5 of 15



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Land Ownership

- Montana State Trust Lands
- Bureau of Land Management

Permanent Impact

-  Structure Footprint
-  Permanent Access Road

Temporary Impact

-  Guard Structure Pad

 Structure Pad
 Access Turnaround
 Pulling Site
 Temporary Access Road

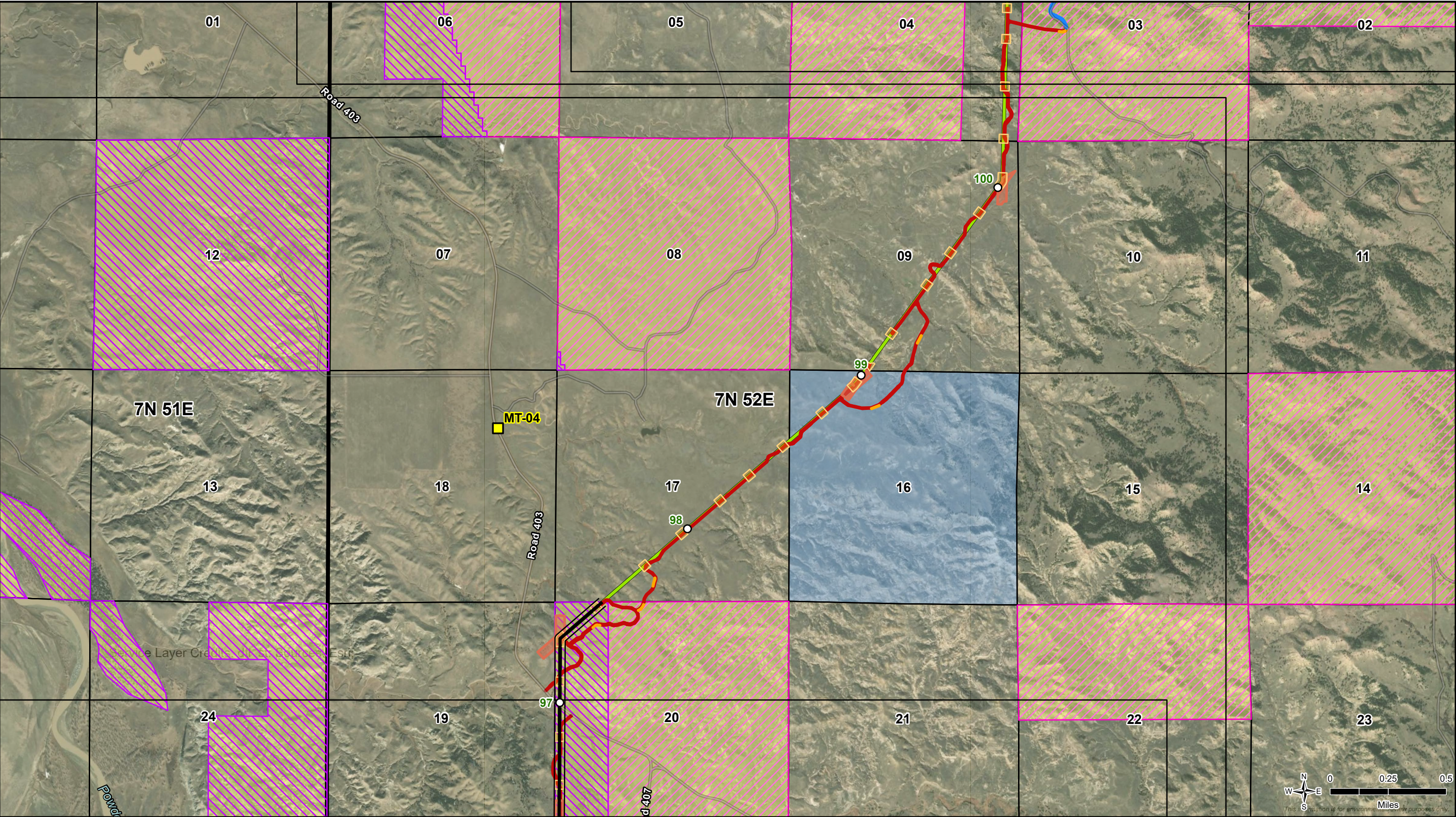
BLM VRM Class
 Class IV
PLSS
 Township
 Section

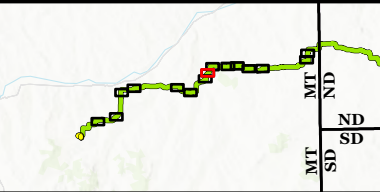


Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page 6 of 15



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Key Observation Point (KOP)
○ Milepost

Proposed Alternative
HVDC Transmission Line (525-kV)

Land Ownership
Montana State Trust Lands
Bureau of Land Management

Route Segment Crossing BLM Land

Permanent Impact
Structure Footprint
Permanent Access Road

Temporary Impact
Guard Structure Pad
Structure Pad

Access Turnaround
Pulling Site
Temporary Access Road

BLM VRM Class
Class II
Class III

PLSS
Township
Section

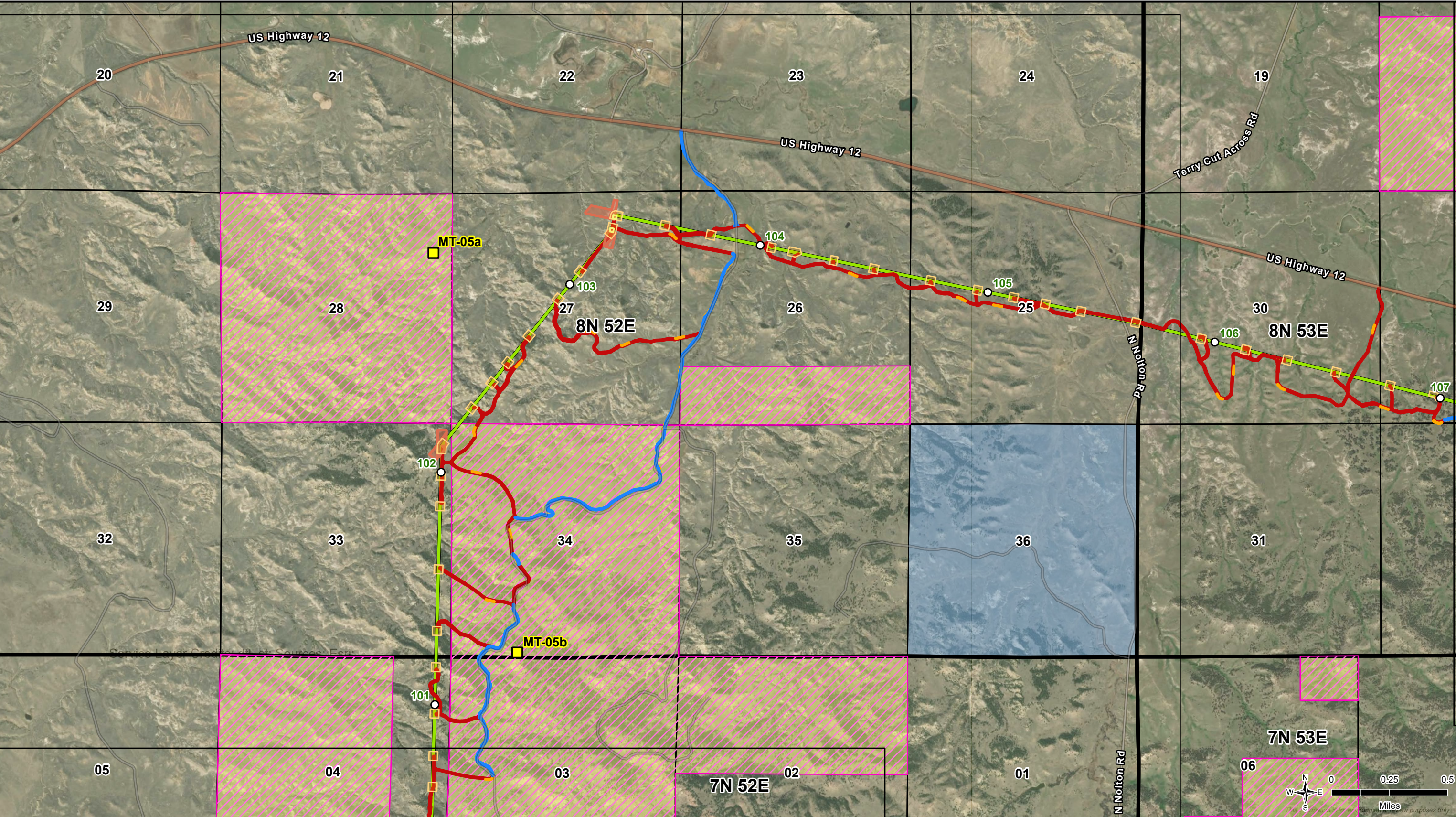


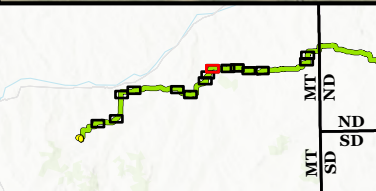
Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
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 Key Observation Point (KOP)  Milepost  Proposed Alternative HVDC Transmission Line (525-kV)	Land Ownership  Montana State Trust Lands  Bureau of Land Management	Permanent Impact  Structure Footprint  Permanent Access Road Temporary Impact  Guard Structure Pad	 Structure Pad  Access Turnaround  Pulling Site  Temporary Access Road	BLM VRM Class  Class II PLSS  Township  Section
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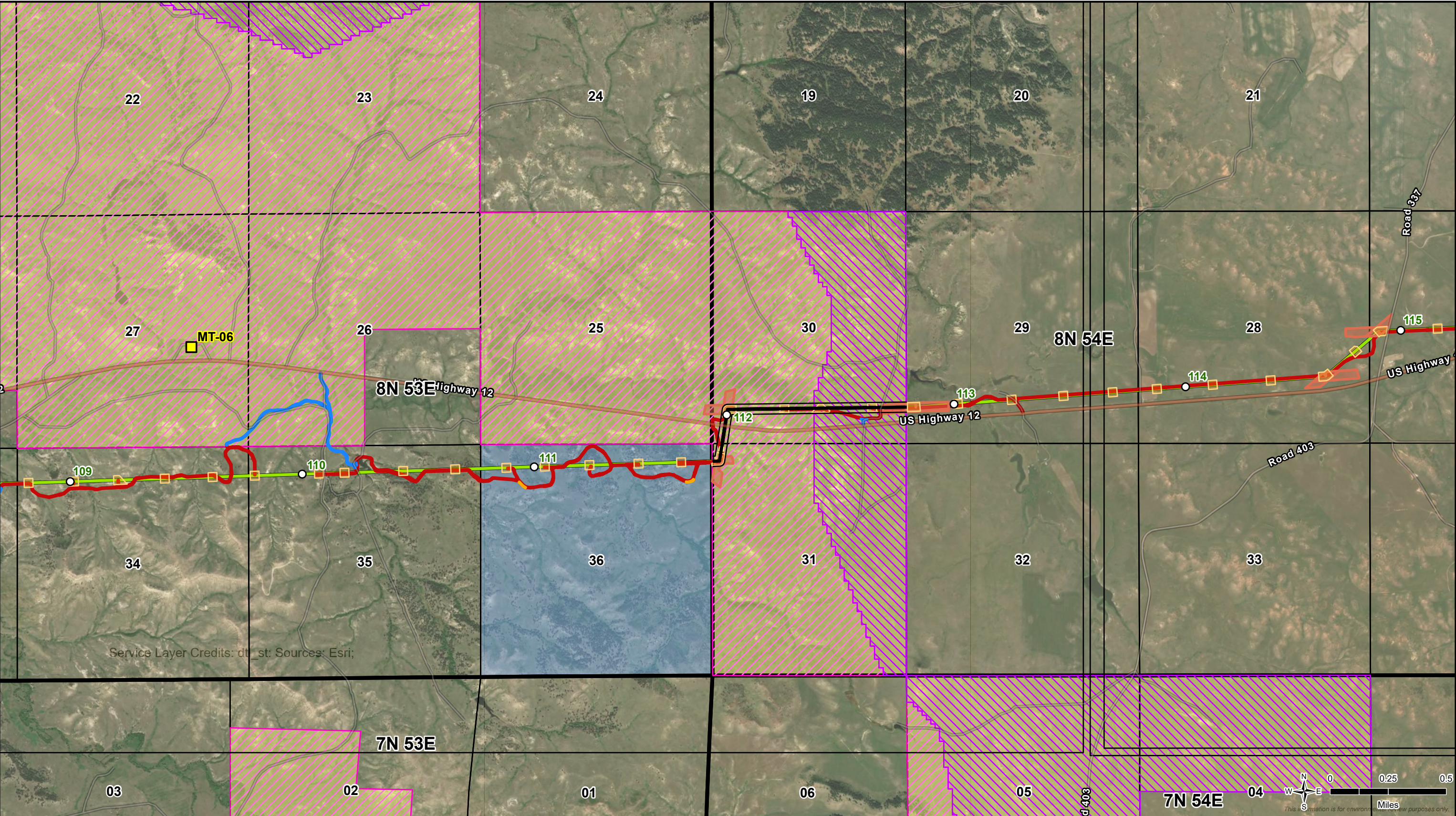


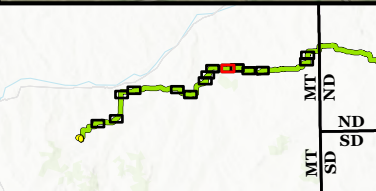
Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page 8 of 15



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Key Observation Point (KOP)

Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Route Segment Crossing BLM Land

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class II

Class III

PLSS

Township

Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

Montana

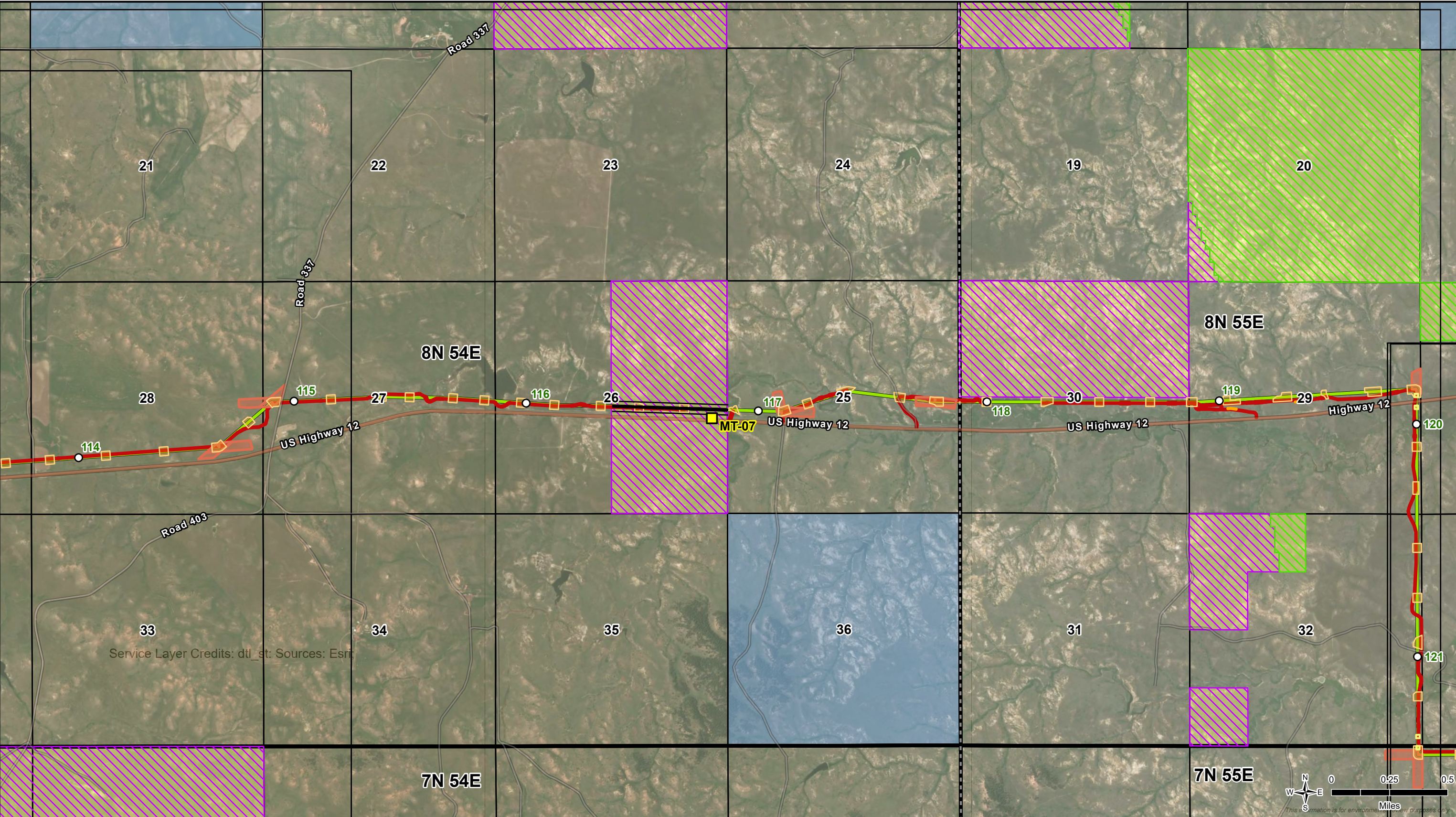
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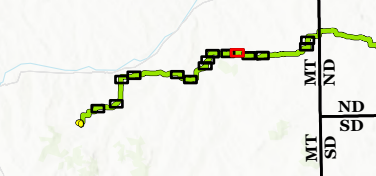


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Key Observation Point (KOP)

Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Route Segment Crossing BLM Land

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class III

Class IV

PLSS

Township

Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

Montana

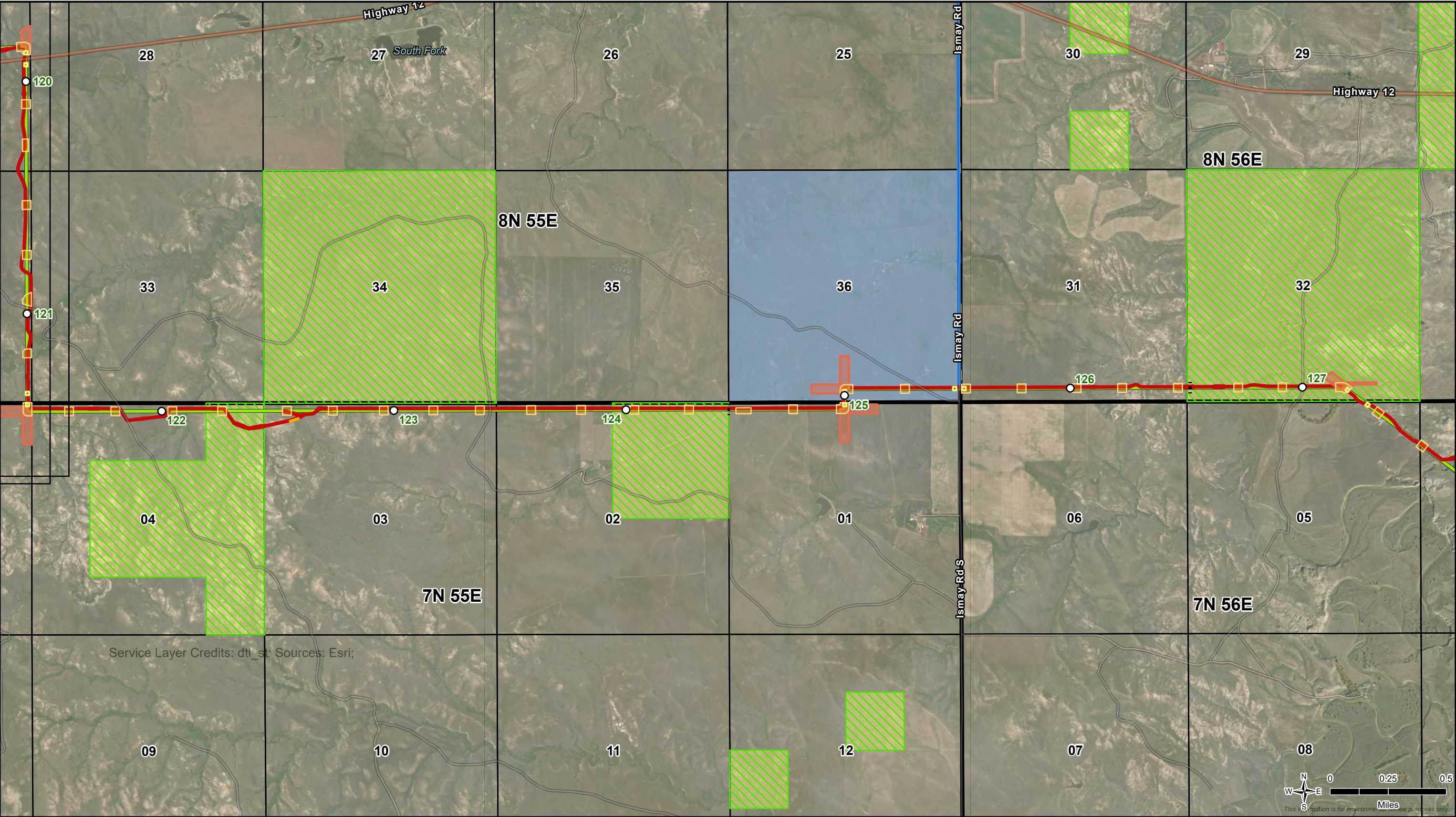
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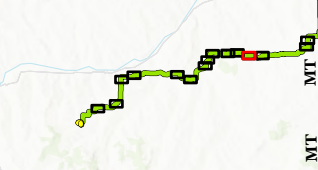
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MT ND
SD SD

○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Route Segment Crossing

BLM Land

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class IV

PLSS

Township

Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

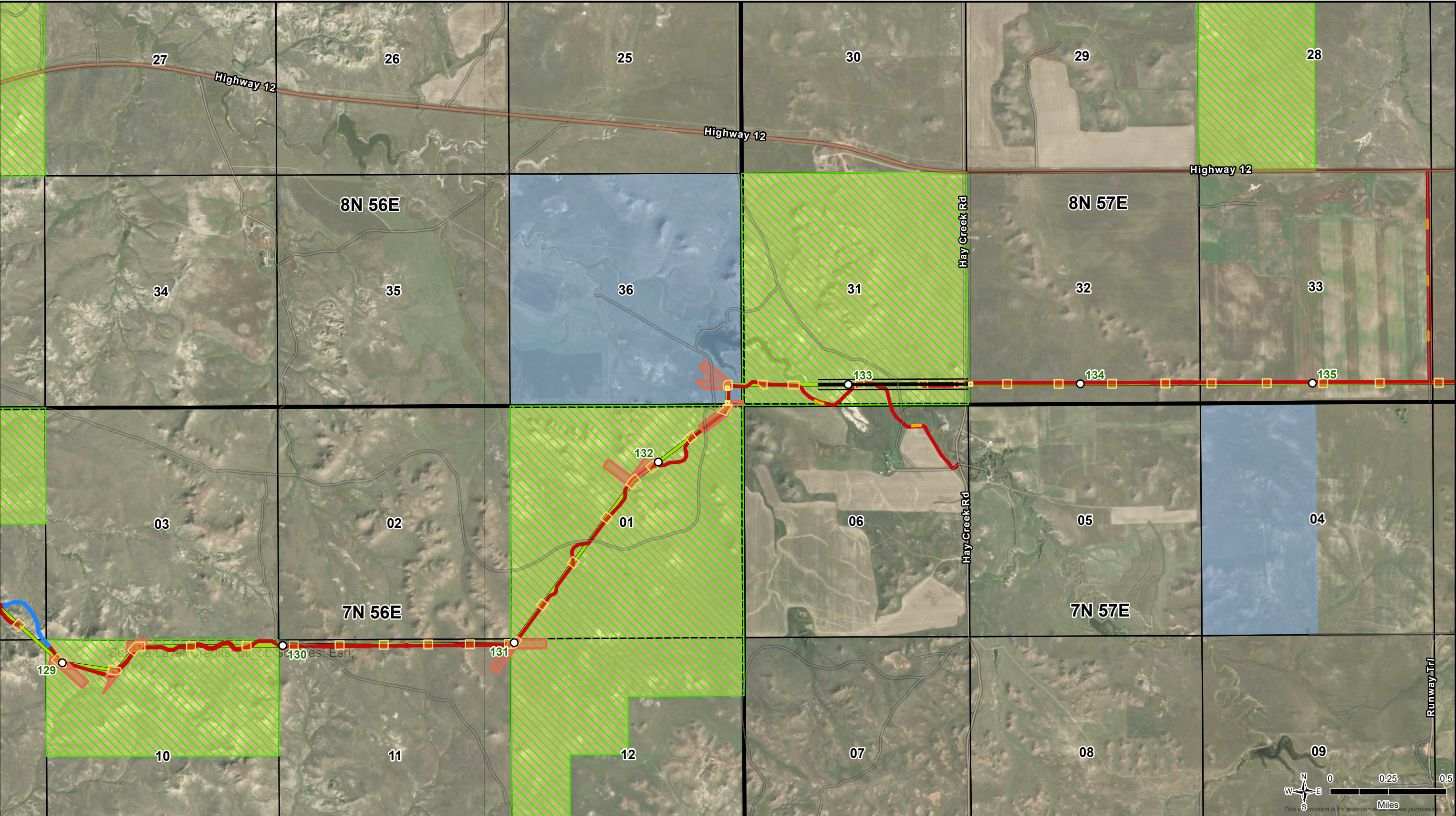
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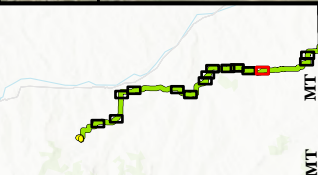
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MT ND
SD

○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Route Segment Crossing BLM Land

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class IV

PLSS

Township

Section

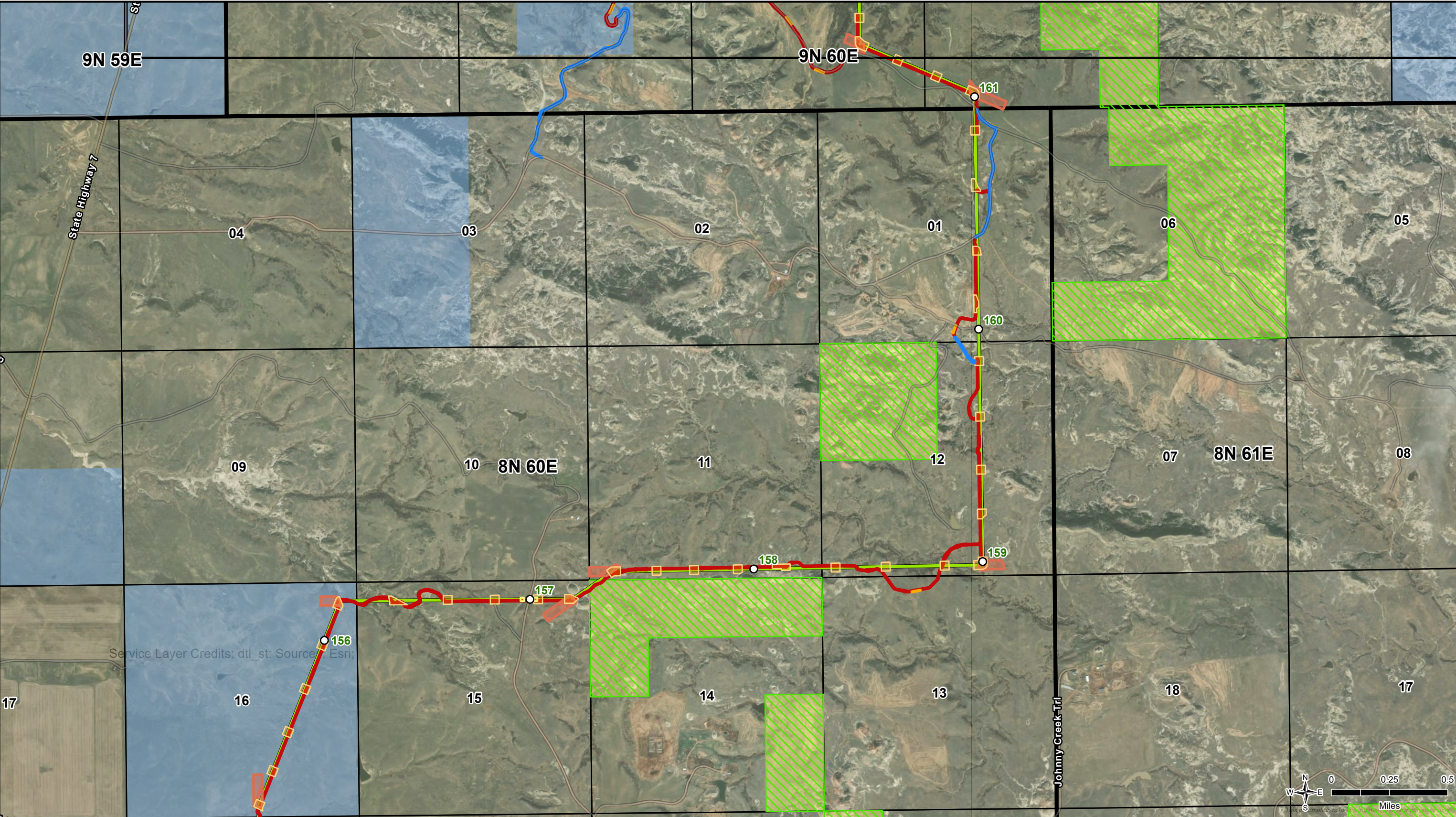


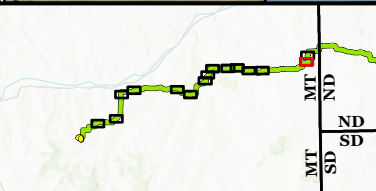
Figure 3.9-1
BLM Visual Resource Management Crossings
North Plains Connector
Montana
Page 13 of 15



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○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Land Ownership

- Montana State Trust Lands
- Bureau of Land Management

Permanent Impact

- Structure Footprint
- Permanent Access Road

Temporary Impact

- Guard Structure Pad

- Structure Pad
- Access Turnaround
- Pulling Site
- Temporary Access Road

BLM VRM Class

- Class IV

PLSS

- Township
- Section



Figure 3.9-1

BLM Visual Resource Management Crossings

North Plains Connector

Montana

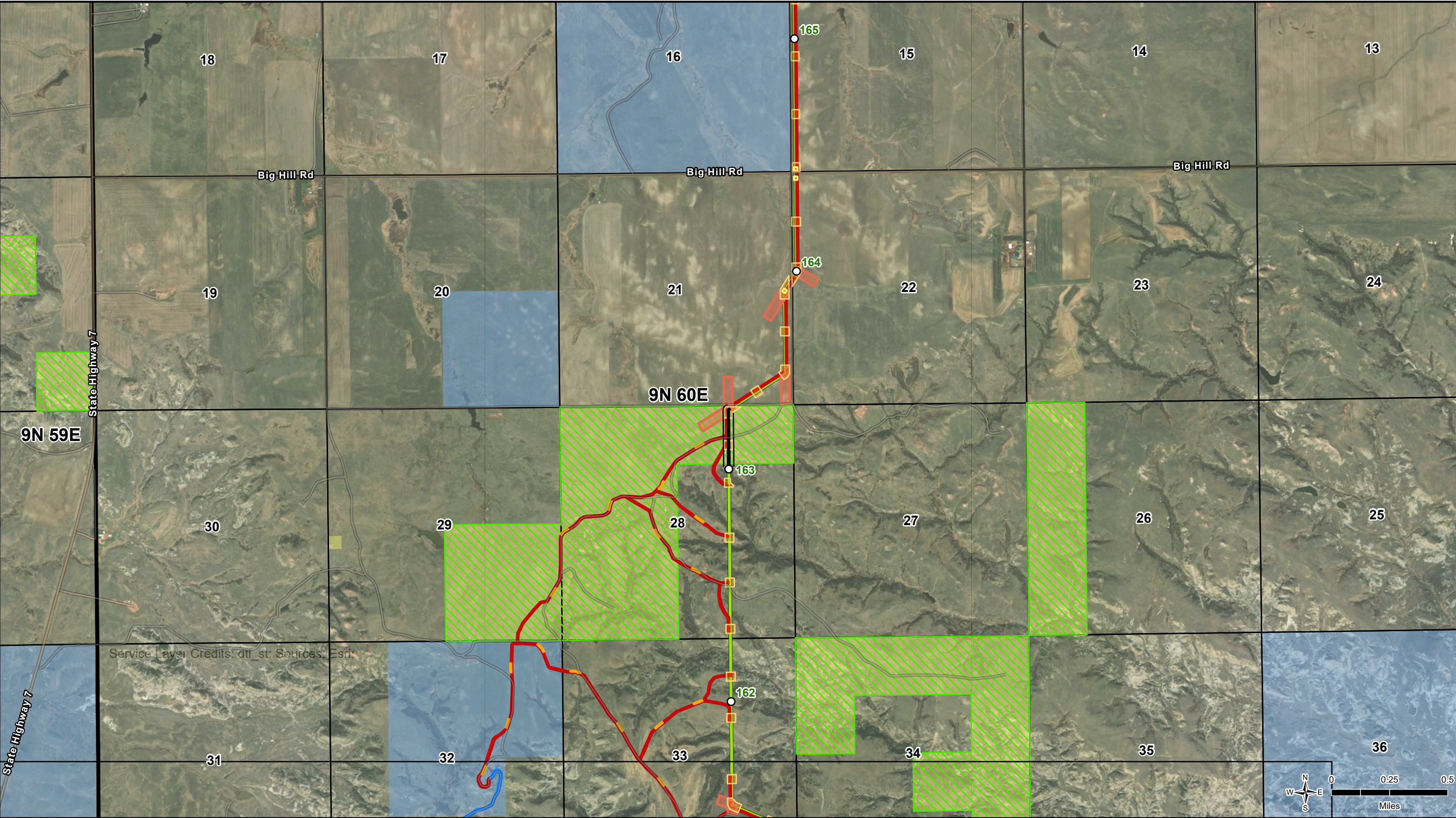
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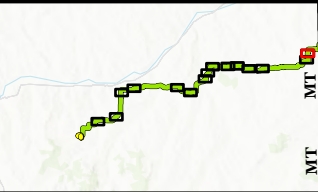


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○ Milepost

Proposed Alternative

HVDC Transmission Line (525-kV)

Route Segment Crossing BLM Land

Land Ownership

Montana State Trust Lands

Bureau of Land Management

Permanent Impact

Structure Footprint

Permanent Access Road

Temporary Impact

Guard Structure Pad

Structure Pad

Access Turnaround

Pulling Site

Temporary Access Road

BLM VRM Class

Class IV

PLSS

Township

Section



Figure 3.9-1

BLM Visual Resource Management Crossings

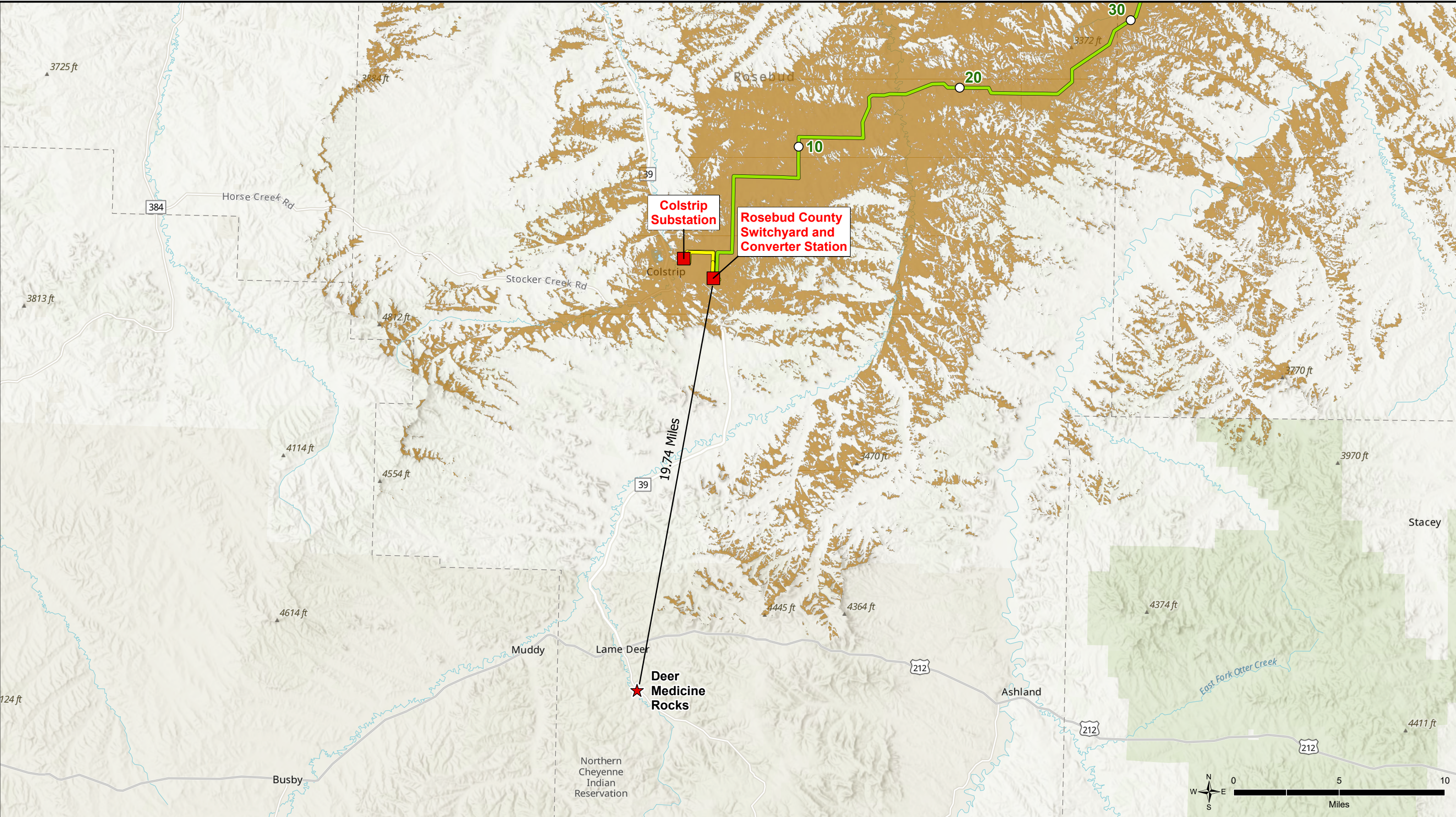
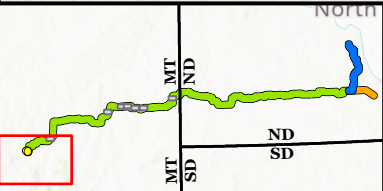
North Plains Connector

Montana

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★ National Historic Landmark

○ Milepost

■ Project Facility

Proposed Alternative

— HVDC Transmission Line (525-kV)

— Rosebud Transmission Line (500-kV)

NPC Visibility

Visible



Figure 3.9-2
Deer Medicine Rocks
North Plains Connector
Montana



DEQ
Montana Department
of Environmental Quality

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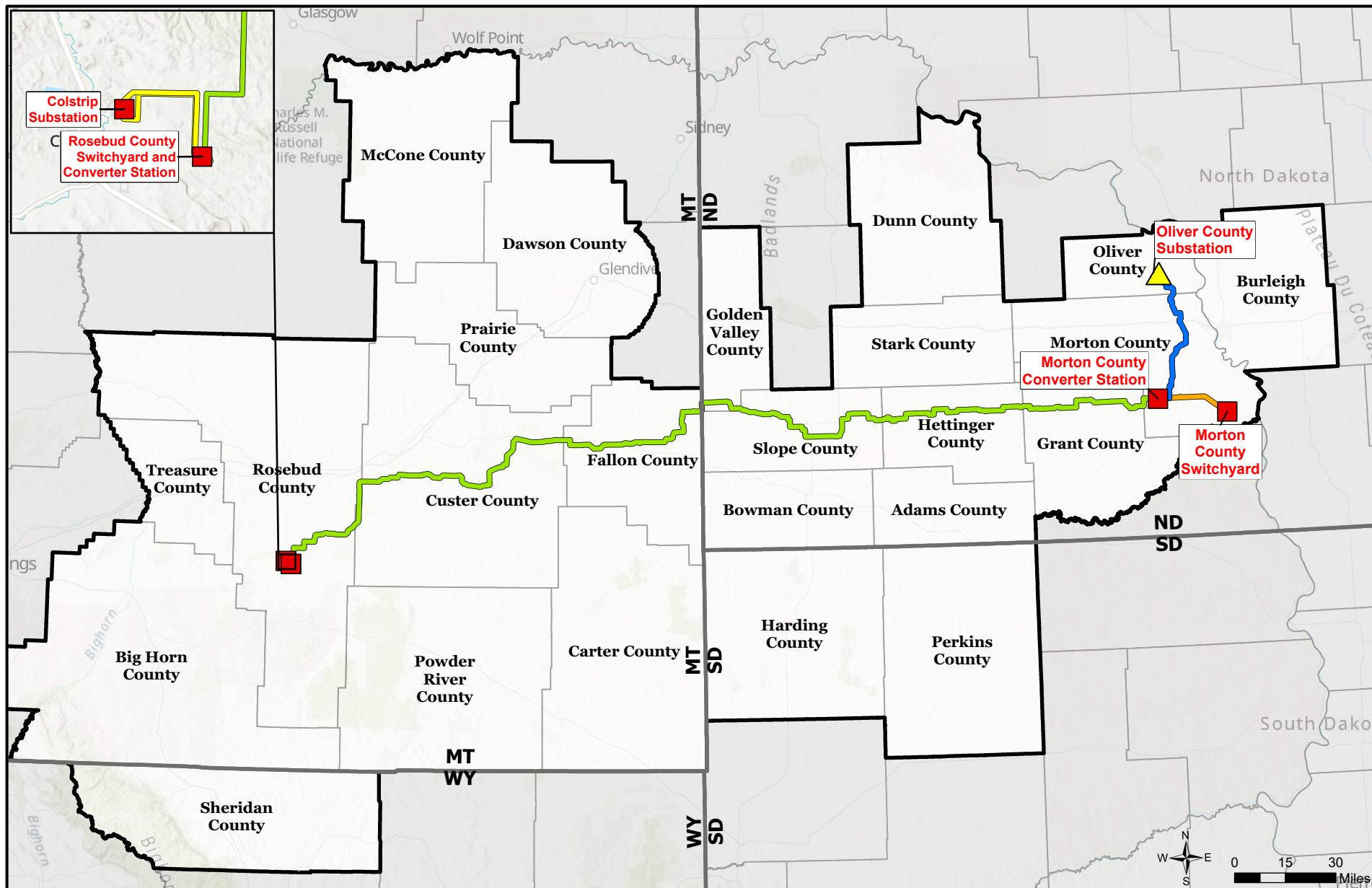
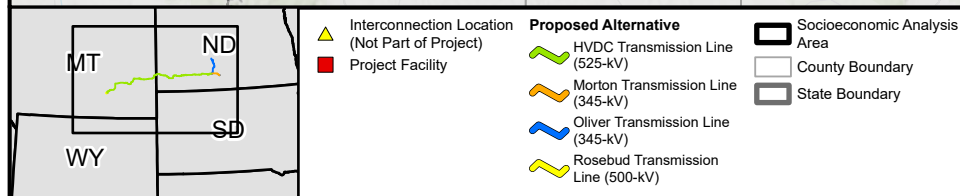


Figure 3.10-1
Socioeconomic Analysis Area
 North Plains Connector
 Montana and North Dakota



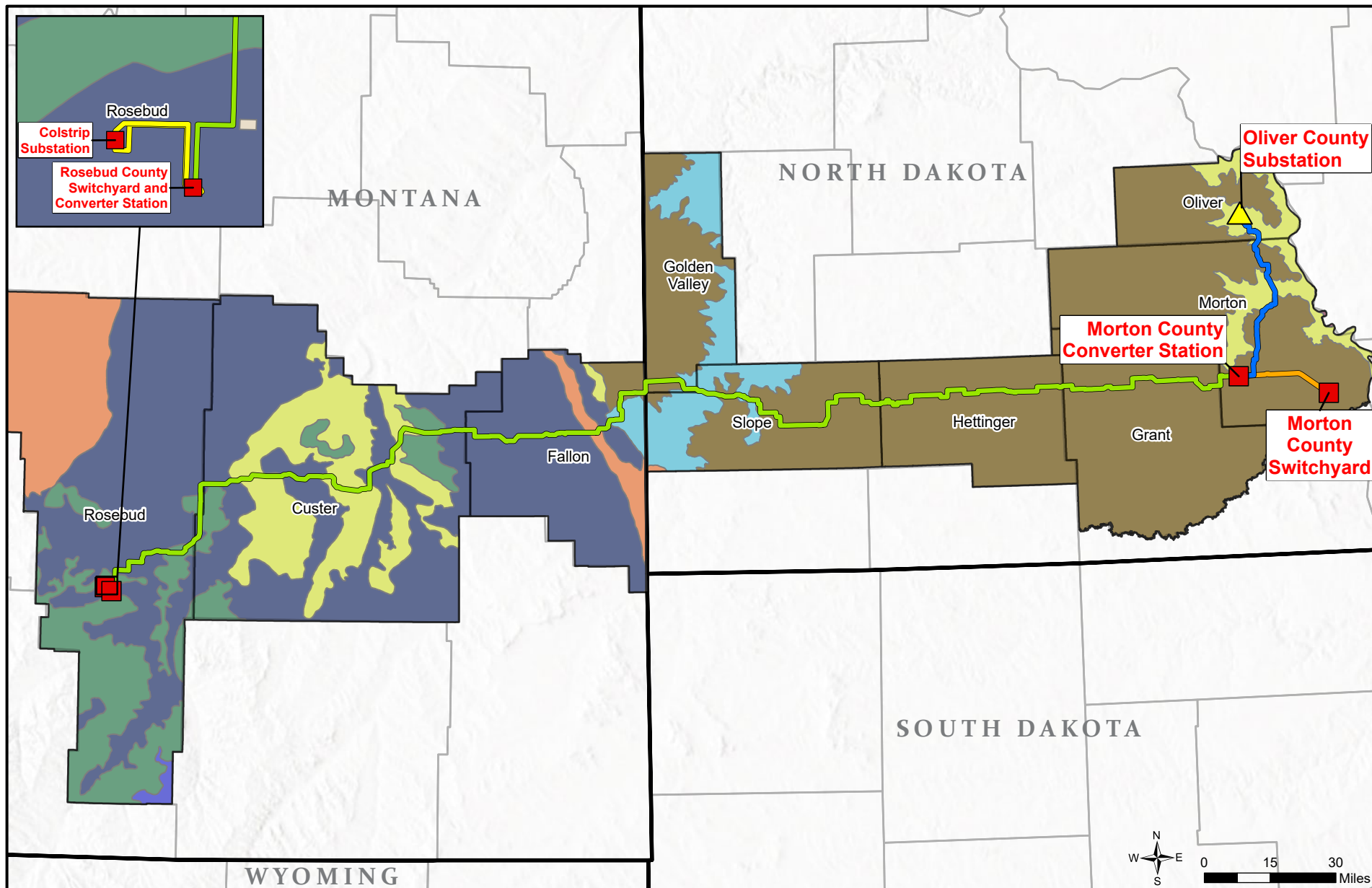
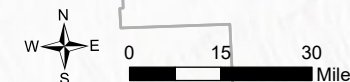
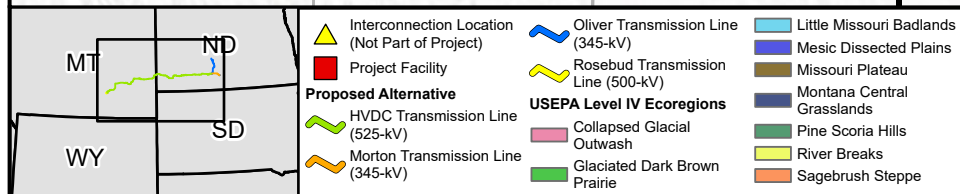
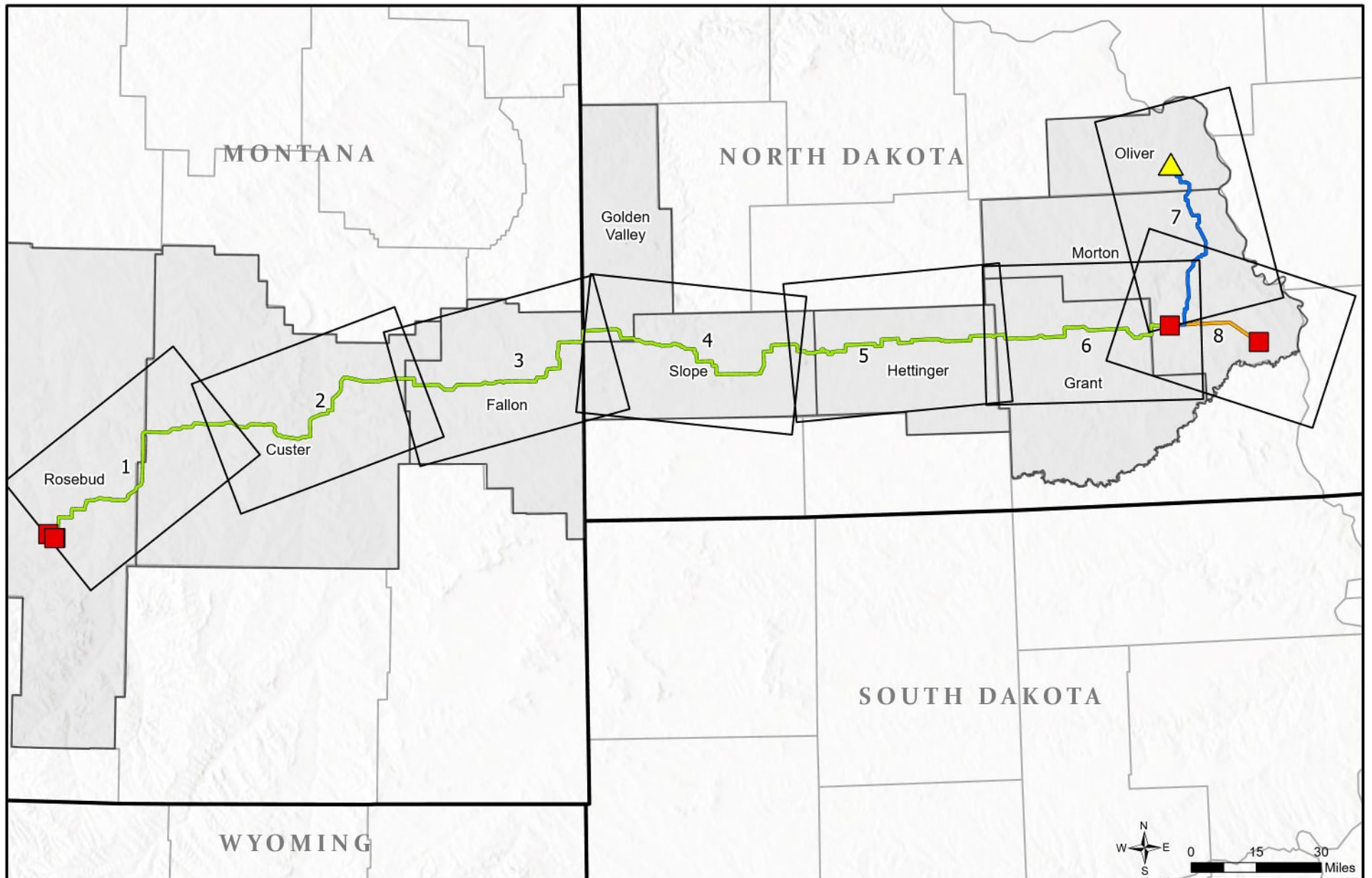
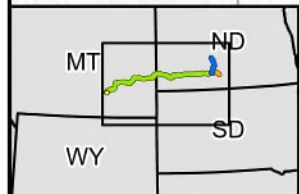


Figure 3.13-1
USEPA Level IV Ecoregions Crossed
 North Plains Connector
 Montana and North Dakota



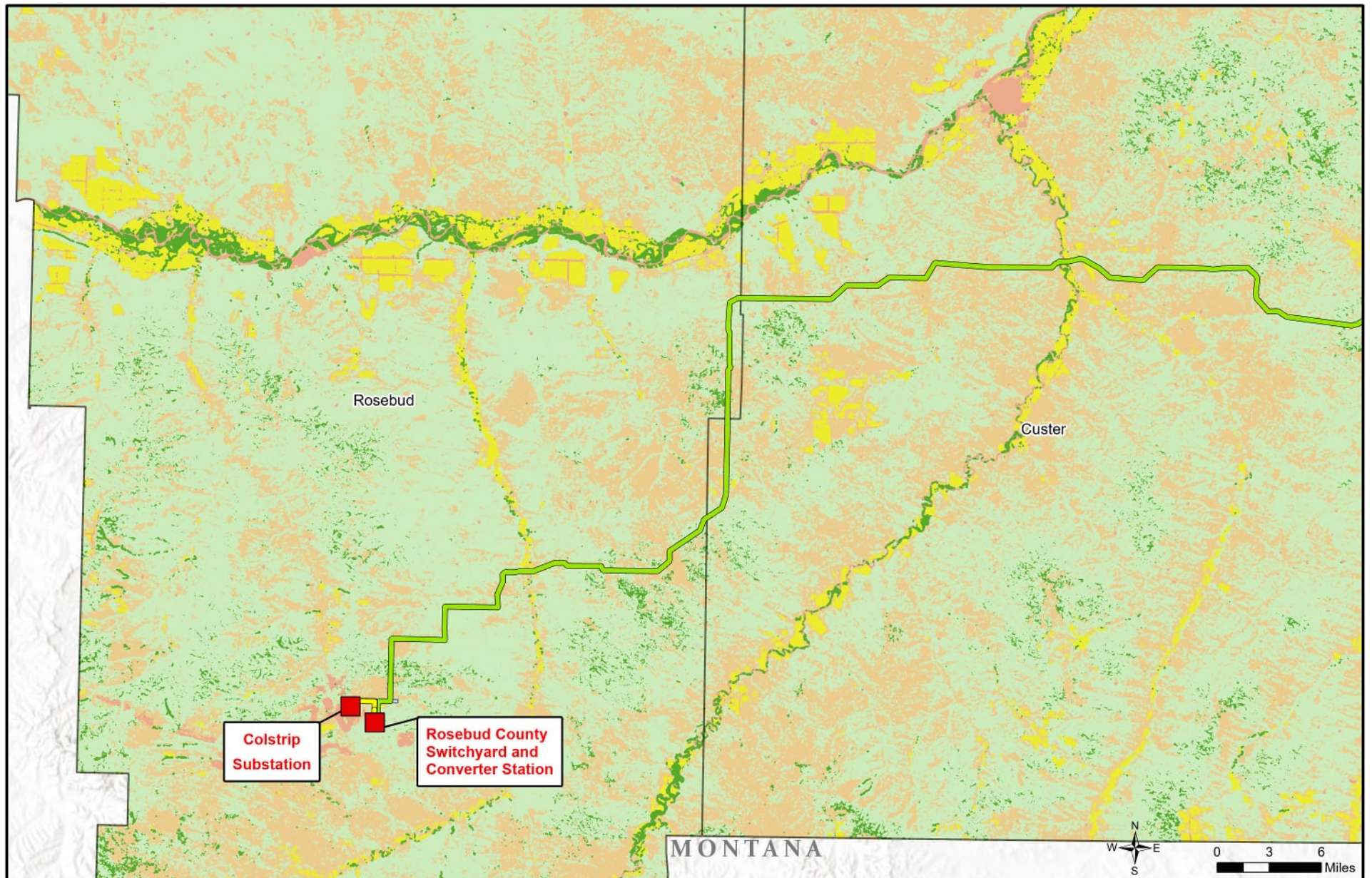
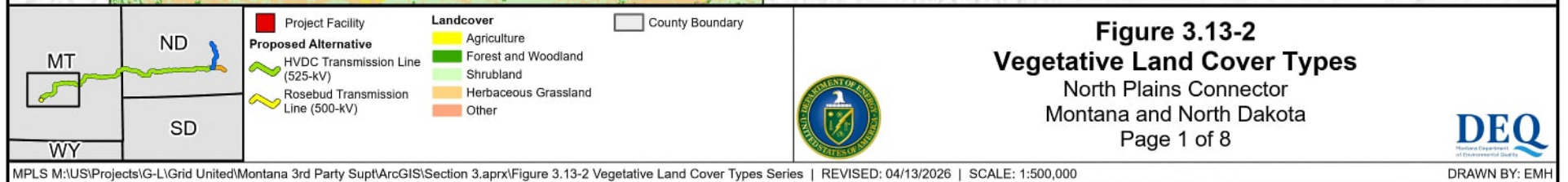


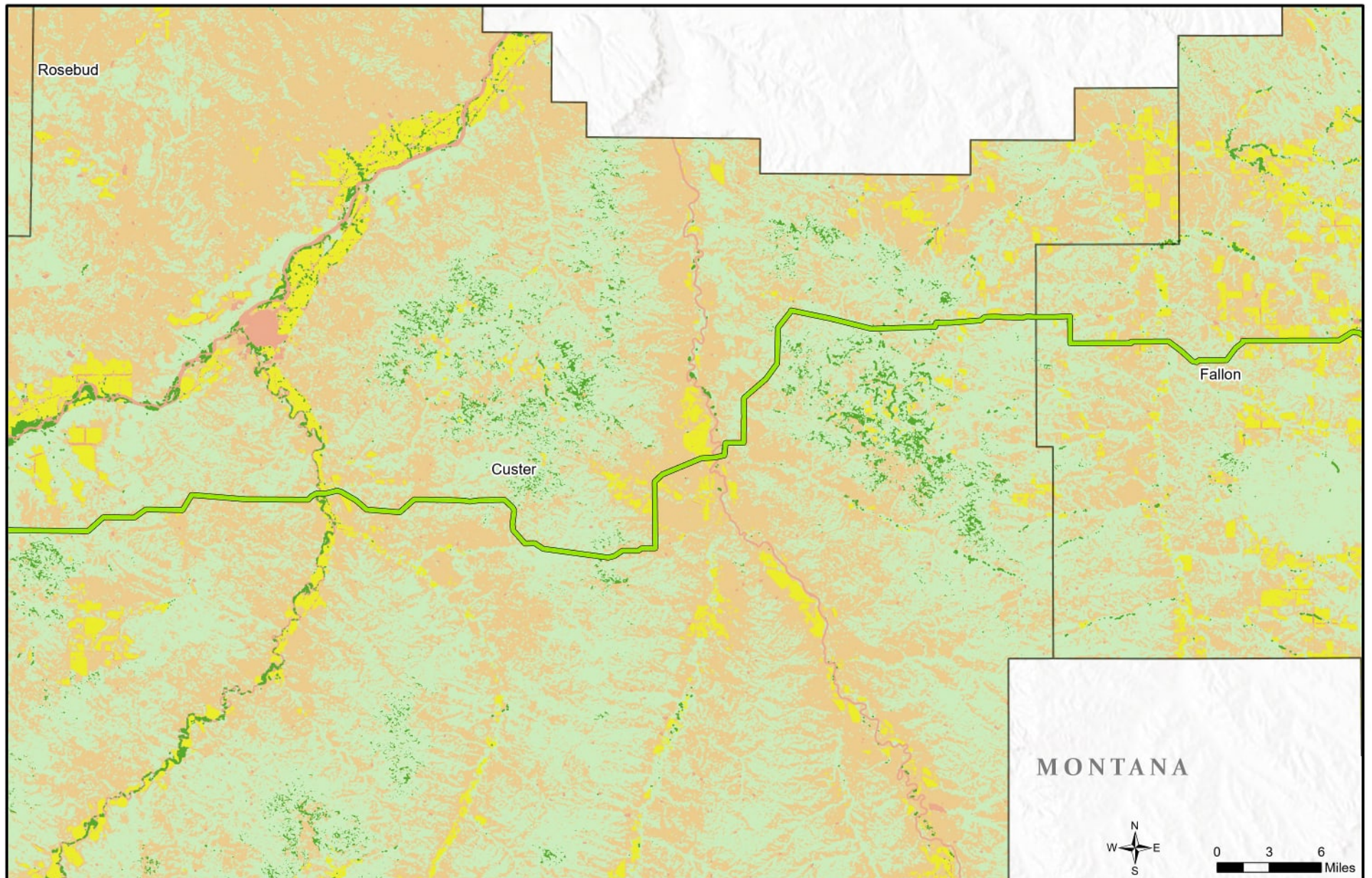
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|--|---|--|
| <ul style="list-style-type: none"> Interconnection Location (Not Part of Project) Project Facility | <p>Proposed Alternative</p> <ul style="list-style-type: none"> HVDC Transmission Line (525-kV) Morton Transmission Line (345-kV) Oliver Transmission Line (345-kV) | <ul style="list-style-type: none"> Page Index State Boundary County Boundary |
|--|---|--|

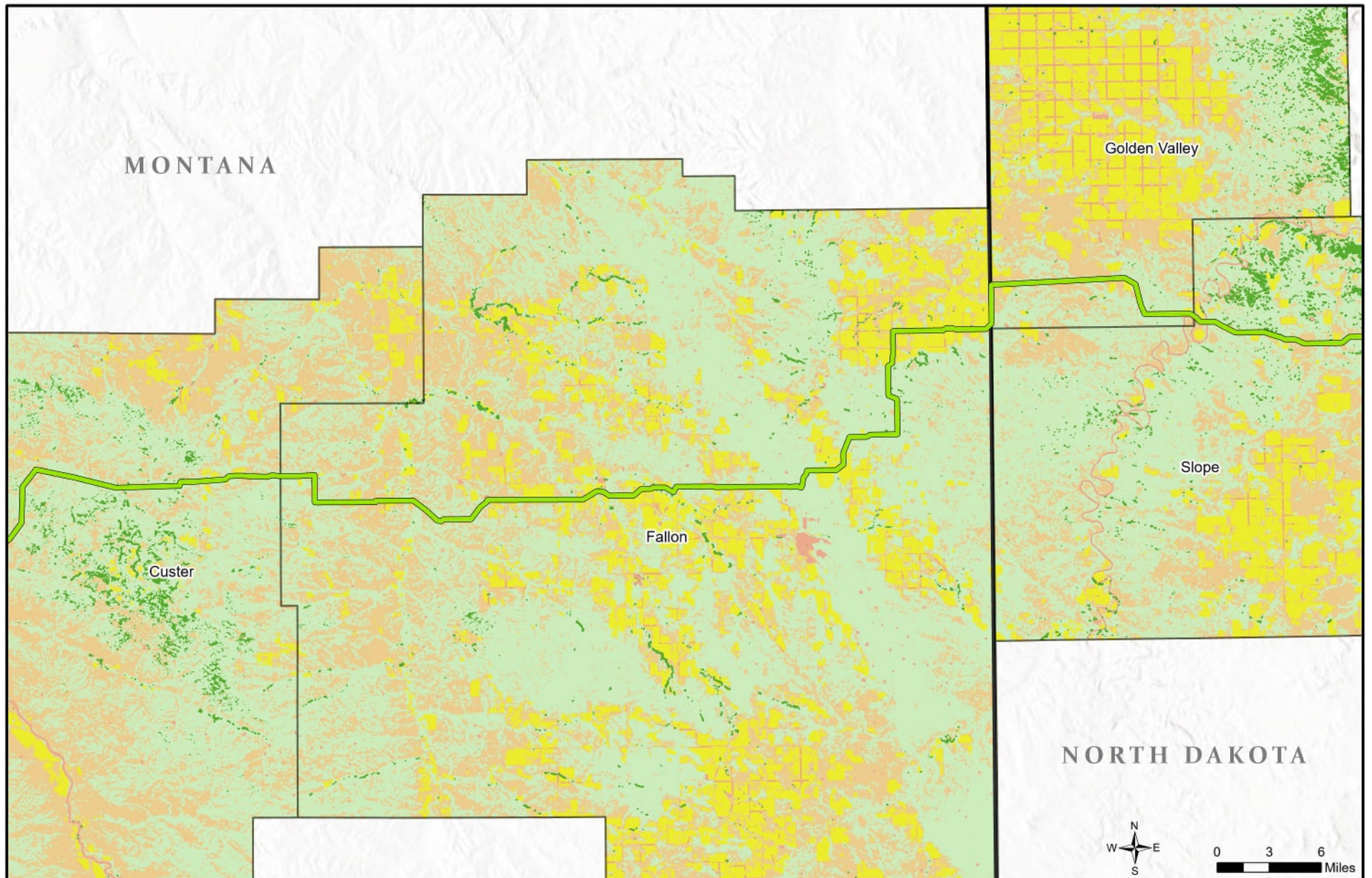


Figure 3.13-2
Vegetative Land Cover Types
 North Plains Connector
 Montana and North Dakota
 Page Index









	<p>Proposed Alternative</p> <p>HVDC Transmission Line (525-kV)</p> <p>Landcover</p> <ul style="list-style-type: none"> Agriculture Forest and Woodland Shrubland Herbaceous Grassland Other <p>County Boundary</p>	<p>Figure 3.13-2</p> <p>Vegetative Land Cover Types</p> <p>North Plains Connector</p> <p>Montana and North Dakota</p> <p>Page 3 of 8</p> <p>DEQ</p> <p>Montana Department of Environmental Quality</p>
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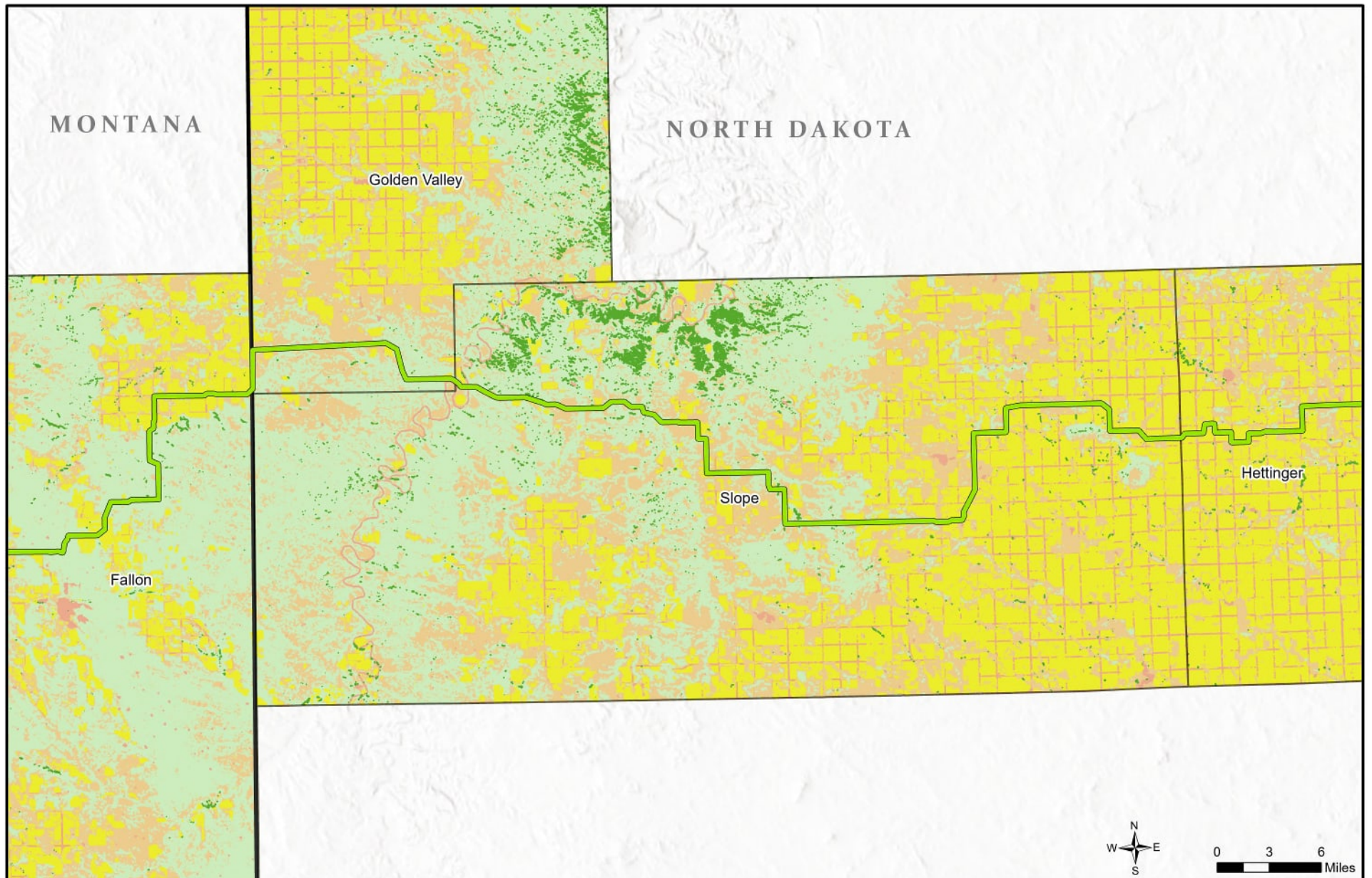
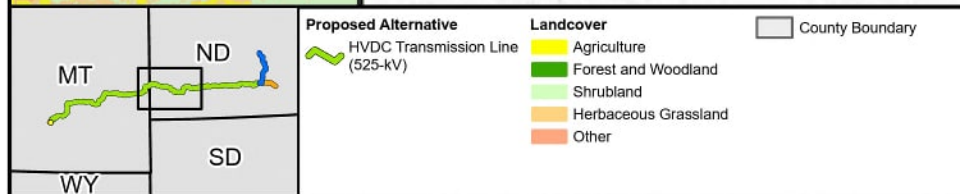
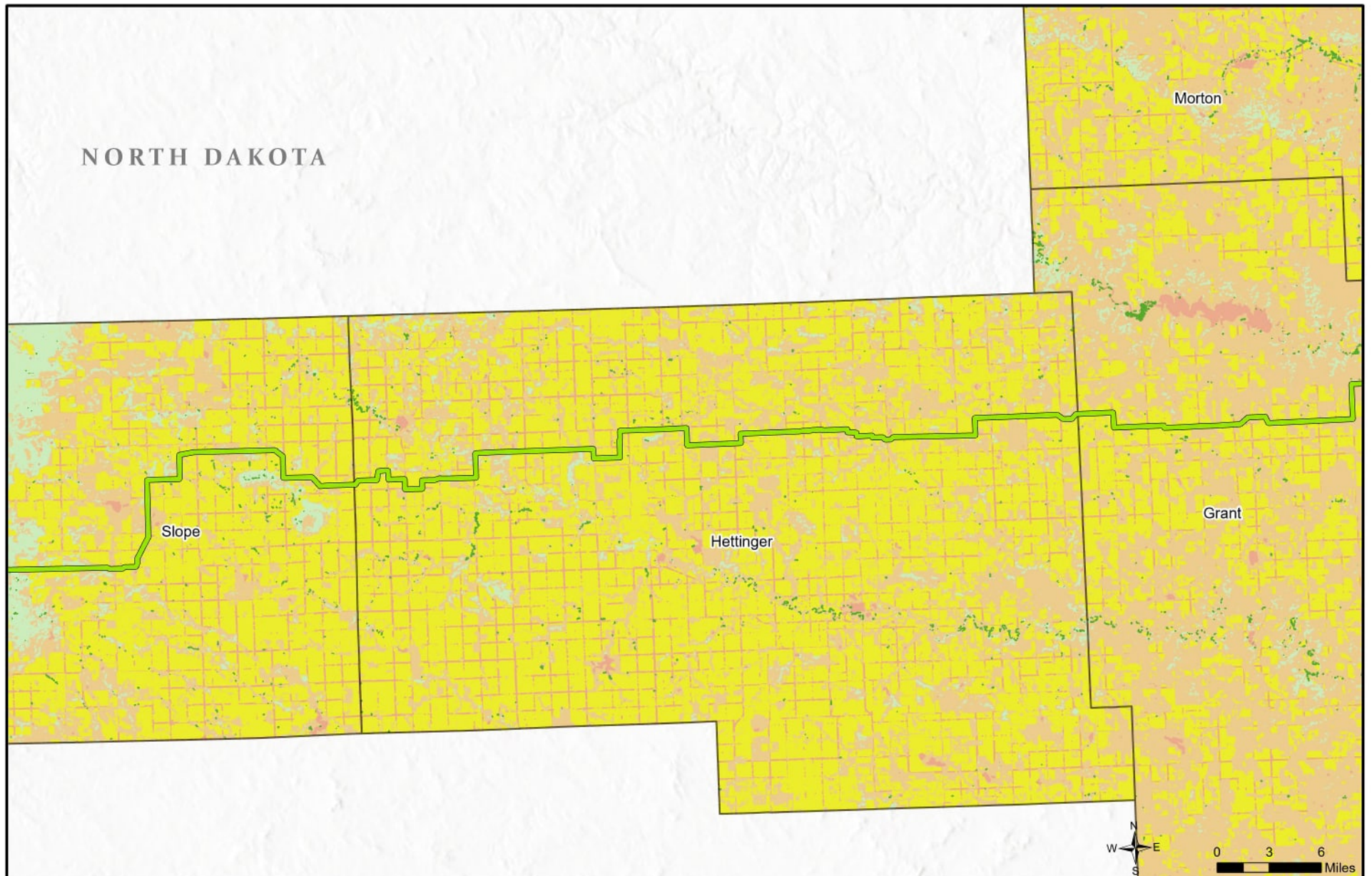
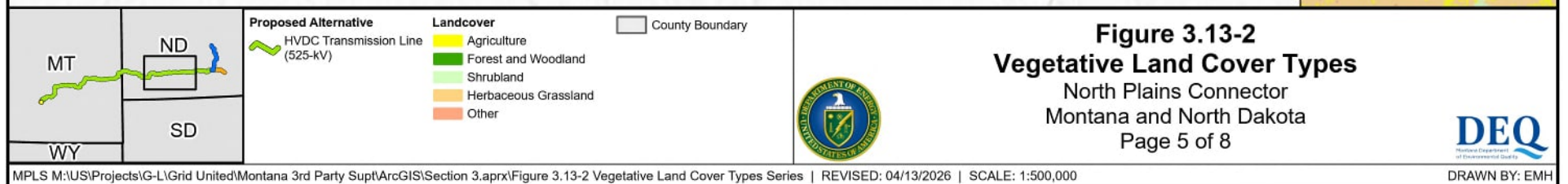


Figure 3.13-2
Vegetative Land Cover Types
 North Plains Connector
 Montana and North Dakota
 Page 4 of 8





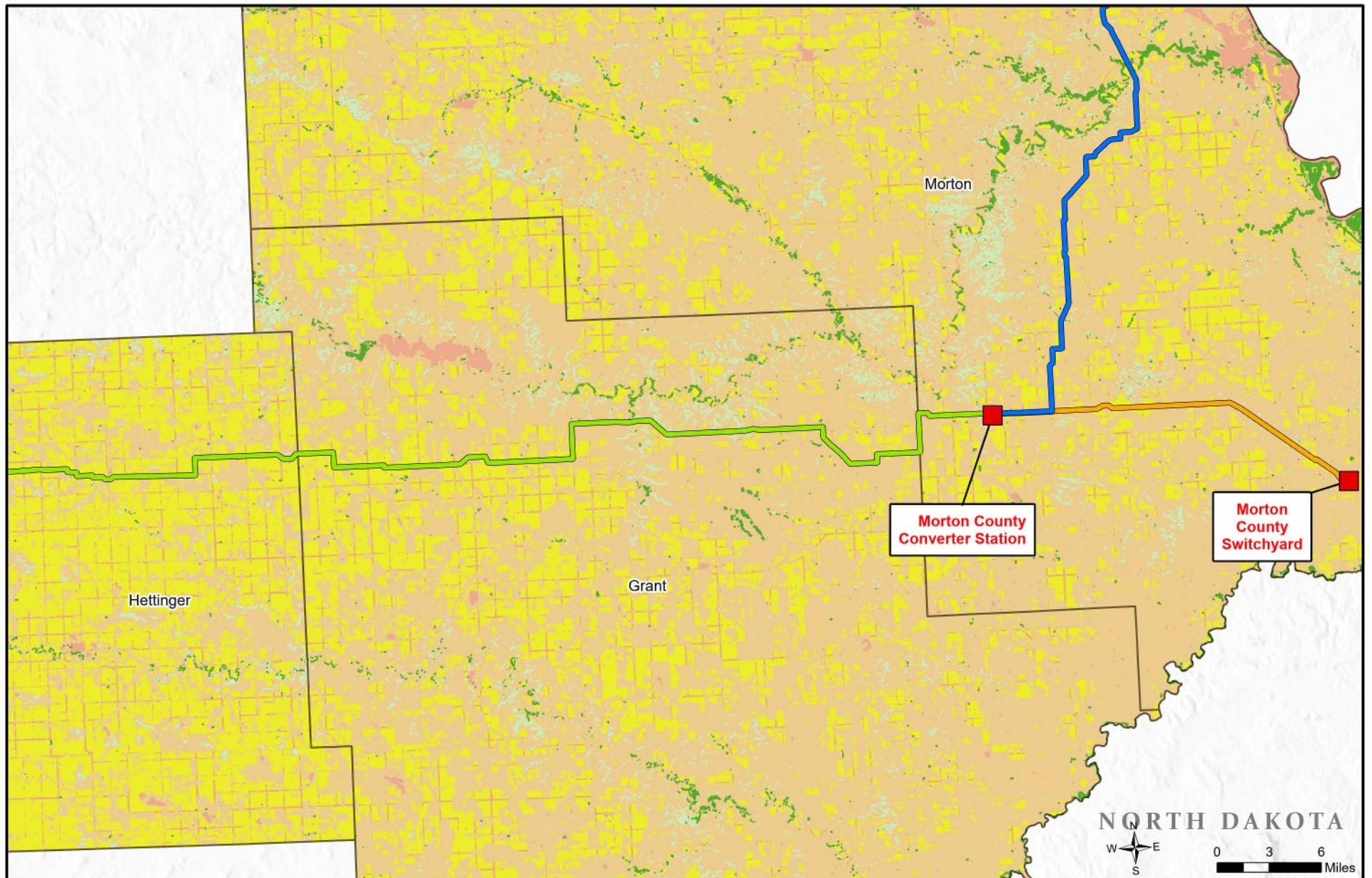
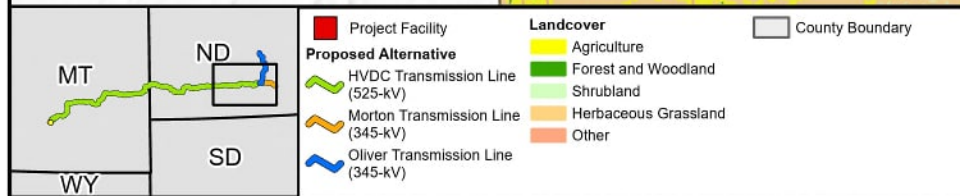


Figure 3.13-2
Vegetative Land Cover Types
 North Plains Connector
 Montana and North Dakota
 Page 6 of 8



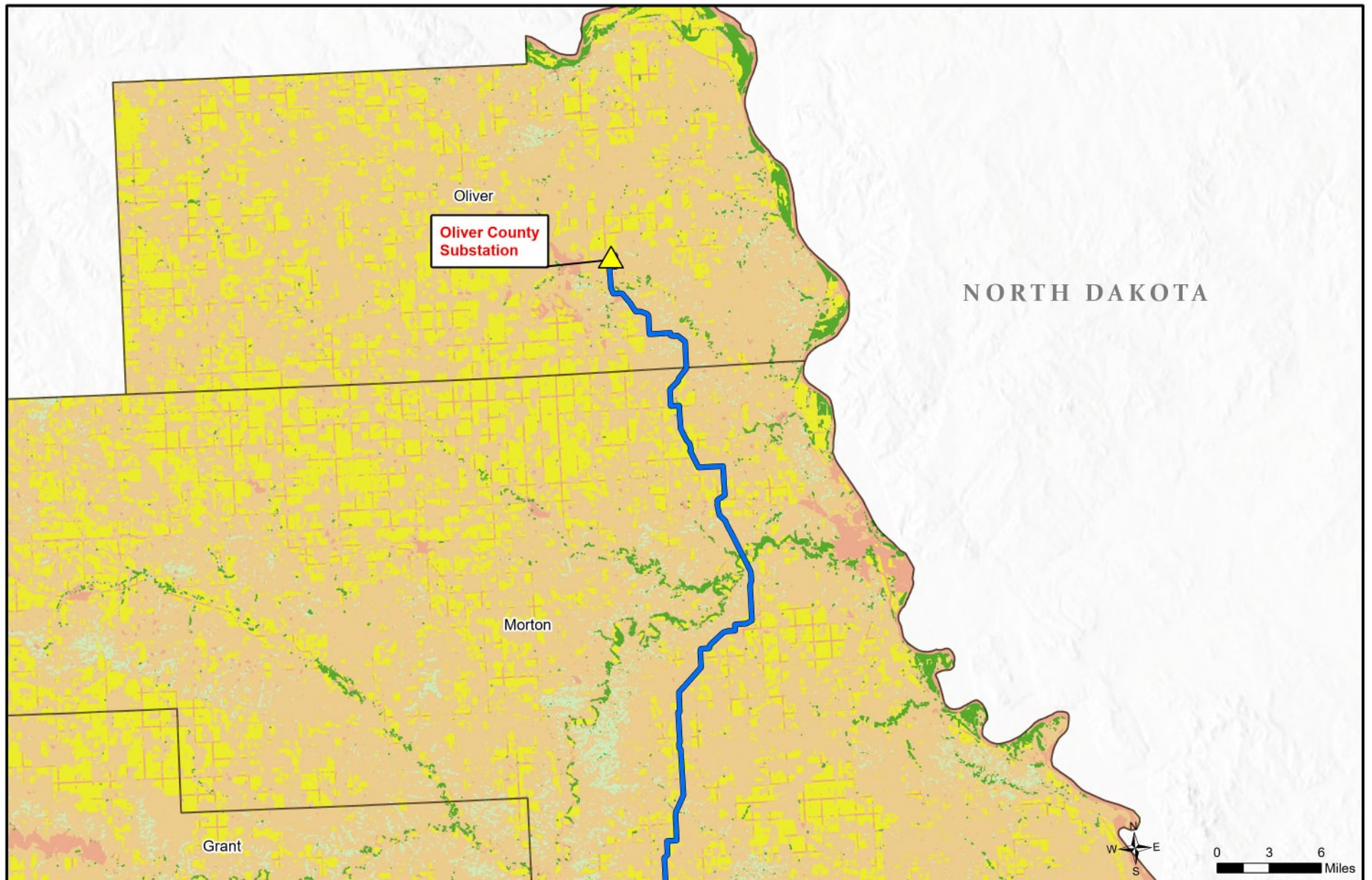
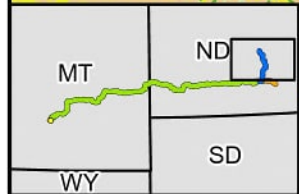
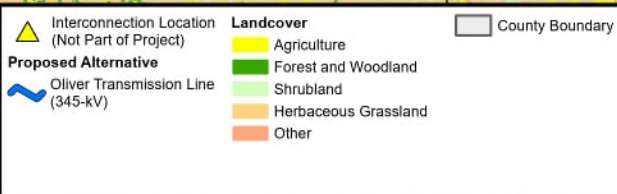


Figure 3.13-2
Vegetative Land Cover Types
 North Plains Connector
 Montana and North Dakota
 Page 7 of 8



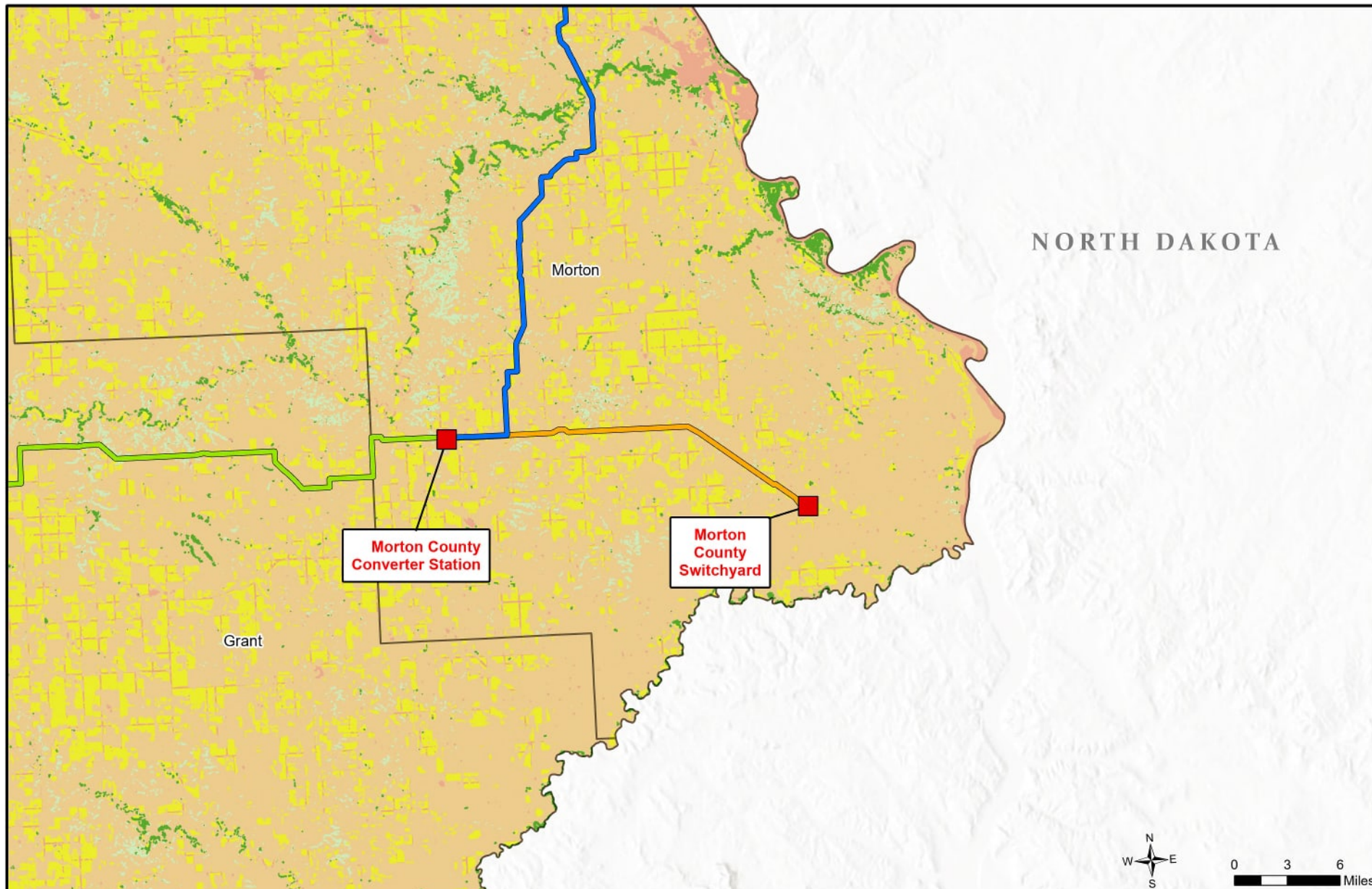
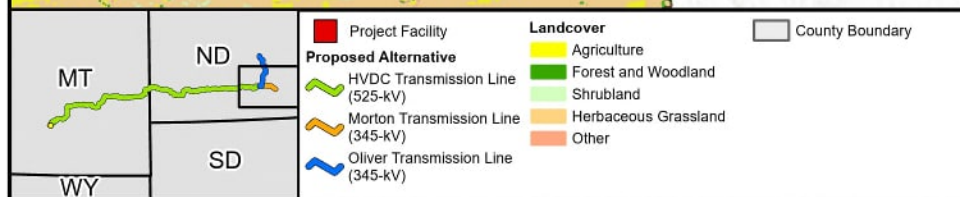


Figure 3.13-2
Vegetative Land Cover Types
 North Plains Connector
 Montana and North Dakota
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