APPENDIX B. SUPPLEMENTAL INFORMATION

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APPENDIX B. SUPPLEMENTAL INFORMATION

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

B.1. ANALYSIS METHODS

B.1.1. Air Quality

The analysis area for direct and secondary impacts is the geographic vicinity of the Project area[1] 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.

B.1.1.1. 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 (NO_2); particulate matter (PM) with an aerodynamic diameter less than or equal to 10 and 2.5 microns (PM_{10} and $PM_{2.5}$, respectively); ozone (O_3); and sulfur dioxide (SO_2), 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

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

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 (CO_2e).

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.1.2. 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.1.2.1. 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 Agreement[2] that will guide compliance with Section 106 has been developed. The Project crosses lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture (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 Section 75-1-103 (2)(e) 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

[2] 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)).

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 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 right-of-way (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.1.2.2. 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 will be discussed further in the Final EIS.

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.1.3. 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 areas 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.1.3.1. 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 alternating current (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.1.3.2. Stray Voltage

Stray voltage may occur between AC and direct current (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.1.3.3. 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.

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.1.3.4. 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 (O_2) into ozone (O_3) and nitrogen (N_2) into nitrogen oxides (NO_X). The rate of O_3 and NO_X production increases with temperature and sunlight and is reduced by humidity. O_3 and NO_X are highly reactive compounds, making their presence in the air short-lived.

Federal regulations set limits on the permissible levels of O_3 and NO_X in the air, and these standards are reflected in state air quality rules. The ambient air quality standard for O_3 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 NO_2 (the indicator pollutant for all NO_X compounds) is 53 ppb annual average concentration (40 CFR § 50.11). Inhalation of O_3 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 3.2.1, [Air Quality] Analysis Methods. 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.1.3.5. 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, 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 Sections 3.6.2.2, Floodplains, and 3.6.3.2, [Surface Water Hydrology, Environmental Consequences] Proposed Alternative.

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.1.4. 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; USEPA 2025). MTDEQ and North Dakota Department of Environmental Quality (NDDEQ) data were reviewed for 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).

B.1.5. 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; WEST 2025):

- 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 2024

B.1.6. 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.

B.1.7. Land Use and Recreation

B.1.7.1. 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.1.7.2. 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.

B.1.8. 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). 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) 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.1.9. 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.1.10. 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 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.1.10.1. 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 (USDA NRCS 2019) 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.1.10.2. Methods of Analysis

GIS data from the Web Soil Survey (USDA NRCS 2019) 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.1.11. 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.1.11.1. 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.1.11.2. 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.1.12. 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.1.12.1. Information Sources for Vegetation and Ecological Communities

The presence/probable absence vegetation surveys for 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). The EIS analysis used these data to evaluate impacts on 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.1.12.2. 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.1.12.3. 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.1.13. 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 2024 (WEST 2025a).

Desktop analysis for the Project was conducted by reviewing species listed under Montana's SOC, North Dakota's SCP, BLM Special Status Species (SSS), USDA Forest Service RFSS Species, 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 areas. 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. 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.2.1. 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.2.2. Chapter 3

B.2.2.1. 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

Criteria Pollutant	Class of Standard	Averaging Time	Level	Form
$PM_{2.5}$	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
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/m^3 = micrograms per cubic meter; CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; Pb = lead; PM_{10} = 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; SO_2 = sulfur dioxide

Notes:

[a] Final rule signed October 15, 2008. The 1978 Pb standard (1.5 micrograms per cubic meter [µg/m^3] 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 NO_2 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) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 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 SO_2 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
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/m^3 = micrograms per cubic meter; N/A = data not available; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen oxides; O_3 = ozone; $PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = 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	$\mu g/m^3$	38-015-0003	35
	Annual	Mean	5.4	9.8	8.2	7.8	$\mu g/m^3$	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

$\mu g/m^3$ = micrograms per cubic meter; CO = carbon monoxide; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen oxides; O_3 = ozone; $PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particulate matter with an aerodynamic diameter of 10 micrometers or less; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide

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

Proposed Alternative	Criteria Pollutants						HAPs	
Component / State / Emission Source	CO	NO_x	SO_2	VOC	PM_{10}	$PM_{2.5}$	Formaldehyde	Total HAPs
Rosebud Transmission Line (Montana)								
Fugitive dust from unpaved roads	--	--	--	--	1.35	0.14	--	--
Fugitive dust from earthmoving	--	--	--	--	2.25	0.24	--	--
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
Subtotal	*2.24*	*37.33*	*0.01*	*1.20*	*4.23*	*1.00*	*0.24*	*0.48*
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	--	--	--	--	8.67	0.92	--	--
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
Subtotal	*15.11*	*162.58*	*0.10*	*5.33*	*19.05*	*6.35*	*1.23*	*3.09*

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	--	--	--	--	7.85	0.83	--	--
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
Subtotal	*14.26*	*162.11*	*0.10*	*4.94*	*17.98*	*6.04*	*1.15*	*2.84*
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	--	--	--	--	8.31	0.88	--	--
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
Subtotal	*6.96*	*64.53*	*0.04*	*2.16*	*12.67*	*2.78*	*0.49*	*1.19*
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	--	--	--	--	20.44	2.16	--	--
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
Subtotal	*7.14*	*69.97*	*0.03*	*2.36*	*26.58*	*4.62*	*0.53*	*1.23*
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	--	--	--	--	10.49	1.11	--	--
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	--	--	--	--	--	--	--	--
Subtotal	*17.47*	*128.40*	*0.14*	*4.29*	*21.39*	*5.07*	*1.13*	*3.34*
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	--	--	--	--	--	--	--	--
Subtotal	*16.78*	*129.55*	*0.14*	*3.94*	*17.34*	*4.59*	*1.06*	*3.14*
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	--	--	--	--	1.12	0.12	--	--
Emissions from concrete batch plants	--	--	--	--	0.00	0.00	--	--
Emissions from helicopters	--	--	--	--	--	--	--	--
Subtotal	*7.39*	*42.58*	*0.05*	*1.55*	*6.23*	*1.78*	*0.42*	*1.23*
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	--	--	--	--	65.63	6.93	--	--
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**	**125.47**	**32.22**	**6.26**	**16.55**

Source: USEPA 2025b

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; PM_{10} = particulate matter with an aerodynamic diameter of 10 micrometers or less; SO_2 = sulfur dioxide; VOC = volatile organic compound

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

Proposed Alternative Component / State / Emission Source	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	CO_{2e} (tons)	CO_{2e} (metric tons)
Rosebud Transmission Line (Montana)					
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
Subtotal	*6,770.06*	*0.17*	*0.04*	*7,314.47*	*6,635.57*
HVDC Transmission Line (Montana)					
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
Subtotal	*24,549.35*	*0.51*	*0.17*	*28,148.62*	*25,536.00*
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	--	--	--	--	--
Subtotal	*18,102.43*	*0.13*	*0.15*	*21,319.57*	*19,340.79*
HVDC Transmission Line (North Dakota)					
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
Subtotal	*24,546.65*	*0.50*	*0.11*	*28,104.97*	*25,496.41*
Morton Transmission Line (North Dakota)					
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
Subtotal	*19,796.47*	*0.31*	*0.07*	*21,587.73*	*19,584.06*
Oliver Transmission Line (North Dakota)					
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
Subtotal	*20,770.87*	*0.35*	*0.08*	*23,445.57*	*21,269.47*
Morton County Converter Station (North Dakota)					
Emissions from construction engines	18,102.43	0.13	0.15	18,145.24	16,461.09
Emissions from helicopter engines	--	--	--	--	--
Subtotal	*18,102.43*	*0.13*	*0.15*	*21,319.22*	*19,035.02*
Morton County Switchyard (North Dakota)					
Emissions from construction engines	18,102.43	0.13	0.05	18,118.94	16,437.23
Emissions from helicopter engines	--	--	--	--	--
Subtotal	*18,102.43*	*0.13*	*0.05*	*19,705.93*	*17,876.92*

Proposed Alternative Component / State / Emission Source	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	CO_{2e} (tons)	CO_{2e} (metric tons)
Total Proposed Alternative					
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

CH_4 = methane; CO_2 = carbon dioxide; CO_{2e} = carbon dioxide equivalent; HVDC = high-voltage direct current; N_2O = 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; PM_{10} = particulate matter with an aerodynamic diameter of 10 micrometers or less; SO_2 = sulfur dioxide; VOC = volatile organic compound

B.2.2.2. Cultural/Tribal/Historic Resources

Table 3.3-1
Previously Recorded Sites that Cross the Project Impact Area 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
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

Site ID	Category	Site Type	NRHP
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 Area 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.2.2.3. 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	15.2 kV/meter	2.3 kV/meter
Space charge electric field (fair weather)	31.5 kV/meter	7.8 kV/meter
Magnetic field	1,062 mG	503 mG
2-1590 Lapwing Conductor— Oliver and Morton Transmission Lines		
Electric field	5.8 kV/meter	0.1 kV/meter
Magnetic field	254.5 mG	23.3 mG
3-1590 Lapwind Conductor— Rosebud Transmission Line		
Electric field	9.1 kV/meter	1.4 kV/meter
Magnetic field	312.8 mG	54.8 mG

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.2.2.4. 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	146	Western Energy Company	203208
Rosebud County, Montana	2.5	87	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	45	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	25.8	68	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	63.2	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	57	Stat. No. 44-36	898483
Fallon County, Montana	132.5	127	Stat. No. 44-36	907137
Fallon County, Montana	138.9	2	Lang, Christ	22035
Fallon County, Montana	139.0	Within impact area	Plevna Rural Fire District	273728
Fallon County, Montana	139.1	146	St. Anthony Catholic Cemetery	22030
Fallon County, Montana	139.2	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	115	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	174.8	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	65	Wetch & Sons Drilling	13908234DBB
Morton Transmission Line				
Morton County, North Dakota	2.3	Within impact area	Zachmeier Well Drilling	13508306DBD

Sources: Grid United 2024; 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

Transmission Line / County / State	Nearest MP	Distance from Project Impact Areas (miles)	USEPA Facility Type	Primary Name
Rosebud County, Montana	0.1	0.4	SEMS, TRI, RCRA	PPL Colstrip Steam Electric Station
Rosebud County, Montana	0.1	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	0.5	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

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.2.2.5. 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
	0.0–0.9 (Rosebud 3)	10100003–Rosebud
	0.0–1.2 (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

Transmission Line / County / State	MP	Watershed Name (HUC 8)
Custer County, Montana	29.3–32.0	10100001–Lower Yellowstone-Sunday
	32.0–32.4	10090102–Lower Tongue
	32.4–32.6	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
	81.2–86.4	10090210–Mizpah
	86.4–114.5	10090209–Lower Powder
	114.5–117.9	10100005–O'Fallon
Fallon County, Montana	117.9–156.9	10100005–O'Fallon
	156.9–163.1	10110203–Middle Little Missouri
	163.1–170.8	10110204–Beaver
	170.8–171.8	10110203–Middle Little Missouri
	171.8–173.5	10110204–Beaver
Golden Valley, North Dakota	173.5–174.5	10110204–Beaver
	174.5–186.6	10110203–Middle Little Missouri
Slope County, North Dakota	186.6–215.6	10110203–Middle Little Missouri
	215.6–242.8	10130204–Upper Cannonball
Hettinger County, North Dakota	242.8–286.8	10130204–Upper Cannonball
	286.8–288.4	10130202–Upper Heart
	288.4–290.5	10130203–Lower Heart
	290.5–290.6	10130202–Upper Heart
	290.6–290.9	10130203–Lower Heart
	290.9–291.4	10130202–Upper Heart
	291.4–293.6	10130203–Lower Heart
Grant County, North Dakota	293.6–293.8	10130203–Lower Heart
	293.8–296.1	10130202–Upper Heart
	296.1–297.0	10130203–Lower Heart
	297.0–298.1	10130202–Upper Heart
	298.1–302.6	10130203–Lower Heart
	302.6–302.6	10130202–Upper Heart
	302.6–334.9	10130203–Lower Heart
Morton County, North Dakota	334.9–341.5	10130203–Lower Heart

Transmission Line / County / State	MP	Watershed Name (HUC 8)
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
	41.2–51.8	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

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	0.01	<0.001	0	0.00	0.000	22.49	0.001	1.23	<0.001	23.72	0.001	5.07	<0.001
Rosebud	10100003	837,053	0	0.00	0.000	0	0.00	0.000	60.07	0.007	24.47	0.003	84.54	0.010	24.88	0.003
HVDC Transmission Line																
Rosebud	10100003	837,053	14	0.04 [d]	<0.001	7	0.04	<0.001	257.47	0.031	108.09	0.013	365.55	0.044	112.11	0.013
Lower Tongue	10090102	1,838,103	4	0.01	<0.001	19	0.09	<0.001	211.28	0.011	105.57	0.006	316.85	0.017	69.00	0.004
Lower Yellowstone-Sunday	10100001	3,075,711	15	0.07	<0.001	20	0.08	<0.001	257.77	0.008	63.93	0.002	321.70	0.010	98.66	0.003
Mizpah	10090210	514,324	1	0.01	<0.001	29	0.20	<0.001	41.10	0.008	34.58	0.007	75.68	0.015	10.70	0.002
Lower Powder	10090209	1,201,402	26	0.24	<0.001	1	0.01	<0.001	295.02	0.025	29.82	0.002	324.83	0.027	71.00	0.006
O'Fallon	10100005	1,011,091	13	0.16	<0.001	0	0.00	0.000	454.12	0.045	11.52	0.001	465.64	0.046	38.76	0.004
Middle Little Missouri	10110203	1,390,766	1	0.01	<0.001	2	0.01	<0.001	81.17	0.006	2.51	<0.001	83.68	0.006	20.63	0.001
Beaver	10110204	557,930	0	0.00	0.00	0	0.00	0.000	99.03	0.018	0.19	<0.001	99.22	0.018	3.81	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	13	0.12	<0.001	1	0.01	<0.001	395.21	0.028	14.38	0.001	409.58	0.029	5.71	<0.001
Upper Cannonball	10130204	1,046,373	7	0.06	<0.001	0	0.00	0.000	689.47	0.066	8.56	0.001	698.03	0.067	0.21	<0.001
Upper Heart	10130202	1,097,252	0	0.00	0.000	0	0.00	0.000	43.03	0.004	0.10	<0.001	43.14	0.004	0.93	<0.001
Lower Heart	10130203	1,045,195	0	0.00	0.000	0	0.00	0.000	440.51	0.042	5.63	0.001	446.14	0.043	3.55	<0.001
Oliver Transmission Line																
Lower Heart	10130203	1,045,195	3	0.02	<0.001	0	0.00	0.000	159.54	0.015	0.89	<0.001	160.44	0.015	5.36	0.001
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	92.54	0.016	5.21	0.001	97.75	0.017	0.00	<0.001
Upper Lake Oahe	10130102	2,327,253	0	0.00	0.000	0	0.00	0.000	77.61	0.003	5.08	<0.001	82.69	0.004	1.80	<0.001
Painted Woods-Square Butte	10130101	1,617,190	4	0.06	<0.001	0	0.00	0.000	255.06	0.016	2.57	<0.001	257.63	0.016	3.47	<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 (%)
Morton Transmission Line																
Lower Heart	10130203	1,045,195	0	0.00	0.000	0	0.00	0.000	40.63	0.004	24.17	0.002	64.79	0.006	0.00	0.000
Lower Cannonball	10130206	572,608	0	0.00	0.000	0	0.00	0.000	202.04	0.035	19.01	0.003	221.06	0.039	0.87	<0.001
Upper Lake Oahe	10130102	2,327,253	0	0.00	0.000	0	0.00	0.000	59.22	0.003	3.94	<0.001	63.15	0.003	2.05	<0.001
Total		**28,983,962**	**102**	**0.77**	**<0.001**	**79**	**0.44**	**<0.001**	**4,240.78**	**0.004**	**471.47**	**<0.001**	**4,712.23**	**0.034**	**478.57**	**<0.001**

Source: Grid United 2025d

HUC = hydrologic unit code; HVDC = high-voltage direct current; NHD = National Hydrography Dataset; 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] The permanent impact area within HUC 8 and total impact area within HUC 8 columns includes existing access roads identified as needing improvement.
[c] Tree clearing acreage is based on desktop land cover data sources and estimates potential tree cover within the Project impact area 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] One NHD waterbody used to supplement waterbody data where field surveys have not been completed is crossed in the Rosebud HUC 8 subbasin on the HVDC Transmission Line. This feature is a line and does not allow acreage calculations but is only approximately 25 feet of crossing length and, if present after field surveys, would be a temporary impact from overland travel.
[e] 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 Area

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type [a]	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Maps Map ID	Date of Flood Insurance Rate Maps Map
Rosebud Transmission Lines								
No floodplains crossed								
HVDC Transmission Line								
Rosebud County, Montana	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	2.26	3000690037A	9/1/1997
	10100003 - Rosebud	8.5	Spring Creek	ROW Tree Clearing	0.70	NA	3000690037A	9/1/1997
	10100003 - Rosebud	8.6	Spring Creek	Existing, Needs Improvement	0.79 [b]	NA	3000690037A	9/1/1997
	10100003 - Rosebud	8.6	Spring Creek	Temporary Impact Area	NA	0.06	3000690037A	9/1/1997
	10100003 - Rosebud	8.8	Spring Creek	Existing, Needs Improvement	0.13 [b]	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.1	Spring Creek	Existing, Needs Improvement	0.87 [b]	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.1	Spring Creek	Temporary Impact Area	NA	0.06	3000690037A	9/1/1997
	10100003 - Rosebud	13.5	Rosebud Creek	Existing, Needs Improvement	3.41 [b]	NA	3000690037A	9/1/1997
	10100003 - Rosebud	13.5	Rosebud Creek	Temporary Impact Area	NA	0.23	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 Maps Map ID	Date of Flood Insurance Rate Maps Map
	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	0.88	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
	10100003 - Rosebud	16.9	Rosebud Creek	Existing, Needs Improvement	1.76 [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

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type [a]	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Maps Map ID	Date of Flood Insurance Rate Maps Map
	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	4.81 [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					**18.36** [c]	**9.24** [c]		
Grant County, North Dakota	10130203 - Lower Heart	316.4	Antelope Creek	Overland Travel	NA	0.01	38037C0275B	11/16/2023
	10130203 - Lower Heart	316.4	Antelope Creek	Temporary Impact	NA	0.66	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
	10130203 - Lower Heart	331.5	Unnamed Tributary to Otter Creek	Overland Travel	NA	0.06	38037C0350B	11/16/2023
	10130203 - Lower Heart	334.8	Cow Creek	Overland Travel	NA	0.06	38037C0350B	11/16/2023
Total floodplain impacts in Grant County, North Dakota					**0.20** [c]	**0.79** [c]		
Oliver Transmission Line								
Morton County, North Dakota	10130203 - Lower Heart	27.0	Heart River	New, Temporary	NA	0.93	38059C0460E	10/16/2015
	10130203 - Lower Heart	27.0	Heart River	Temporary Impact	NA	2.47	38059C0460E	10/16/2015

Transmission Line / County / State	Watershed (HUC 8)	MP	Waterbody Associated with Floodplain	Impact Type [a]	Permanent Impact (acres)	Temporary Impact (acres)	Flood Insurance Rate Maps Map ID	Date of Flood Insurance Rate Maps Map
	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]	**3.4** [c]		
Morton Transmission Line								
No floodplains crossed								
Montana Total Floodplain Impacts					**18.36** [c]	**9.24** [c]		
North Dakota Total Floodplain Impacts					**0.81** [c]	**4.19** [c]		
Total Project Floodplain Impacts					**19.17** [c]	**13.43** [c]		

Source: Grid United 2025f

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 permanent impacts in floodplains are associated with structure footprints 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 and ROW. The Montana Landcover Framework (2017) 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] Values of <0.01 were summed as 0.01.

Table 3.6-4
Surveyed Waterbodies Crossed by the Project

State and County	Perennial	Intermittent	Ephemeral	Natural Pond	Stock Pond	Total Waterbodies
Montana						
Rosebud	3	33	37	7	4	84
Custer	13	73	87	11	3	187
Fallon	15	9	19	5	2	50
Montana Subtotal	*31*	*115*	*143*	*23*	*9*	*321*
North Dakota						
Golden Valley	0	4	3	1	1	9
Slope	17	12	5	4	7	45
Hettinger	7	4	1	5	3	20
Grant	5	1	1	5	7	19
Morton	5	10	8	5	10	38
Oliver	5	0	6	1	1	13
North Dakota Subtotal	*39*	*31*	*24*	*21*	*29*	*144*
Project Area Total	**70**	**146**	**167**	**44**	**38**	**465**

Source: WEST 2025

Table 3.6-5
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	2	4	0
Temporary				
Temporary access road	0	1	1	0
Overland travel	0	3	0	0
ROW clearing [b]	0	1	0	0
MSTL Subtotal	*0*	*7*	*5*	*0*
BLM—MILES CITY FIELD OFFICE				
HVDC Transmission Line				
Permanent				
Permanent access road	0	2	5	0
Temporary				
Overland travel	1	0	0	0
ROW clearing [b]	1	0	0	0
BLM Subtotal	*2*	*2*	*5*	*0*
USDA FOREST SERVICE—LMNG				
HVDC Transmission Line				
Permanent	0	0	0	0
Temporary				
Temporary access road	1	1	1	0
ROW clearing [b]	0	1	1	2
USDA Forest Service Subtotal	*1*	*2*	*2*	*2*

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	5	12	0
Temporary				
Temporary access road	0	0	2	0
ROW clearing [b]	0	0	0	0
USDA Agricultural Research Service Subtotal	*0*	*5*	*14*	*0*
Project Total	**3**	**16**	**26**	**2**

Source: Grid United 2025b

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. Project survey data is represented in this table; desktop data was not needed to supplement waterbodies crossed on public lands.
[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 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 3.6-6
Waterbodies Crossed by Project Impact Areas [a]

State/Segment	Perennial	Intermittent	Ephemeral	Lake/Pond
Montana				
Rosebud Transmission Lines	0	1	1	0
HVDC Transmission Line	9	72	83	6
Montana Subtotal	*9*	*73*	*84*	*6*
North Dakota				
HVDC Transmission Line	9	8	4	1
Oliver Transmission Line	2	1	4	0
Morton Transmission Line	0	0	0	0
North Dakota Subtotal	11	9	8	1
Project Total	**20**	**82**	**92**	**7**

Sources: Grid United 2025e

HVDC = high-voltage direct current; NHD = National Hydrography Dataset; ROW = right-of-way; USGS = U.S. Geological Survey
Note:
[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. In addition, data include both field survey data from wetland and waterbody surveys supplemented with USGS NHD data where surveys are not yet complete.

Table 3.6-7
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 3.6-8
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 3.6-9
Waterbody Impacts for the Project Area

Line Segment / State	County	HUC 8	MP	Unique ID [a]	Waterbody Name	Flow Regime	Temporary Impacts (acres) [b]	Permanent Impacts (acres) [b]	Potential Riparian Forest Adjacent [c]	Project Component [d]	303(d) Status	Public Land Ownership	State Class
Rosebud Transmission Line 1													
Montana	Rosebud	10100003	1.6	NHD [e]	Cow Creek	Intermittent	0	0	Yes	NA	Unimpaired	NA	C-3
Rosebud Transmission Line 2													
Montana	Rosebud	10100001	1.1	sroe404	Unnamed	Ephemeral	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
HVDC Transmission Line													
Montana	Rosebud	10100003	0.8	NHD [e]	Cow Creek	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
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	Overland Travel	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	Overland Travel	Unimpaired	NA	C-3
Montana	Rosebud	10100003	16.6	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	16.9	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	18.2	sroy013	Unnamed	Intermittent	<0.01	0	No	New, Temporary Access Road	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	sroy010	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	19.1	sroe409	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Rosebud	10100003	20.0	srod200	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Rosebud	10100003	20.3	srod201	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	C-3

Line Segment / State	County	HUC 8	MP	Unique ID [a]	Waterbody Name	Flow Regime	Temporary Impacts (acres) [b]	Permanent Impacts (acres) [b]	Potential Riparian Forest Adjacent [c]	Project Component [d]	303(d) Status	Public Land Ownership	State Class
Montana	Rosebud	10100003	20.3	srod202	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary	Unimpaired	NA	C-3
Montana	Rosebud	10100003	22.7	srod203	Unnamed	Intermittent	<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	Overland Travel	Unimpaired	NA	C-3
Montana	Rosebud	10100001	40.8	sroa203	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Rosebud	10100001	41.1	sroa202	Unnamed	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Rosebud	10100001	42.2	sroa201	Unnamed	Intermittent	<0.01	0	Yes	Overland Travel	Unimpaired	MSTL	C-3
Montana	Rosebud	10100001	42.3	sroe201	Graveyard Creek	Intermittent	0.01	0	No	Overland Travel	Unimpaired	MSTL	C-3
Montana	Custer	10100001	43.1	scun003	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100001	43.4	scun002	Unnamed	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100001	46.8	scun004	Unnamed	Ephemeral	0	0	Yes	NA	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	scue202	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	52.9	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	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100001	54.2	scua219	Unnamed	Intermittent	0.01	0	No	Overland Travel	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	scua223	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3
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	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	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	56.2	scua225	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	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	0.01	No	New, Permanent Access Road	Unimpaired	USDA	C-3

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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	57.3	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	60.3	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	62.8	scud401	Unnamed	Ephemeral	0	0.01	No	Existing, Needs Improvement Access Road	Unimpaired	NA	C-3
Montana	Custer	10090102	62.9	scua218	Unnamed	Intermittent	0	<0.01	Yes	Existing, Needs Improvement Access Road	Unimpaired	NA	C-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	68.0	scue417	Unnamed	Intermittent	0	0.01	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	71.5	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	74.9	scue205	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
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	<0.01	No	New, Permanent 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	80.8	scuc227	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana	Custer	10090102	80.9	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	0.02	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

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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	scue409	Unnamed	Ephemeral	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	scuc226	Unnamed	Intermittent	0	<0.01	Yes	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	82.5	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	NA	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	83.1	scuc215	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	C-3
Montana	Custer	10090210	83.3	scuc214	Unnamed	Intermittent	0	<0.01	No	New, Permanent Access Road	Unimpaired	NA	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	0.04	No	New, Permanent Access Road	Unimpaired	NA	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	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	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	85.4	scuc204	Unnamed	Ephemeral	0	<0.01	No	New, Permanent Access Road	Unimpaired	MSTL	C-3
Montana	Custer	10090210	85.6	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	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10090209	87.9	scuc201	Strevell Creek	Intermittent	<0.01	0	Yes	Overland Travel	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	89.9	scua204	Unnamed	Ephemeral	0.01	0	No	New, Temporary Access Road	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	90.6	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

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Montana	Custer	10090209	98.5	scud223	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
Montana	Custer	10090209	103.4	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	No	New, Temporary Access Road	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	0.10	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	0.02	0	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Custer	10090209	112.3	scuf202	Archdale Creek	Perennial	0	0	Yes	NA	Unimpaired	BLM	C-3
Montana	Custer	10090209	113.1	scud208	Archdale Creek	Perennial	0.02	0	Yes	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100005	115.9	ocud201	Unnamed	Pond	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100005	116.9	scud204	Unnamed	Intermittent	<0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100005	117.3	scud202	South Fork Cottonwood Creek	Perennial	0.01	0	No	Overland Travel	Unimpaired	NA	C-3
Montana	Custer	10100005	117.7	scud200	Unnamed	Ephemeral	<0.01	0	No	Overland Travel	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	sfae206	O'Fallon Creek	Perennial	0.08	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	No	New, Temporary Access Road	Unimpaired	NA	C-3
Montana	Fallon	10100005	138.9	sfae205	Sandstone Creek	Perennial	0.01	0	No	Overland Travel	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	156.4	sfae401	Cottonwood Creek	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	C-3

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Montana	Fallon	10110203	158.8	sfae213	Johny Creek	Perennial	0.01	0	Yes	Overland Travel	Unimpaired	NA	C-3
Montana	Fallon	10110203	159.8	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	161.8	sfak202	Unnamed	Ephemeral	0	0	Yes	NA	Unimpaired	NA	C-3
Montana Subtotal							*0.56*	*0.42*					
North Dakota	Golden Valley	10110203	178.9	ogon001	Unnamed	Pond	0	0	Yes	NA	Unimpaired	USDA Forest Service	Class III
North Dakota	Golden Valley	10110203	183.1	sgoe201	Bull Run Creek	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	183.5	sgoa401	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Golden Valley	10110203	184.3	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	185.2	sgoe205	Bull Run Creek	Intermittent	0.03	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Slope	10110203	187.3	osle201	Unnamed	Pond	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10110203	194.3	oslk002	Spring Creek	Pond	0	0	Yes	NA	Unimpaired	USDA Forest Service	Class III
North Dakota	Slope	10110203	195.5	sslk006	Unnamed	Intermittent	0.01	0	Yes	New, Temporary Access Road	Unimpaired	USDA Forest Service	Class III
North Dakota	Slope	10110203	195.9	sslk008	Unnamed	Ephemeral	<0.01	0	Yes	New, Temporary Access Road	Unimpaired	USDA Forest Service	Class III
North Dakota	Slope	10110203	197.8	sslk005	Deep Creek	Perennial	0.02	0	No	New, Temporary Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	198.2	sslg200	Deep Creek	Perennial	-	0.02	No	New, Permanent Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	198.6	sslg200	Deep Creek	Perennial	0.01	-	No	New, Temporary Access Road	Impaired	NA	Class III
North Dakota	Slope	10110203	199.0	sslk010	Deep Creek	Perennial	0.02	0	No	New, Temporary Access Road	Impaired	USDA Forest Service	Class III
North Dakota	Slope	10110203	210.2	ssll402	Unnamed	Ephemeral	<0.01	0	Yes	Overland Travel	Unimpaired	NA	Class III
North Dakota	Slope	10110203	211.2	osll402	Unnamed	Pond	<0.01	0	Yes	Overland Travel	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	0.01	0	No	Overland Travel	Unimpaired	NA	Class III
North Dakota	Slope	10110203	213.3	ssll403	Sand Creek	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10110203	213.7	ssll404	Unnamed	Intermittent	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Slope	10130204	216.8	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	0.03	0	No	Overland Travel	Impaired	NA	Class II
North Dakota	Slope	10130204	226.9	sslf403	Cannonball River	Perennial	0.01	0	No	Overland Travel	Impaired	NA	Class II

Line Segment / State	County	HUC 8	MP	Unique ID [a]	Waterbody Name	Flow Regime	Temporary Impacts (acres) [b]	Permanent Impacts (acres) [b]	Potential Riparian Forest Adjacent [c]	Project Component [d]	303(d) Status	Public Land Ownership	State Class
North Dakota	Slope	10130204	228.1	sslf401	Cannonball River	Perennial	<0.01	0	No	Overland Travel	Impaired	NA	Class II
North Dakota	Hettinger	10130204	245.4	shei201	Coon Creek	Perennial	0.01	0	No	Overland Travel	Unimpaired	NA	Class III
North Dakota	Hettinger	10130204	246.0	shek003	Unnamed	Intermittent	0.01	0	No	Overland Travel	Unimpaired	NA	Class III
North Dakota	Grant	10130203	316.2	sgrg201	Antelope Creek	Perennial	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota	Grant	10130203	318.7	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	0.01	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	Oliver	10130101	48.1	sovb202	Unnamed	Ephemeral	0.03	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
North Dakota	Oliver	10130101	48.6	sovb204	Square Butte Creek	Perennial	0	0	Yes	NA	Impaired	NA	Class IA
North Dakota	Oliver	10130101	48.8	sovb205	Square Butte Creek	Perennial	0.01	0	No	New, Temporary Access Road	Impaired	NA	Class IA
North Dakota	Oliver	10130101	49.0	sovf401	Square Butte Creek	Perennial	0.01	0	No	New, Temporary Access Road	Impaired	NA	Class IA
North Dakota	Oliver	10130101	51.2	sovd401	Unnamed	Ephemeral	<0.01	0	No	New, Temporary Access Road	Unimpaired	NA	Class III
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	21.3	smre205	Unnamed	Perennial	0	0	Yes	NA	Unimpaired	NA	Class III
North Dakota Subtotal							*0.26*	*0.02*					
Project Total							**0.82**	**0.44**					

Sources: Grid United 2025c; WEST 2025

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; NHD = National Hydrography Dataset; ROW = right-of-way; USDA = U.S. Department of Agriculture

Notes:

[a] Unique ID is the identification code given to waterbodies during field surveys. Desktop features added in where surveys are not complete are indicated by "NHD" for NHD used to supplement these areas.

[b] Acreage of either temporary or permanent impacts is based on crossing of Project impact area, as provided in the "Project Component" column. A dash in either column indicates that a waterbody is listed in more than one row and is crossed by both temporary and permanent impact types. 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.

[c] 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 to 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.

[d] Project Component includes the Project impact area or access road that crosses 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. NA in this column indicates a waterbody within the Project ROW that does not cross Project impact areas.

[e] Acreage estimates are based on length of NHD lines in impact area assuming a 10-foot-wide feature.

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Table 3.6-10
Named Waterbodies Crossed by the Project Centerline

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	Unimpaired	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	sfae205	138.9	Sandstone Creek	Perennial	Impaired	NA	C-3
Montana	Fallon	10100005	sfae408	142.5	Sandstone Creek	Perennial	Impaired	NA	C-3
Montana	Fallon	10110203	sfae213	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	sslp001	187.4	Little Missouri River	Perennial	Impaired	NA	Class II
North Dakota	Slope	10110203	sslg200	198.2	Deep Creek	Perennial	Impaired	NA	Class III
North Dakota	Slope	10110203	sslg200	198.6	Deep Creek	Perennial	Impaired	NA	Class III
North Dakota	Slope	10110203	sslk009	199.2	Deep Creek	Perennial	Impaired	NFS	Class III
North Dakota	Slope	10130204	sslf404	226.7	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	sheo001	253.0	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	Hettinger	10130204	shek001	255.6	Dead Horse Creek	Intermittent	Impaired	NA	Class III
North Dakota	Hettinger	10130204	shel401	260.7	Hay Slough Creek	Perennial	Unimpaired	NA	Class III
North Dakota	Hettinger	10130204	sheo004	278.2	Thirtymile Creek	Perennial	Unimpaired	NA	Class III
North Dakota	Grant	10130203	sgrg201	316.2	Antelope 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
Morton Transmission Line									
North Dakota	Morton	10130206	smre203	3.8	Chanta Peta Creek	Perennial	Unimpaired	NA	Class III

Source: Grid United 2025b

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

Note:

[a] Waterbodies in this table are crossed by the Project centerline. No impact areas are proposed at these crossings.

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

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 area				
HVDC Transmission Line				
Rosebud County, Montana	5.4	East Fork Armells Creek	Nitrate/Nitrite	Perennial
	13.5 [b]	Rosebud Creek	Other cause	Perennial
	16.8 [b]	Rosebud Creek	Other cause	Perennial
	16.9 [b]	Rosebud Creek	Other cause	Perennial
Custer County, Montana	62.7	Tongue River	Suspended Solids	Perennial
	92.5	Powder River	Salinity	Perennial
Fallon County, Montana	138.8	Sandstone Creek	Nitrate/Nitrite	Perennial
	142.4	Sandstone Creek	Nitrate/Nitrite	Perennial
	142.7	Sandstone Creek	Nitrate/Nitrite	Perennial
Slope County, North Dakota	197.9	Deep Creek	Fecal Coliform	Perennial
	198.2	Deep Creek	Fecal Coliform	Perennial
	198.3	Deep Creek	Fecal Coliform	Perennial
	198.6	Deep Creek	Fecal Coliform	Perennial
	199.0	Deep Creek	Fecal Coliform	Perennial
	226.4	Cannonball River	Escherichia Coli	Intermittent
	226.6	Cannonball River	Escherichia Coli	Intermittent
	226.9	Cannonball River	Escherichia Coli	Intermittent
	228.0	Cannonball River	Escherichia Coli	Intermittent
Hettinger County, North Dakota	255.4	Dead Horse Creek	Escherichia Coli	Intermittent
	255.5	Dead Horse Creek	Escherichia Coli	Intermittent
	255.6	Dead Horse Creek	Escherichia Coli	Intermittent

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
	49.0	Square Butte Creek	Sedimentation, Siltation	Perennial
Morton Transmission Line				
No 303(d) Impaired waters mapped within the Project impact area				

Source: Grid United 2025a

HVDC = high-voltage direct current; MP = Milepost; ROW = right-of-way
Note:
[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 3.6-9.
[b] The Project crosses the indicated 303d waterbody at multiple locations near this MP, including access road crossings outside the ROW.

Table 3.6-12
Wetlands Delineated during Aquatic Resource Inventory Surveys along the Project Area [a]

State and County	Cowardin Wetland Classification			Total Wetlands Delineated
	PEM	PFO	PSS	
Montana				
Rosebud	46	1	0	47
Custer	78	0	0	78
Fallon	70	1	0	71
Montana Subtotal	*194*	*2*	*0*	*196*
North Dakota				
Golden Valley	13	0	0	13
Slope	90	0	0	90
Hettinger	42	1	0	43
Grant	57	1	2	60
Morton	109	0	0	109
Oliver	15	2	0	17
North Dakota Subtotal	*326*	*4*	*2*	*332*
Project Total	**520**	**6**	**2**	**528**

Source: WEST 2025

ARI = aquatic resource inventory; NFS = National Forest System; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub/shrub

[a] An ARI for the Project was conducted on a 300-foot-wide transmission line survey corridor, 50-foot-wide access road corridors (100 feet on NFS lands), pulling and tensioning sites, laydown yards, facility footprints, and additional construction areas (WEST 2025). Field surveys were conducted between 2022 and 2024; due to reroutes along the Project, some surveyed areas are no longer located along the Project route as it is proposed in the EIS. Field surveys are ongoing, and 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				
Temporary access road	0.02	0.00	0.00	<0.01
HVDC Transmission Line				
Permanent				
Access road	2.91	0.00	0.00	0.00
Impact area	<0.01	0.00	0.00	0.00
Temporary				
Access road	1.95	0.00	0.01	0.00
Impact area	1.19	0.00	0.00	0.00
Montana Subtotal				
Permanent	2.92	0.00	0.00	0.00
Temporary	3.16	0.00	0.01	<0.01
Subtotal	*6.08*	*0.00*	*0.01*	*<0.01*
NORTH DAKOTA				
HVDC Transmission Line				
Permanent				
Access road	0.07	0.00	0.00	0.00
Impact area	<0.01	0.00	0.00	0.00
ROW clearing	0.00	0.29	0.00	0.00
Temporary				
Access road	1.84	0.00	0.01	0.00
Impact area	1.67	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	1.77	0.00	0.08	0.00
Impact area	0.97	0.00	0.00	0.00
Morton Transmission Line				
Permanent	0.00	0.00	0.00	0.00
Temporary				
Access road	0.26	0.00	0.00	0.00
Impact area	0.24	0.00	0.00	0.00
North Dakota Subtotal				
Permanent	0.10	0.29	0.00	0.00
Temporary	6.75	0.00	0.09	0.00
Subtotal	*6.85*	*0.00*	*0.09*	*0.00*
Project Impact Area Total	**12.93**	**0.29**	**0.11**	**<0.01**

Source: Grid United 2025b

HVDC = high-voltage direct current; MWRF = Montana Wetland and Riparian Framework; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub; ROW = right-of-way

Notes:

[a] Data in this table includes all private, state, and federal lands crossed. In addition, data includes both field survey data from wetland and waterbody surveys supplemented areas where surveys are not yet complete with MWRF data in Montana and National Wetland Inventory data in North Dakota.

[b] Totals may not add up due to rounding.

[c] Impacts on PFO and PSS wetlands resulting from forest vegetation removal and maintenance within the 200-foot-wide ROW would result in the conversion of less than 0.04 acre of PFO within the Project ROW and 0.25 acre of PSS wetland in Grant County, North Dakota, where they cross the maintained Project ROW.

Table 3.6-14
Wetlands Crossed by the Project Impact Area on Federal Land [a,b,c,d,e]

State / Transmission Line / Impact Type	PEM Wetland (acres)	PFO/PSS Wetland (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				
MSTL	0.00	0.00	0.00	<0.01
HVDC Transmission Line				
Permanent				
BLM	0.03	0.00	0.00	0.00
USDA ARS	0.00	0.00	0.00	0.00
MSTL	0.11	0.00	0.00	0.00
Temporary				
BLM	0.05	0.00	0.00	0.00
USDA ARS	0.00	0.00	0.00	0.00
MSTL	0.05	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	0.11	0.00	0.00	0.00
NDSTL	<0.01	0.00	0.00	0.00
Project Total	**0.37**	**0.00**	**0.00**	**<0.01**

Source: Grid United 2025b

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; 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.

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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	MWRF	2.7	PUS	Temporary	Existing, Needs Improvement Access Road	<0.01	MSTL
Montana	Rosebud	wroe404e	0.9	PEM	Temporary	Overland Travel	0.02	NA
HVDC Transmission Line								
Montana	Rosebud	wrol402e	13.2	PEM	Permanent	Existing, Needs Improvement Access Road	0.02	NA
Montana	Rosebud	MWRF	13.5	PEM	Permanent	Existing, Needs Improvement Access Road	1.51 [d]	NA
Montana	Rosebud	MWRF	13.5	PEM	Temporary	Temporary Impact Area	0.09	NA
Montana	Rosebud	wrol401e	13.5	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	wrol403e	13.5	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Rosebud	wroi201e	15.8	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Rosebud	wroe201e	16.7	PEM	Temporary	New, Temporary Access Road	0.21	NA
Montana	Rosebud	MWRF	16.8	PEM	Permanent	Existing, Needs Improvement Access Road	1.10 [d]	NA
Montana	Rosebud	MWRF	16.9	PEM	Temporary	Overland Travel Access Road	0.60	NA
Montana	Rosebud	MWRF	16.9	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	MWRF	16.9	PEM	Temporary	Overland Travel Access Road	<0.01	NA
Montana	Rosebud	MWRF	16.9	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Rosebud	MWRF	16.9	PEM	Temporary	Temporary Impact Area	0.97	NA
Montana	Rosebud	MWRF	16.9	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	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	wrod201e	23.8	PEM	Temporary	New, Temporary Access Road	0.01	MSTL
Montana	Rosebud	wrog204e	24.0	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	MSTL
Montana	Rosebud	wrog205e	24.1	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	MSTL
Montana	Rosebud	wrog206e	24.1	PEM	Permanent	Existing, Needs Improvement Access Road	0.04	MSTL
Montana	Rosebud	wrog207e	24.1	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	MSTL
Montana	Rosebud	wrog208e	24.2	PEM	Permanent	Existing, Needs Improvement Access Road	0.03	MSTL
Montana	Rosebud	wrod200e	25.8	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Rosebud	wrod203e	27.0	PEM	Temporary	New, Temporary Access Road	0.01	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	Overland Travel	0.02	NA
Montana	Custer	wcun003e	43.7	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcun002e	44.4	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcun001e	44.6	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
Montana	Custer	wcun004e	46.8	PEM	Temporary	Overland Travel	<0.01	NA
Montana	Custer	wcun006e	48.1	PEM	Temporary	Overland Travel	0.01	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	Overland Travel	0.01	NA
Montana	Custer	wcue207e	69.9	PEM	Permanent	New, Permanent Access Road	<0.01	NA
Montana	Custer	wcue402e	73.8	PEM	Permanent	New, Permanent Access Road	0.01	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	0.01	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	0.03	NA
Montana	Custer	wcuk007e	108.1	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Custer	wcuk006e	108.2	PEM	Permanent	Existing, Needs Improvement Access Road	<0.01	NA
Montana	Custer	wcuq002e	110.1	PEM	Permanent	New, Permanent Access Road	0.03	BLM
Montana	Custer	wcuf200e	111.4	PEM	Temporary	New, Temporary Access Road	0.02	MSTL
Montana	Custer	wcuy002e	112.6	PEM	Temporary	Overland Travel	<0.01	BLM
Montana	Custer	wcud206e	113.1	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcuh202e	113.9	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcud203e	115.1	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcud216e	115.6	PEM	Temporary	Overland Travel	0.01	NA
Montana	Custer	wcud213e	115.9	PEM	Temporary	Overland Travel	0.02	NA
Montana	Custer	wcud202e	117.3	PEM	Temporary	Overland Travel	0.02	NA
Montana	Fallon	wfag201e	120.0	PEM	Temporary	New, Temporary Access Road	0.01	NA
Montana	Fallon	wfag202e	120.0	PEM	Temporary	New, Temporary Access Road	0.02	NA
Montana	Fallon	wfag203e	121.2	PEM	Temporary	New, Temporary Access Road	0.04	NA
Montana	Fallon	wfag205e	121.2	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	126.9	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	0.01	BLM
Montana	Fallon	wfae204e	135.5	PEM	Temporary	Overland Travel	0.05	NA
Montana	Fallon	wfan004e	136.4	PEM	Temporary	Overland Travel	0.01	NA
Montana	Fallon	wfan003e	136.7	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
Montana	Fallon	MWRF	138.8	R	Temporary	Overland Travel	0.01	NA
Montana	Fallon	wfal004e	142.9	PEM	Temporary	Temporary Impact Area	0.04	NA
Montana	Fallon	wfal004e	142.9	PEM	Temporary	Overland Travel	0.06	NA
Montana	Fallon	wfai204e	151.5	PEM	Temporary	Overland Travel	0.03	NA
Montana	Fallon	wfak201e	160.0	PEM	Temporary	Overland Travel	0.05	NA
Montana	Fallon	wfak203e	160.2	PEM	Temporary	Overland Travel	0.30	NA
Montana	Fallon	wfak204e	160.3	PEM	Permanent	Existing, Needs Improvement Access Road	0.01	NA
Montana	Fallon	wfak205e	160.5	PEM	Temporary	Overland Travel	<0.01	NA
Montana	Fallon	wfae201e	161.5	PEM	Temporary	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	Overland Travel	0.05	NA
Montana	Fallon	wfak001e	173.5	PEM	Temporary	Temporary Impact Area	0.02	NA
North Dakota	Golden Valley	wgon007e	175.4	PEM	Temporary	Overland Travel	0.02	NFS
North Dakota	Golden Valley	wgoe011e	175.7	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Golden Valley	wgoe012e	176.1	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Golden Valley	wgoe013e	177.4	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Golden Valley	wgon004e	178.9	PEM	Temporary	Overland Travel	0.04	NFS
North Dakota	Golden Valley	wgop002e	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	0.01	NA
North Dakota	Golden Valley	wgon003e	183.4	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Slope	wslk014e	194.3	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	199.0	PEM	Temporary	New, Temporary Access Road	0.02	NFS
North Dakota	Slope	wslk016e	200.1	PEM	Temporary	New, Temporary Access Road	0.07	NA
North Dakota	Slope	wsll401e	204.8	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wsli202e	208.2	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wsll405e	211.9	PEM	Permanent	Existing, Needs Improvement Access Road	0.04	NA
North Dakota	Slope	wsll408e	213.8	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	220.0	PEM	Temporary	New, Temporary Access Road	0.11	NA
North Dakota	Slope	wslf419e	220.1	PEM	Temporary	New, Temporary Access Road	<0.01	NA
North Dakota	Slope	wslf420e	220.2	PEM	Temporary	New, Temporary Access Road	0.01	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	226.2	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Slope	wslf401e	228.0	PEM	Temporary	Overland Travel	0.04	NA

Segment/State	County	Unique ID [a]	MP	Cowardin Class	Impact Type	Project Component [b]	Acres Impact [c]	Public Land Ownership
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	231.3	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wslo009e	231.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wslo005e	232.6	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	wsln003e	233.4	PEM	Temporary	Overland Travel	0.10	NA
North Dakota	Slope	wsln002e	234.0	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Slope	wslk002e	237.2	PEM	Temporary	Temporary Impact Area	<0.01	NA
North Dakota	Slope	wslk003e	237.7	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Slope	NWI	239.8	R	Temporary	Overland Travel	0.01	NA
North Dakota	Slope	wsll001e	240.6	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Hettinger	whel406e	245.1	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Hettinger	whei202e	245.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Hettinger	whea401e	247.4	PEM	Temporary	Temporary Impact Area	<0.01	NDSTL
North Dakota	Hettinger	whel408e	247.9	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Hettinger	whel407e	248.4	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Hettinger	wheq001e	257.6	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Hettinger	whek003e	259.3	PEM	Temporary	Overland Travel	0.08	NA
North Dakota	Hettinger	whel405e	260.8	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Hettinger	whel405e	260.8	PEM	Temporary	Temporary Impact Area	0.12	NA
North Dakota	Hettinger	whel405e	260.8	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Hettinger	whej001e	272.3	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Hettinger	whej001e	272.3	PEM	Temporary	Temporary Impact Area	0.79	NA
North Dakota	Hettinger	wheo003e	274.5	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Hettinger	NWI	278.7	PEM	Temporary	Temporary Impact Area	0.22	NA
North Dakota	Hettinger	whef009e	280.4	PEM	Temporary	Temporary Impact Area	0.39	NA
North Dakota	Hettinger	whef007e	282.4	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Grant	wgrh204e	305.7	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Grant	wgrg201e	314.0	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Grant	wgrg203e	315.1	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Grant	wgrf006e	319.2	PSS	Permanent (conversion)	Tree Clearing	0.25	NA
North Dakota	Grant	wgrd401e	322.6	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Grant	wgrq004f	322.8	PFO	Permanent (conversion)	Tree Clearing	0.04	NA
North Dakota	Grant	wgrg001e	325.6	PEM	Temporary	Overland Travel	0.11	NA
North Dakota	Grant	wgre404e	328.0	PEM	Temporary	Overland Travel	0.04	NA

Segment/State	County	Unique ID [a]	MP	Cowardin Class	Impact Type	Project Component [b]	Acres Impact [c]	Public Land Ownership
North Dakota	Grant	wgre405e	328.3	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Grant	wgrd403e	329.6	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Grant	wgrd407e	330.7	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Grant	wgrc402e	331.5	PEM	Temporary	Overland Travel	0.08	NA
North Dakota	Grant	wgrc403e	331.9	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Grant	wgre403e	334.7	PEM	Temporary	Temporary Impact Area	0.16	NA
North Dakota	Grant	wgrc401e	334.8	PEM	Temporary	Overland Travel	0.05	NA
North Dakota	Morton	wmrc402e	335.4	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Morton	wmrc403e	335.7	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Grant	wgra402e	336.7	PEM	Temporary	New, Temporary	<0.01	NA
North Dakota	Morton	wmrl401e	336.8	PEM	Temporary	New, Temporary	0.01	NA
North Dakota	Morton	wmrl402e	337.0	PEM	Temporary	New, Temporary	0.01	NA
North Dakota	Morton	wmrc201e	337.5	PEM	Temporary	New, Temporary	0.05	NA
North Dakota	Morton	wmri202e	338.6	PEM	Temporary	New, Temporary	0.02	NA
North Dakota	Morton	wmri201e	338.7	PEM	Temporary	New, Temporary	0.07	NA
North Dakota	Morton	wmri204e	338.8	PEM	Temporary	New, Temporary	0.05	NA
North Dakota	Morton	wmob001e	340.4	PEM	Temporary	Overland Travel	0.02	NA
Oliver Transmission Line								
North Dakota	Morton	wmra404e	3.7	PEM	Temporary	Overland Travel	<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	Overland Travel	0.02	NA
North Dakota	Morton	wmrc202e	6.1	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Morton	wmrc202e	6.2	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Morton	wmre410e	6.2	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Morton	wmre410e	6.2	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Morton	wmrc203e	6.9	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Morton	wmry007e	7.2	PEM	Temporary	Overland Travel	0.07	NA
North Dakota	Morton	wmre205e	7.9	PEM	Temporary	Overland Travel	0.17	NA
North Dakota	Morton	wmre205e	7.9	PEM	Temporary	Temporary Impact Area	0.17	NA
North Dakota	Morton	wmre207e	10.0	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Morton	wmre211e	10.2	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Morton	wmre204e	11.2	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Morton	wmre203e	11.4	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Morton	wmrq003e	14.1	PEM	Temporary	Temporary Impact Area	0.02	NA
North Dakota	Morton	wmrq003e	14.1	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Morton	wmry008e	16.2	PEM	Temporary	Overland Travel	0.04	NA
North Dakota	Morton	wmrh202e	17.4	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	Morton	wmrh203e	17.5	PEM	Temporary	Temporary Impact Area	0.11	NA
North Dakota	Morton	wmrh203e	17.6	PEM	Temporary	Overland Travel	0.19	NA
North Dakota	Morton	NWI	20.1	R	Temporary	Overland Travel	0.01	NA
North Dakota	Morton	wmrd405e	21.2	PEM	Temporary	New, Temporary	0.05	NA
North Dakota	Morton	wmrl405e	21.5	PEM	Temporary	New, Temporary	0.05	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	0.02	NA
North Dakota	Morton	wmry004e	22.6	PEM	Temporary	New, Temporary Access Road	0.02	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	0.04	NA
North Dakota	Morton	wmrr003e	29.1	PEM	Temporary	New, Temporary Access Road	0.01	NA
North Dakota	Morton	wmra401e	29.7	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Morton	wmra403e	29.9	PEM	Temporary	Overland Travel	<0.01	NA
North Dakota	Morton	wmre404e	31.8	PEM	Temporary	Overland Travel	0.14	NA
North Dakota	Morton	wmre403e	32.6	PEM	Temporary	Overland Travel	0.03	NA
North Dakota	Morton	wmre402e	32.8	PEM	Temporary	Temporary Impact Area	0.15	NA
North Dakota	Morton	wmre402e	32.9	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Morton	wmre402e	32.9	PEM	Temporary	Overland Travel	0.10	NA
North Dakota	Morton	wmre402e	32.9	PEM	Permanent	Structure Foundation	<0.01	NA
North Dakota	Morton	wmre402e	32.9	PEM	Temporary	Overland Travel	0.10	NA
North Dakota	Morton	wmre401e	33.1	PEM	Temporary	Overland Travel	0.10	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	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	0.04	NA
North Dakota	Morton	wmrl406e	40.9	PEM	Temporary	Temporary Impact Area	0.09	NA
North Dakota	Oliver	wovb204e	41.9	PEM	Temporary	New, Temporary Access Road	0.07	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	NWI	48.6	R	Temporary	New, Temporary Access Road	0.07	NA
Morton Transmission Line								
North Dakota	Morton	wmrq004e	1.7	PEM	Temporary	Overland Travel	0.02	NA
North Dakota	Morton	wmrd401e	6.7	PEM	Temporary	Temporary Impact Area	0.22	NA
North Dakota	Morton	wmrd401e	6.8	PEM	Temporary	Overland Travel	0.14	NA

Segment/State	County	Unique ID [a]	MP	Cowardin Class	Impact Type	Project Component [b]	Acres Impact [c]	Public Land Ownership
North Dakota	Morton	wmrn003e	12.9	PEM	Temporary	Overland Travel	0.10	NA
North Dakota	Morton	wmrz002e	13.6	PEM	Temporary	Overland Travel	0.01	NA
North Dakota	Morton	NWI	21.8	PEM	Temporary	Temporary Impact Area	0.02	NA

Source: Grid United 2025b

HVDC = high-voltage direct current; ID = identification; MP = Milepost; MSTL = Montana State Trust Lands; MWRF = Montana Wetland and Riparian Framework; NA = not applicable; NDSTL = North Dakota State Trust Lands; NFS = National Forest System; NWI = National Wetlands Inventory; PEM = palustrine emergent; PFO = palustrine forested; PSS = palustrine scrub-shrub; PUS = palustrine, unconsolidated shoreline; R = Riverine; USDA = U.S. Department of Agriculture
Notes:
[a] Unique ID is the code given to wetlands during field surveys. Desktop features added in areas where field surveys are not complete are indicated by either MWRF, which refers to the MWRF data used in Montana, and NWI for NWI data used in North Dakota.
[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.
[d] Two MWRF-mapped wetlands in Rosebud County cross access roads identified as Existing, Needs Improvement, which exceed 0.5 acre of permanent impacts. The Proponent anticipates these acreages would be reduced below U.S. Army Corps of Engineers nationwide permitting thresholds upon field surveys.

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B.2.2.6. Minerals and Geology

Table 3.7-1
Bedrock Units Crossed by the Project

Geologic Formation	Period	Description
Alluvium	Quaternary	• 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	• 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	• Pinkish siltstone, clay, and sand • Alluvial and lacustrine deposits
Golden Valley Formation	Tertiary	• Yellowish-brown, white, and yellow micaceous sandstone, sand, silt, and clay • Fluvial deposits
Sentinel Butte Formation	Tertiary	• Grayish-brown silt, sand, clay, sandstone, and lignite • Alluvial, lacustrine, and marsh deposits
Bullion Creek Formation	Tertiary	• Yellowish-brown silt, sand, clay, sandstone, and lignite • Alluvial, lacustrine, and marsh deposits
Slope Formation	Tertiary	• Grayish-brown to yellowish-brown silt, sand, clay, sandstone, and lignite deposits • Alluvial, lacustrine, and marsh deposits
Cannonball Formation	Tertiary	• Olive brown sand, shale, and sandstone • Marine shoreline and offshore deposits
Fort Union Formation, Ludlow Member	Tertiary	• 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	• 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	• 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	• Yellowish orange sandstone, sandy and silty carbonaceous shale, and coal • Alluvial plain • Thickness as much as 300 meters (984 feet)
Hell Creek Formation	Cretaceous	• 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	• 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	• 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

Sources: MBMG 2023a; NDGS 2001

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	1,015.7
Wire pulling / tensioning	643.8
Guard structures	11.8
Temporary access road	212.9
Overland travel	444.4
Turnaround areas	13.5
Permanent	
Structure footprint	2.7
ROW clearing [c]	519.0
Existing access road improvement	58.9
Permanent access road	104.5
ROSEBUD TRANSMISSION LINE	
Temporary	
Structure pads	3.5
Wire pulling / tensioning	0.1
Guard structures	0.3
Temporary access road	NA
Overland travel	1.0
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	141.4
Wire pulling / tensioning	94.6
Guard structures	4.6
Temporary access road	43.7
Overland travel	45.0
Turnaround areas	1.6
Permanent	
Structure footprint	0.4
ROW clearing [c]	59.2
Existing access road improvement	6.3

Segment or Facility / Impact Type [a] / Project Component	Shallow Depth to Bedrock (acres) [b]
Permanent access road	NA
MORTON TRANSMISSION LINE	
Temporary	
Structure pads	66.7
Wire pulling / tensioning	33.4
Guard structures	1.6
Temporary access road	NA
Overland travel	44.2
Turnaround areas	0.8
Permanent	
Structure footprint	0.2
ROW clearing [c]	15.4
Existing access road improvement	10.9
Permanent access road	NA
FACILITIES	
Temporary	
Rosebud County Converter Station	NA
Morton County Converter Station	30.1
Morton County Switchyard	6.6
Permanent	
Rosebud County Converter Station	31.6
Morton County Converter Station	2.0
Morton County Switchyard	NA
Existing access road improvement	1.7
Permanent access road [c]	0.8

Source: Grid United 2024

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 of the CMRP (Appendix E).

Table 3.7-3
Shallow Bedrock Crossed by the Project

Project Component / State / County	Temporary (acres) [a]	Permanent (acres) [a]
HVDC TRANSMISSION LINE		
Montana		
Rosebud	485.0	277.3
Custer	679.3	285.7
Fallon	387.6	27.8
Subtotal [b]	*1,551.9*	*590.8*
North Dakota		
Golden Valley	56.5	7.4
Slope	391.0	40.2
Hettinger	268.8	2.2
Grant	343.9	24.9
Morton	45.3	6.6
Subtotal [b]	*1,105.4*	*81.3*
ROSEBUD TRANSMISSION LINE		
Montana		
Rosebud	4.9	3.0
Subtotal [b]	*4.9*	*3.0*
OLIVER TRANSMISSION LINE		
North Dakota		
Morton	269.2	44.8
Oliver	81.5	21.0
Subtotal [b]	*350.7*	*65.8*
MORTON TRANSMISSION LINE		
North Dakota		
Morton	158.4	26.5
Subtotal [b]	*158.4*	*26.5*
FACILITIES		
Montana		
Rosebud	34.1	34.1
Subtotal [b]	*34.1*	*34.1*
North Dakota		
Morton	38.7	2.0
Subtotal [b]	*38.7*	*2.0*
Total	**3,244.2**	**803.5**

Source: Grid United 2024

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] 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	162.7	15.3	18.0
Wire pulling / tensioning	106.7	16.8	4.6
Guard structures	0.7	0.0	1.1
Temporary access road	56.9	<0.1	0.5
Overland travel	37.6	10.8	8.8
Turnaround areas	4.1	<0.1	0.0
Subtotal	*368.7*	*42.9*	*33.0*
Permanent			
Structure footprint	0.5	<0.1	<0.1
ROW clearing [b]	59.1	0.0	0.0
Existing access road improvement	11.6	1.6	0.0
Permanent access road	49.5	0.1	0.0
Subtotal	*120.7*	*1.7*	*0*

Sources: BLM 2021; Grid United 2024

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 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 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 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	0.7
Temporary access road	3.4
Overland travel	25.6
Turnaround areas	0.2
Subtotal	*84.1*
Permanent	
Structure footprint	0.2
ROW clearing [b]	1.2
Existing access road improvement	0.4
Permanent access road	0.0
Subtotal	*1.8*

Source: NDGS 2009

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 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)	Between 15 and 30 Percent (acres)	Greater than 30 Percent (acres)
HVDC TRANSMISSION LINE			
Montana			
Rosebud	306.4	116.2	65.1
Custer	475.8	268.6	105.3
Fallon	522.7	15.3	62.6
Subtotal	*1,304.9*	*400.1*	*233.0*

Segment / State / County	Between 0 and 15 Percent (acres)	Between 15 and 30 Percent (acres)	Greater than 30 Percent (acres)
North Dakota			
Golden Valley	110.2	5.1	0.0
Slope	501.2	12.9	31.6
Hettinger	499.7	2.1	6.8
Grant	333.5	23.5	0.7
Morton	55.9	6.2	1.5
Subtotal	*1,500.5*	*49.8*	*40.6*
ROSEBUD TRANSMISSION LINE			
Montana			
Rosebud	54.3	7.3	2.1
Subtotal	*54.3*	*7.3*	*2.1*
OLIVER TRANSMISSION LINE			
North Dakota			
Morton	392.0	26.4	43.0
Oliver	97.7	2.0	30.2
Subtotal	*489.7*	*28.4*	*73.2*
MORTON TRANSMISSION LINE			
North Dakota			
Morton	161.1	25.4	1.8
Subtotal	*161.1*	*25.4*	*1.8*
FACILITIES			
Montana			
Rosebud	44.3	0.3	0.0
Subtotal	*44.3*	*0.3*	*0.0*
North Dakota			
Morton	154.8	5.4	0.0
Subtotal	*154.8*	*5.4*	*0.0*
Total	3,709.6	516.7	350.7

HVDC = high-voltage direct current

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)
Temporary	
Structure pads	139.2
Wire pulling / tensioning	111.6
Guard structures	2.1
Temporary access road	7.7
Overland travel	93.8
Turnaround areas	0.5
Permanent	
Structure footprint	0.6
ROW clearing [b]	13.1
Existing access road improvement	3.0
Permanent access road	0.0

Source: Grid United 2025a

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 of the CMRP (Appendix E).

Table 3.7-8
Areas Where Blasting May Occur

Route / Land / Ownership / Project Area	Impact Type		Total [a]
	Temporary (acres)	Permanent (acres)	(acres)
HVDC TRANSMISSION LINE	**273.0**	**290.6**	**563.6**
Private Land	203.7	224.3	428.0
Structure footprint	NA	5.6	5.6
Access road: Existing, Needs Improvement	2.8	111.9	114.6
Access road: New, Permanent	NA	106.8	106.8
Access road: New, Temporary	200.9	NA	200.9
BLM	**17.6**	**19.8**	**37.4**
Structure footprint	NA	0.2	0.2

Route / Land / Ownership / Project Area	Impact Type		Total [a]
	Temporary (acres)	Permanent (acres)	(acres)
Access road: Existing, Needs Improvement	NA	1.7	1.7
Access road: New, Permanent	NA	18.0	18.0
Access road: New, Temporary	17.6	NA	17.6
USDA FOREST SERVICE	**19.8**	**3.7**	**23.7**
Structure footprint	NA	0.2	0.2
Access road: Existing, Needs Improvement	NA	3.7	3.7
Access road: New, Temporary	19.8	NA	19.8
USDA	**11.0**	**17.9**	**28.9**
Structure footprint	NA	0.2	0.2
Access road: New, Permanent	NA	17.8	17.8
Access road: New, Temporary	11.0	NA	11.0
MSTL	**20.9**	**24.0**	**44.9**
Structure footprint	NA	0.3	0.3
Access road: Existing, Needs Improvement	1.0	9.9	10.9
Access road: New, Permanent	NA	13.8	13.8
Access road: New, Temporary	19.9	NA	19.9
NDSTL—SURFACE	**NA**	**0.7**	**0.7**
Surface footprint	NA	0.1	0.1
Access road: Existing, Needs Improvement	NA	0.6	0.6
ROSEBUD TRANSMISSION LINE	**NA**	**0.2**	**0.2**
Private Land	NA	0.1	0.1
Structure footprint	NA	NA	0.1
MSTL	**NA**	**0.1**	**0.1**
Structure footprint	NA	0.1	0.1
OLIVER TRANSMISSION LINE	**61.4**	**10.2**	**71.5**
Private Land	**61.4**	**9.1**	**70.5**
Structure footprint	NA	1.2	1.2
Access road: Existing, Needs Improvement	NA	7.9	7.9
Access road: New, Temporary	61.4	NA	61.4
NDSTL—Surface	**NA**	**1.1**	**1.1**
Access road: Existing, Needs Improvement	NA	1.1	1.1
MORTON TRANSMISSION LINE	**NA**	**17.6**	**17.6**
Private Land	**NA**	**17.6**	**17.6**
Structure footprint	NA	0.4	0.4
Access road: Existing, Needs Improvement	NA	17.2	17.2

Route / Land / Ownership / Project Area	Impact Type		Total [a]
	Temporary (acres)	Permanent (acres)	(acres)
FACILITY—ACCESS ROAD EXISTING, NEEDS IMPROVEMENT	**NA**	**2.6**	**2.6**
Private Land	**NA**	**1.7**	**1.7**
Access road: Existing, Needs Improvement	NA	1.7	1.7
MSTL	**NA**	**0.9**	**0.9**
Access road: Existing, Needs Improvement	NA	0.9	0.9
FACILITY—ACCESS ROAD NEW, PERMANENT	**NA**	**2.2**	**2.2**
Private Land	**NA**	**2.2**	**2.2**
Access road: New, Permanent	NA	2.2	2.2
FACILITY—MORTON COUNTY CONVERTER STATION	**NA**	**24.1**	**24.1**
Private Land	**NA**	**24.1**	**24.1**
Facility	NA	24.1	24.1
FACILITY—MORTON COUNTY SWITCHYARD	**NA**	**4.3**	**4.3**
Private Land	**NA**	**4.3**	**4.3**
Facility	NA	4.3	4.3
FACILITY—ROSEBUD COUNTY CONVERTER STATION	**NA**	**21.7**	**21.7**
MSTL	**NA**	**21.7**	**21.7**
Facility	NA	21.7	21.7

Source: Grid United 2025b

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.

Table 3.7-9
Potential Mineral Reuse on Split Estate Properties

Route / BLM Subsurface Minerals Category / Project Component	Impact Type		Total [a] (acres)
	Temporary (acres)	Permanent (acres)	
HVDC TRANSMISSION LINE	**56.7**	**39.3**	**95.9**
All Minerals / All Minerals Except Coal	**51.8**	**39.3**	**91.0**
Structure footprint	0.0	0.6	0.6
Access road: Existing, Needs Improvement	2.0	13.1	15.0
Access road: New, Permanent	0.0	25.6	25.6
Access road: New, Temporary	49.8	0.0	49.8
Other	**4.9**	**<0.1**	**4.9**
Structure footprint	0.0	<0.1	<0.1
Access road: New, Temporary	4.9	0.0	4.9
Restricted	0.0	<0.1	<0.1
Structure footprint	0.0	<0.1	<0.1
MORTON TRANSMISSION LINE	**0.0**	**<0.1**	**<0.1**
All Minerals	**0.0**	**<0.1**	**<0.1**
Structure footprint	0.0	<0.1	<0.1
Total	**56.7**	**39.3**	**95.9**

Source: Grid United 2025c

BLM = Bureau of Land Management; HVDC = high-voltage direct current
[a] Totals may not sum due to rounding.

B.2.2.7. 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	**81.1**
Fallon	3.9	0.0	5.3	0.0	0.0	46.4	**55.6**
Rosebud Transmission Line							
Rosebud	2.2	0.0	0.0	0.0	0.0	4.4	**6.6**
Montana Subtotal [b]	*17.0*	*0.0*	*9.8*	*0.0*	*7.9*	*145.3*	***180.0***
NORTH DAKOTA							
HVDC Transmission Line							
Golden Valley	0.0	0.0	0.0	3.1	0.0	10.0	**13.1**
Slope	0.0	1.0	0.0	7.1	0.0	48.1	**56.2**
Hettinger	0.0	2.1	0.0	0.0	0.0	48.7	**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**
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**
North Dakota Subtotal [b]	*0.0*	*4.7*	*0.0*	*10.2*	*0.0*	*226.6*	***241.5***

State/County	State of Montana	State of North Dakota	BLM	USDA Forest Service	USDA ARS	Private and Other [a]	Project Total [b]
Project Total [b]	**17.0**	**4.7**	**9.8**	**10.2**	**7.9**	**371.9**	**421.5**

Source: Grid United 2024

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	5.9	0.0	<0.1	0.0	0.0	<0.1
HVDC Transmission Line						
Rosebud	33.5	<0.1	2.8	0.4	0.0	<0.1
Custer	71.5	5.3	2.9	1.0	0.1	0.4
Fallon	43.8	10.1	0.3	0.4	0.0	1.1
Montana Subtotal [a]	*154.7*	*15.4*	*6.0*	*1.8*	*0.1*	*1.6*
NORTH DAKOTA						
HVDC Transmission Line						
Golden Valley	12.7	0.2	<0.1	0.1	0.0	<0.1
Slope	40.8	13.8	0.2	0.5	<0.1	1.0
Hettinger	12.8	36.8	0.0	0.5	0.1	0.7
Grant	24.3	16.0	0.2	0.2	0.0	0.6
Morton	5.3	1.3	<0.1	<0.1	0.0	0.1
Morton Transmission Line						
Morton	15.3	6.1	1.0	0.1	0.0	0.2
Oliver Transmission Line						
Morton	28.0	11.6	0.8	0.2	0.0	0.7
Oliver	8.6	1.4	0.4	<0.1	0.0	0.1
North Dakota Subtotal [a]	*147.8*	*87.2*	*2.8*	*1.6*	*0.1*	*3.4*
Project Total [a]	**302.5**	**102.6**	**8.8**	**3.4**	**0.2**	**5.0**

Source: Grid United 2024

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	99.3	Northwest
	150.6	Shed	32.5	North
	150.9	Shed	130.0	North
	151.1	Shed	157.0	Northeast
Rosebud Transmission Line	0.1	Shed	177.5	Southeast
North Dakota				
HVDC Transmission Line	289.7	Shed	146.2	North
	308.7	Grain bin	91.5	North
Oliver Transmission Line	37.4	Shed	81.8	East
	40.8	Shed	161.5	Northwest

Source: Grid United 2024

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	0
North Dakota				
HVDC Transmission Line	Slope	0	2	0
	Hettinger	0	1	1
	Grant	0	1	0
Oliver Transmission Line	Oliver	0	2	0
	Morton	0	7	9
Morton Transmission Line	Morton	0	0	0
Total		**0**	**15**	**10**

Source: Grid United 2025b

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	620	KNKR293

Source: FCC 2025

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	2.2	1.0–3.2
Rosebud Transmission Line Subtotal	*2.2*	*NA*
HVDC Transmission Line		
Rosebud	0.7	0.0–0.7
	1.0	12.4–13.4
	1.1	17.3–18.3 [b]
	1.0	23.6–24.6
	0.3	28.9–29.2
	1.0	35.5–36.5
	1.4	41.5–42.9 [b]
Custer	0.1	48.0–48.2 [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	110.8–111.3 [b]
Fallon	0.6	125.0–125.5 [b]
	0.2	132.4–132.5 [b]
	1.1	137.5–138.6 [b,c]
	1.0	150.1–151.2 [b]
	1.1	155.1–156.2
HVDC Transmission Line Subtotal	*14.9*	*NA*

State / Project Component / County	Distance Crossed (miles) [a]	MP
NORTH DAKOTA		
HVDC Transmission Line		
Slope	0.5	224.8–225.3
	0.5	225.3–225.8
Hettinger	0.1	247.3–247.4
	0.5	254.3–254.8
	0.5	254.8–255.3
	<0.1	255.3
	0.5	269.4–269.9
	0.5	269.9–270.4
Grant	0.5	309.3–309.8
	0.5	321.7–322.2
	<0.1	322.2
HVDC Transmission Line Subtotal	*4.1*	*NA*
Oliver Transmission Line		
Morton	<0.1	10.6
	<0.1	17.6–17.7
Oliver Transmission Line Subtotal	*0.1*	*NA*

Source: Grid United 2024

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 (acres)

Project	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
Component	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
Rosebud County Converter Station	17.7	21.7	0.0	0.0	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Morton County Converter Station	0.0	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	83.8	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0

Source: Grid United 2024

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 /	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
Project Component	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**	**Temp.**	**Perm.**
MONTANA												
HVDC Transmission Line												
Improved existing access road	2.7	106.8	0.0	1.4	0.1	1.7	0.0	4.4	0.0	0.0	<0.1	1.3
Temporary access road	195.3	NA	1.4	NA	12.9	NA	0.5	NA	0.0	NA	0.5	NA
Overland travel	224.2	NA	48.5	NA	2.7	NA	3.3	NA	0.0	NA	2.0	NA
Turnaround areas	18.7	NA	0.7	NA	0.4	NA	0.3	NA	0.0	NA	0.6	NA
Permanent access road	NA	149.6	NA	0.0	NA	5.2	NA	0.2	NA	0.0	NA	<0.1
Rosebud Transmission Line												
Overland travel	12.3	NA	0.0	NA	<0.1	NA	0.0	NA	0.0	NA	0.3	NA
Rosebud County Converter Station												
Overland travel	1.4	NA	0.0	NA	0.1	NA	0.0	NA	0.0	NA	0.0	NA
Turnaround areas	0.3	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA
Improved existing access road	NA	2.6	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0
Permanent access road	NA	1.2	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0
NORTH DAKOTA												
HVDC Transmission Line												
Improved existing access road	0.0	8.8	<0.1	1.2	0.0	<0.1	0.0	0.0	0.0	0.0	0.8	2.1

State / Project Component	Grassland and Shrubland		Agricultural		Forested		Wetland		Open Water		Developed	
	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.	Temp.	Perm.
Temporary access road	56.9	NA	1.6	NA	<0.1	NA	<0.1	NA	0.0	NA	<0.1	NA
Overland travel	232.2	NA	198.1	NA	0.6	NA	1.4	NA	0.0	NA	10.3	NA
Turnaround areas	2.4	NA	0.5	NA	0.0	NA	<0.1	NA	0.0	NA	0.3	NA
Permanent access road	NA	1.3	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA	0.0
Morton Transmission Line												
Improved existing access road	NA	7.4	NA	3.4	NA	0.0	NA	<0.1	NA	0.0	NA	6.5
Overland travel	41.5	NA	18.0	NA	0.1	NA	0.0	NA	0.0	NA	0.4	NA
Turnaround areas	0.6	NA	0.2	NA	0.0	NA	0.0	NA	0.0	NA	0.0	NA
Oliver Transmission Line												
Temporary access road	50.3	NA	7.2	NA	2.4	NA	0.4	NA	0.0	NA	1.1	NA
Improved existing access road	NA	3.9	NA	0.8	NA	0.0	NA	0.0	NA	0.0	NA	4.3
Overland travel	69.1	NA	30.8	NA	0.3	NA	0.2	NA	0.0	NA	1.3	NA
Turnaround areas	1.3	NA	0.1	NA	<0.1	NA	<0.1	NA	0.0	NA	0.0	NA
Morton County Switchyard												
Permanent access road	NA	0.6	NA	0.4	NA	0.0	NA	0.0	NA	0.0	NA	<0.1

Source: Grid United 2024

HVDC = high-voltage direct current; NA = not applicable; 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 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 Area (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	59.6	0.1	0.0	0.0	3.3	<0.1	0.0	0.0	0.0	0.0	0.6	<0.1	**63.6**	**0.2**
HVDC Transmission Line														
Rosebud	361.8	95.5	0.1	0.6	23.4	3.1	2.8	3.3	0.0	0.0	0.5	<0.1	388.6	102.6
Custer	635.3	154.1	45.8	0.9	22.5	4.0	7.9	0.5	0.0	0.0	3.8	1.2	715.4	160.8
Fallon	467.4	6.3	113.3	0.2	1.4	<0.1	2.1	0.0	0.0	0.0	9.9	<0.1	594.1	6.5
HVDC Transmission Line Subtotal	*1,464.5*	*255.9*	*159.2*	*1.7*	*47.3*	*7.1*	*12.9*	*3.8*	*0.0*	*0.0*	*14.2*	*1.4*	*1,698.1*	*269.9*
Montana Subtotal [b]	*1,524.1*	*256.0*	*159.2*	*1.7*	*50.6*	*7.1*	*12.9*	*3.8*	*0.0*	*0.0*	*14.8*	*1.4*	***1,761.7***	***270.1***

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.
NORTH DAKOTA														
HVDC Transmission Line														
Golden Valley	107.7	6.0	1.1	<0.1	0.1	0.0	0.2	0.0	0.0	0.0	0.1	<0.1	109.2	6.1
Slope	386.2	3.3	141.2	0.4	1.3	<0.1	0.9	<0.1	<0.1	0.0	10.7	1.8	540.2	5.4
Hettinger	119.8	0.3	380.2	0.7	0.0	0.0	1.1	<0.1	0.0	0.0	6.6	0.0	507.7	0.9
Grant	206.3	2.3	142.9	1.4	0.1	<0.1	0.3	0.0	0.0	0.0	3.8	0.2	353.5	4.0
Morton	46.0	0.1	17.5	<0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	63.8	0.1
HVDC Transmission Line Subtotal	*866.0*	*11.9*	*682.9*	*2.5*	*1.7*	*<0.1*	*2.5*	*<0.1*	*<0.1*	*0.0*	*21.4*	*2.1*	*1,574.5*	*16.5*
Morton Transmission Line [c]														
Morton	113.1	7.6	56.3	3.5	0.2	0.0	0.0	<0.1	0.0	0.0	1.1	6.5	**170.7**	**17.6**
Oliver Transmission Line [c]														
Morton	306.1	1.3	139.4	0.3	6.2	<0.1	0.4	0.0	0.0	0.0	3.8	3.9	455.9	5.4
Oliver	103.9	1.2	18.5	0.6	4.6	<0.1	0.3	0.0	0.0	0.0	0.7	<0.1	128.0	1.8
Oliver Transmission Line Subtotal	*410.1*	*2.5*	*158.0*	*0.9*	*10.8*	*<0.1*	*0.7*	*0.0*	*0.0*	*0.0*	*4.5*	*3.9*	*583.9*	*7.2*
North Dakota Subtotal [b]	*1389.2*	*22.0*	*897.0*	*6.8*	*12.6*	*<0.1*	*3.2*	*<0.1*	*<0.1*	*0.0*	*27.0*	*12.4*	***2,329.1***	***41.3***
Project Total [b]	**2,913.3**	**278.0**	**1,056.2**	**8.5**	**63.2**	**7.2**	**16.1**	**3.8**	**<0.1**	**0.0**	**41.8**	**13.8**	**4,090.8**	**311.4**

Source: Grid United 2024

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 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	18.8	<0.1
Rosebud Transmission Line Subtotal	*18.8*	*<0.1*
Rosebud County Converter Station		
Rosebud	18.7	22.7
Rosebud County Converter Station Subtotal	*18.7*	*22.7*
HVDC Transmission Line		
Rosebud	65.5	14.5
Custer	50.9	9.4
Fallon	56.2	<0.1
HVDC Transmission Line Subtotal	*172.6*	*24.0*
NORTH DAKOTA		
HVDC Transmission Line		
Slope	9.4	<0.1
Hettinger	21.8	<0.1
Grant	11.7	0.6
HVDC Transmission Line Subtotal	*42.9*	*0.7*
Oliver Transmission Line		
Morton	0.7	1.1
Oliver Transmission Line Subtotal	*0.7*	*1.1*
Project Total	**253.7**	**48.5**

Source: Grid United 2025a

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	2.8	<0.1
Custer	50.0	19.6
Fallon	72.1	0.2
Project Total	**124.9**	**19.8**

Source: Grid United 2025a

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		
Golden Valley	22.7	3.7
Slope	84.4	0.1
Project Total	**107.1**	**3.8**

Source: Grid United 2025a

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	71.3	17.9
Project Total	**71.3**	**17.9**

Source: Grid United 2025a

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

B.2.2.8. 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	**19.1**	**7.9**	**40.5**	**67.5**
Permanent	11.2	1.5	17.1	29.9
Temporary	7.9	6.4	23.4	37.6
Access turnaround	**0.9**	**0.1**	**1.2**	**2.3**
Guard structure pad	**0.3**	**0.0**	**0.3**	**0.6**
Pulling site	**7.3**	**7.5**	**28.6**	**43.4**
Structure footprint	**>0.1**	**>0.1**	**0.1**	**0.1**
Structure pad	**4.0**	**11.7**	**35.3**	**51.1**
Total acres [a]	**31.7**	**27.2**	**106.0**	**164.9**

VRM = Visual Resource Management
[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	0.5 mile from HVDC Transmission Line; MP 41	Graveyard Creek access road for BLM land and waterbody crossing	Yes
MT-03	Powder River Road; west	0.6 mile from HVDC Transmission Line; MP 93	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 99	View from Powder River Road	Yes
MT-05a	BLM VRM Class II parcel south of US 12	0.6 mile from HVDC Transmission Line; MP 103	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	Large area of contiguous BLM VRM II land south of US 12	Yes for northwest; No for southwest
MT-06	Milo's Montana Rest Area; south	0.7 mile from HVDC Transmission Line; MP 110	Highway rest area with views of BLM VRM II land	Yes
MT-07	BLM VRM Class II, north of US 12; west	0.2 mile from HVDC Transmission Line; MP 117	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

KOP Number	Location Description; View Direction	Distance from Proposed Alternative	Justification for Selected KOP	Visual Contract Rating Worksheet Completed? [a]
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 207	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
ND-06	I-94 west of Mandan; east	0.3 mile from EHV AC Oliver Transmission Line; MP 30	Crossing of I-94	No

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 the EIS.

B.2.2.9. 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**

Sources: 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

Sources: 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

Sources: 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.2.2.10. 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	62.5	7.5	66.4	10.5	128.9	18.0
Farmland of statewide importance	364.6	56.6	1,120.3	34.6	1,484.9	91.2
Hydric soils	2.0	2.9	21.6	0.1	23.6	3.0
Compaction-prone soils	2.7	3.1	11.5	<0.1	14.2	3.1
Highly water erodible soils	714.2	109.1	448.4	10.1	1,162.6	119.2
Highly wind erodible soils	2.1	<0.1	156.5	1.6	158.7	1.6
Soils with low revegetation potential	1,273.1	175.8	960.2	18.4	2,233.3	194.2
Rocky soils	157.4	9.7	18.2	<0.1	175.5	9.7
Shallow bedrock soils	1,082.8	147.5	1,482.9	27.4	2,565.7	174.9
Total acres [b]	**1,780.7**	**295.6**	**2,459.8**	**70.8**	**4,240.6**	**366.4**

Source: USDA NRCS 2019

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.2.2.11. 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

	Maximum Noise Level (dBA)			
Equipment [a]	**50 feet**	**600 feet**	**1,000 feet**	**2,000 feet**
Air compressor	78	56	51	45
ATV/UTV	75	53	48	42
Augers	84	62	57	51
Backhoe	78	56	51	45
Blasting	94	72	67	61
Bucket truck	75	53	48	42
Bulldozer	82	60	55	49
Concrete mixer truck	79	57	52	46
Crane	81	59	54	48
Dump truck	76	54	49	43
Excavator	81	59	54	48
Front-end loaders	79	57	52	46
Fuel truck	74	52	47	41
Generator	81	59	54	48
Grader	85	63	58	52
Pickup truck	55	33	28	22
Semitruck/trailer	74	52	47	41
Skid steer	79	57	52	46
Splicing van	55	33	28	22
Tractor	84	62	57	51
Water truck	85	63	58	52
Welder trucks	74	52	47	41

Source: Reherman et al. 2006

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	600 feet	1,000 feet	2,000 feet
Light/medium helicopter at takeoff	84	68	62	56
Sikorsky S61	100	86	80	74
Sikorsky Skycrane S64	102	88	82	76

Source: TRC 2015

dBA = A-weighted decibel

Table 3.12-4
Maximum Expected L50 Corona Sound Levels

150 feet (Reference Distance)	600 feet	1,000 feet	2,000 feet
40.3 dBA	34.3 dBA	32.3 dBA	29.3 dBA

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.2.2.12. Vegetation

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

Species	Montana Status	North Dakota Status [a]	Other Special Status	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 (*Phlox alyssifolia*)	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	No	No
Barr's Milkvetch (*Astragalus barrii*)	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 *(Pinus ponderosa)* and Rocky Mountain juniper *(Juniperus scopulorum).*	Yes	No	No
Blue Lips (*Collinsia parviflora*)	NA	SCP: Level II	USDA Forest Service RFSS	Sparsely vegetated soils of forest openings, grasslands, meadows, and rock outcrops from valley to subalpine.	Yes	No	No
Bractless Blazingstar (*Mentzelia nuda*)	SOC	NA	NA	Sandy or gravelly soil of open hills and roadsides on the plains.	Yes	Yes	No
Bush Morning-glory (*Ipomoea leptophylla*)	SOC	NA	NA	Found in open mixed-grass prairies in sandy or gravelly soils, waste ground, roadsides, and streambanks.	Yes	No	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Double Bladderpod (*Physaria brassicoides*)	SOC	NA	NA	Sparsely vegetated, steep, eroding, south-facing slopes of highly desecrated badlands and breaklands. Associated with Indian ricegrasses (*Oryzopsis hymenoides*), skunkbush (*Rhus trilobata*), and yucca (*Yucca spp.*).	Yes	No	No
Dwarf Mentzelia (*Mentzelia pumila*)	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
Easter Daisy (*Townsendia exscapa*)	NA	NA	USDA Forest Service RFSS	Sandy soils in grasslands, openings in pine forests, sagebrush steppe, and gravelly hills.	Yes	No	No
Foxtail Sedge (*Carex alopecoidea*)	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 (*Salix bebbiana),* beaked hazelnut (*Corylus cornuta*), fireberry hawthorn (*Crataegus chrysocarpa*), and paper birch (*Betula papyrifera*).	Yes	No	No
Heart-leaved Buttercup (*Ranunculus cardiophyllus*)	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	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 (*Carex gravida*)	SOC	NA	NA	Moist woodlands and prairies, such as ravines and wooded draws. Associated with green ash (*Fraxinus pennsylvanica*), serviceberry (*Amelanchier* spp.), quaking aspen (*Populus tremuloides*), and chokecherry (*Prunus virginiana*).	Yes	Yes	No
Hooker's Townsend's Daisy (*Townsendia hookeri*)	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	No	Yes
Lanceleaf Cottonwood (*Populus x acuminate*)	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	No	No
Large-flowered Beardtongue (*Penstemon grandiflorus*)	SOC	NA	NA	Valleys on the plains in well-draining sandy or loamy soils.	Yes	No	No
Lead Plant (*Amorpha canescens*)	SOC	NA	NA	Mixed-grass and tallgrass prairies, woodlands, and along stream banks. Typically, in sandy, gravely, or rocky soils. Associated with bluestem species (*Andropogon* spp.).	Yes	Yes	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Limber Pine (*Pinus flexilis*)	NA	SCP: Level II	USDA Forest Service RFSS	Semi-arid exposed rocky ridges, cliff-tops, and high mountains.	No	No	No
Mat Buckwheat (*Eriogonum caespitosum*)	SOC	NA	NA	Dry, stony limestone sagebrush steppes (*Artemisia* spp.).	Yes	No	No
Mountain Meadow Cinquefoil (*Potentilla diversifolia*)	NA	SCP: Level III	NA	Mixed-grass and shortgrass prairies, turf, fellfields; subalpine and alpine.	Yes	No	No
Narrowleaf Milkweed (*Asclepias stenophylla*)	SOC	NA	NA	Open pine woodlands and sandy soils of prairies. Associated with needle-and-thread (*Stipa comata*), ponderosa pine, prairie spiderwort (*Tradescantia occidentalis*), and threadleaf sedge (*Carex filifolia*).	Yes	No	No
Narrowleaf Penstemon (*Penstemon angustifolius*)	SOC	NA	NA	Prairie grasslands on hills and slopes with sandy soil and sparse vegetation. Associated with blue grama (*Bouteloua gracilis*), needle-and-thread, and prairie spiderwort.	Yes	No	No
Nine-anther Prairie Clover (*Dalea enneandra*)	SOC	SCP: Level III	NA	Plain slopes and gravelly-soiled grasslands. Associated with big sagebrush (*Artemisia tridentata*), narrowleaf yucca (*Yucca angustissima*), and needle-and-thread.	Yes	No	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Nodding Buckwheat (*Eriogonum cernuum*)	NA	SCP: Level II	USDA Forest Service RFSS	Streambanks, sandhills, sandstone outcrops, and grasslands with sandy soil.	Yes	No	No
Nuttall's Desert-parsley (*Lomatium nuttallii*)	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 (*Artemisia tridentata*), ponderosa pine (*Pinus ponderosa*), and Rocky Mountain juniper (*Juniperus scopulorum*).	Yes	No	No
Ovalleaf Milkweed (*Asclepias ovalifolia*)	SOC	NA	NA	Dry upland prairies, oak savannas, and pine barrens with gravelly, sandy, or clayey soils.	Yes	No	No
Painted Milkvetch (*Astragalus ceramicus apus*)	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 (*Phacelia hastata*), threetip sagebrush (*Artemisia tripartita*), and thickspike wheatgrass (*Elymus lanceolatus*).	Yes	No	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Persistent-sepal Yellow-cress (*Rorippa calycina*)	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	No
Pottery Milkvetch (*Astragalus ceramicus*)	SOC	NA	NA	Sand or sandy soils in desert shrub, grassland, riparian, montane, and pinyon-juniper communities.	Yes	No	No
Prairie Fameflower (*Talinum parviflorum*)	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	No	No
Prairie Violet (*Viola pedantifolia*)	SOC	NA	NA	Prairies, grasslands, disturbed ground, and gravelly hills, with well-draining, calcareous soils.	Yes	No	No
Raceme Milkvetch (*Astragalus racemosus*)	SOC	NA	NA	Grows in grasslands and is highly dependent on clay or chalky, alkaline soils rich in selenium.	Yes	Yes	No
Sand Cherry (*Prunus pumila*)	SOC	NA	NA	Open grasslands with sparse vegetation and sandy or rocky soil.	Yes	No	No
Sand Lily (*Leucocrinum montanum*)	NA	SCP: Level II	USDA Forest Service RFSS	Shortgrass prairies, sagebrush deserts, sandy flats, scrub flats, and coniferous woodlands.	Yes	No	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Scweinitz's Flatsedge (*Cyperus schweinitzii*)	SOC	NA	NA	Prairie grasslands on ridges and slopes, often on sandy blowouts or near sandstone outcrops. Sparse vegetation and sandy soil.	Yes	No	No
Scribner's Ragwort (*Senecio integrimus scribneri*)	SOC	NA	NA	Mixed-grass prairies, sagebrush, mountain brush, aspen, fir, and ponderosa communities.	Yes	No	No
Silky Prairie Clover (*Dalea villosa*)	SOC	NA	NA	Sandy soils of deserts, dry prairies, and open woodlands on sparsely vegetated sites. Associated with needle-and-thread, sand bluestem, and white sagebrush.	Yes	No	No
Silver Bladderpod (*Physaria ludoviciana*)	SOC	NA	NA	Dry prairies with sandy soil derived from limestone.	Yes	No	No
Slender-branched Popcorn-flower (*Plagiobothrys leptocladius*)	SOC	NA	NA	Plains and foothill zone in the drying mud on the shores of ponds.	Yes	No	No
Slim-pod Venus' Looking-glass (*Triodanis leptocarpa*)	SOC	NA	NA	Plains, grasslands, sagebrush-dominated grasslands, and grass-dominated rocky slopes.	Yes	No	No
Smooth Goosefoot (*Chenopodium subglarum*)	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	No	No

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Stickseed (*Lappula cenchrushoides*)	NA	SCP: Level II	NA	Dry soils in open areas, such as mixed-grass and shortgrass prairies, badlands, streams, rivers, and riparian.	Yes	No	No
Tall Dropseed (*Sporobolus compositus*)	SOC	NA	NA	Mixed-grass and tallgrass prairies, savanna communities, disturbed areas, and open forests.	Yes	No	No
Thin-fruited Knotweed (*Polygonum leptocarpum*)	NA	SCP: Level I	NA	Western mixed-grass and shortgrass prairies, streams, rivers, and riparian areas.	Yes	No	No
Torrey's Cryptantha (*Cryptantha torreyana*)	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	No	No
Variegated Scouring Rush (*Equisetum variegatum*)	NA	NA	USDA Forest Service RFSS	Around lakes, seeps, and streams with wet, often calcareous, gravely soil.	Yes	No	No
Visher's Buckwheat (*Eriogonum visheri*)	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

Species	Montana Status	North Dakota Status [a]	Other Special Status	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
Wood Lily (*Lilium philadelphicum*)	SOC	NA	NA	Moist, tall- and midgrass prairies, fens, woodlands, valleys, and calcareous meadows.	Yes	No	No
Woolly Milkweed (*Asclepias lanuginose*)	NA	SCP: Level I	NA	Prairies with sandy to rock soils, gravelly hillsides prairies, and dry uplands woods.	Yes	No	No
Woolly Twinpod (*Physaria didymocarpa lanata*)	SOC	NA	NA	Grassland or shrublands slopes with sandy, often calcareous soil.	Yes	No	No

Source: Grid United 2024

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.

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 (*Artemisia absinthicum*)	No	Slope, Hettinger, Grant, Morton	NA	NA	All counties
Baby's breath (*Gypsophila paniculata*)	No	No	NA	NA	Grant
Black henbane (*Hyoscyamus niger*)	No	No	None	Rosebud	Golden Valley, Slope, Grant
Blueweed (*Echium vulgare*)	No	No	Priority 1B	All counties	NA
Brazilian waterweed (*Egeria densa*)	No	No	Priority 3	All counties	NA
Canada thistle (*Cirsium arvense*)	Rosebud, Custer, Fallon	Golden Valley, Slope Hettinger, Grant, Morton, Oliver	Priority 2B	All counties	All counties
Cheatgrass (*Bromus tectorum*) [b, c]	Rosebud, Custer, Fallon	No	Priority 3	All counties	NA
Cicer milkvetch (*Astragalus cicer*) [c]	No	Hettinger	NA	NA	All counties
Common buckthorn (*Rhamnus cathartica*)	No	No	Priority 2A	All counties	NA
Common burdock (*Arctium minus*)	No	No	NA	Fallon	Golden Valley
Common mullein (*Verbascum thapsus*)	No	No	NA	NA	Golden Valley
Common reed (*Phragmites australis* ssp. *australis*)	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
Common tansy (*Tanacetum vulgare*)	No	No	Priority 2B	All counties	NA
Crested wheatgrass (*Agropyron cristatum*) [c]	No	Golden Valley, Slope	NA	NA	All counties
Curlyleaf pondweed (*Potamogeton crispus*)	No	No	Priority 2B	All counties	NA
Dalmatian toadflax (*Linaria dakmatica*)	No	No	Priority 2B	All counties	All counties
Diffuse knapweed (*Centaurea diffusa*)	No	No	Priority 2B	All counties	All counties
Dyer's woad (*Isatis tinctoria*)	No	No	Priority 1A	All counties	NA
Eurasian watermilfoil (*Myriophyllum spicatum, M. spicatum x M. sibiricum*)	No	No	Priority 2A	All counties	NA
Field bindweed (*Convolvulus arvensis*)	Rosebud, Custer, Fallon	Golden Valley, Slope, Hettinger, Grant, Morton	Priority 2B	All counties	NA
Field brome (*Bromus arvensis*) [c]	No	Golden Valley, Slope	NA	NA	NA
Flowering rush (*Butomus umbellatus*)	No	No	Priority 2A	All counties	NA
Halogeton (*Halogeton glomeratus*)	No	No	NA	NA	Grant
Hoary alyssum (*Berteroa incana*)	No	No	Priority 2B	All counties	NA
Hoary cress (*Lepidium draba*)	No	No	NA	NA	Grant, Golden Valley

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
Houndstongue (*Cynoalossum officinale*)	No	Slope	Priority 2B	All counties	All counties
Hydrilla (*Hydrilla verticillate*)	No	No	Priority 3	All counties	NA
Intermediate wheatgrass (*Thinopyrum intermedium*) [c]	No	Golden Valley	NA	NA	NA
Kentucky bluegrass (*Poa pratensis*) [c]	No	Golden Valley, Slope	NA	NA	NA
Knotweed complex (*Polygonum cuspidatum, P. sachalinense, P. x bohemicum, Fallopia japonica, F. sachalinensis, F. x bohemica, Reynoutria japonica, R. sachalinensis, R. x bohemica*)	No	No	Priority 1B	All counties	NA
Kochia (*Bassia scoparia*)	No	No	None	Rosebud	NA
Leafy spurge (*Euphorbia esula*)	Custer, Fallon	Slope, Hettinger, Grant, Morton, Oliver	Priority 2B	All counties	All counties
Meadow hawkweed (*Hieracium caespitosum, H. praealtum, H. floridundum, Pilosella caespitosa*)	No	No	Priority 2A	All counties	NA
Medusahead (*Taeniatherum caput-medusae*)	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 (*Carduus nutans*)	Rosebud	Morton	NA	NA	All counties
Orange hawkweed (*Hieracium auranticum, Pilosella aurantica*)	No	No	Priority 2A	All counties	NA
Oxeye daisy (*Leucanthemum vulgare*)	No	No	Priority 2B	All counties	NA
Palmer amaranth (*Amaranthus palmeri*)	No	No	NA	NA	All counties
Parrot feather watermilfoil (*Myriophyllum aquaticum, M. brasiliense*)	No	No	Priority 3	All counties	NA
Perennial pepperweed (*Lepidium latifolium*)	No	No	Priority 2A	All counties	NA
Poison hemlock (*Conium maculatum*)	No	No	None	Fallon, Rosebud	NA
Puncture vine (*Tribulus terrestris*)	No	No	None	Rosebud	NA
Purple loosestrife (*Lythrum salicaria*)	No	No	Priority 1B	All counties	All counties
Rush skeletonweed (*Chondrila juncea*)	No	No	Priority 1B	All counties	NA
Russian knapweed (*Acroptilon repens, Rhaponticum repens*)	No	No	Priority 2B	All counties	All counties

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
Russian olive (*Elaeagnus angustifolia*)	No	No	Priority 3	All counties	NA
Saltcedar (*Tamarix* spp.)	Rosebud, Custer	No	Priority 2B	All counties	All counties
Scotch broom (*Cytisus scoparius*)	No	No	Priority 1B	All counties	NA
Scotch thistle (*Onopordum acanthium*)	No	No	None	Rosebud	NA
Smooth brome (*Bromus inermis*) [c]	No	Golden Valley	NA	NA	NA
Spotted knapweed (*Centaurea maculosa*)	Fallon	No	Priority 2B	All counties	All counties
St. Johnswort (*Hypericum perforatum*)	No	No	Priority 2B	All counties	NA
Sulfur cinquefoil (*Potentilla recta*)	No	No	Priority 2B	All counties	NA
Tall buttercup (*Ranunculus acris*)	Custer	No	Priority 2A	All counties	NA
Tansy ragwort (*Jacobaea vulgaris*)	Fallon	No	Priority 2A	All counties	NA
Ventenata grass (*Ventenata dubia*)	No	No	Priority 2A	All counties	Slope
Waterhemp (*Amaranthus rudis tuberculatus*)	No	No	NA	NA	Grant
Whitetop (*Cardaria draba, Lepidium draba*)	No	No	Priority 2B	All counties	NA
Yellow starthistle (*Centaurea solstitialis*)	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 (*Linaria vulgaris*)	No	No	Priority 2B	All counties	All counties
Yellowflag iris (*Iris pseudacorus*)	No	No	Priority 2A	All counties	NA

Source: Grid United 2025a

NA = not applicable; 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 USFWS but not considered a statewide noxious weed in Montana or North Dakota.

Table 3.13-3
Impacts on Vegetative Land Covers within the Project Area [a,b]

Transmission Line or Facility	Herbaceous Grassland [c]		Shrubland		Forest and Woodland [d]		Agriculture		Other (Non-Vegetated or Developed Areas)		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	48.2	0.1	52.5	0.1	8.5	20.7	0.0	0.0	20.8	<0.1	129.9	20.8
HVDC TRANSMISSION LINE												
Montana												
Rosebud	372.4	44.8	404.3	45.5	20.1	167.9	8.2	0.0	36.8	1.6	841.8	259.8
Custer	1,190.0	90.7	472.0	41.9	12.5	164.5	142.6	1.7	126.1	16.9	1943.2	315.7
Fallon	942.9	6.8	138.2	1.1	3.8	51.5	304.6	0.2	69.6	19.7	1,459.2	60.7
Subtotal	*2,505.2*	*142.3*	*1,014.5*	*88.5*	*36.4*	*383.9*	*455.5*	*1.9*	*232.6*	*19.7*	*4,244.2*	*636.2*
North Dakota												
Golden Valley	265.6	4.6	67.6	0.2	0.0	1.5	0.0	0.0	2.9	1.2	336.1	7.5
Slope	960.3	3.2	207.3	1.5	0.1	4.4	294.3	0.4	58.7	0.3	1,520.6	9.7
Hettinger	437.0	0.3	4.0	<0.1	0.0	1.0	903.7	0.8	39.0	0.6	1,383.7	2.8
Grant	723.8	2.4	4.4	0.0	0.0	3.2	326.4	0.5	13.8	1.0	1,068.5	7.1
Morton	140.6	0.1	1.3	0.0	0.0	0.2	32.0	<0.1	1.6	0.0	175.5	0.3
Subtotal	*2,527.3*	*10.5*	*284.6*	*1.7*	*0.1*	*10.3*	*1,556.4*	*1.8*	*116.0*	*3.2*	*4,484.4*	*27.5*

Transmission Line or Facility	Herbaceous Grassland [c]		Shrubland		Forest and Woodland [d]		Agriculture		Other (Non-Vegetated or Developed Areas)		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[e]												
North Dakota												
Morton	101.8	0.1	0.0	0.0	0.0	0.0	39.3	0.1	2.2	0.0	143.4	0.2
OLIVER TRANSMISSION LINE												
North Dakota												
Morton	728.4	4.6	2.9	<0.1	0.1	9.9	273.9	0.2	24.1	3.4	1,029.3	18.0
Oliver	284.8	1.8	1.6	0.0	0.1	0.5	9.3	<0.1	4.6	<0.1	300.4	2.3
Subtotal	*1,013.2*	*6.3*	*4.5*	*<0.1*	*0.2*	*10.4*	*283.1*	*0.2*	*28.7*	*3.4*	*1,329.7*	*20.4*
MORTON TRANSMISSION LINE												
North Dakota												
Morton	315.2	8.1	3.1	0.0	0.0	2.9	157.8	5.7	6.5	3.7	482.6	20.5
FACILITIES												
Montana												
Rosebud	0.1	1.1	18.2	23.9	0.4	0.4	0.0	0.0	0.1	0.4	18.9	25.7
North Dakota												
Morton	6.7	0.0	0.0	0.0	0.0	0.0	123.1	29.3	1.0	0.1	130.8	29.4
Montana Subtotal	*2,553.5*	*143.5*	*1,085.2*	*112.5*	*45.3*	*405.0*	*455.5*	*1.9*	*253.5*	*20.1*	*4,139.5*	*662.9*
North Dakota Subtotal	*3,964.2*	*25.0*	*292.2*	*1.7*	*0.3*	*23.6*	*2,159.7*	*37.1*	*154.4*	*10.4*	*6,416.4*	*87.4*
Total	**6,517.7**	**168.6**	**1,377.4**	**114.2**	**45.6**	**428.5**	**2,615.3**	**38.9**	**407.7**	**30.3**	**10,963.8**	**780.6**

Source: Grid United 2025b

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

[d] 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 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.

[e] 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.2.2.13. Fisheries and Wildlife

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

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

Species		Federal Status	State Status		Potential to Occur [a,b]		Typical
Common Name	**Scientific Name**		**Montana (SOC)**	**North Dakota (SCP)**	**Montana**	**North Dakota**	**Classification [c]**
Northern redbelly dace x finescale dace hybrid	*Chrosomus (Phoxinus) eos* x *Chrosomus neogaeus*	NA	SOC	NA	No	Yes	Coldwater
Sicklefin chub	*Macrhybopsis meeki*	NA	SOC	SCP: Level I	No	Yes	Warmwater
Sturgeon chub	*Macrhybopsis gelida*	BLM SSS	SOC	SCP: Level I	Yes	No	Warmwater
Mooneye							
Goldeye	*Hiodon alosoides*	NA	NA	NA	Yes	Yes	Warmwater
Paddlefish							
Paddlefish [d,e]	*Polyodon spathula*	BLM SSS	NA	NA	Yes	Yes	Warmwater
Perch							
Iowa darter	*Etheostoma exile*	BLM SSS	SOC	NA	No	Yes	Warmwater
Sauger [d,e]	*Sander canadensis*	BLM SSS	SOC	NA	Yes	Yes	Warmwater
Walleye [d,e]	*Sander vitreus*	NA	NA	NA	Yes	Yes	Warmwater
Yellow perch [d,e]	*Perca flavescens*	NA	NA	NA	Yes	Yes	Warmwater
Pike							
Northern pike [d,e]	*Esox lucius*	NA	NA	NA	Yes	Yes	Warmwater
Stickleback							
Brook stickleback	*Culaea inconstans*	NA	NA	NA	Yes	Yes	Warmwater
Sturgeon							
Pallid sturgeon	*Scaphirhynchus albus*	Endangered; BLM SSS	SOC	SCP: Level II	Yes	No	Warmwater
Shovelnose sturgeon [d]	*Scaphirhynchus platorynchus*	NA	NA	NA	Yes	Yes	Warmwater

Species		Federal Status	State Status		Potential to Occur [a,b]		Typical
Common Name	**Scientific Name**		**Montana (SOC)**	**North Dakota (SCP)**	**Montana**	**North Dakota**	**Classification [c]**
Sucker							
Bigmouth buffalo	*Ictiobus cyprinellus*	NA	NA	NA	Yes	Yes	Warmwater
Blue sucker	*Cycleptus elongatus*	NA	SOC	SCP: Level I	Yes	Yes	Warmwater
Shorthead redhorse	*Moxostoma macrolepidotum*	NA	NA	NA	Yes	Yes	Warmwater
Sucker	*Catostomus* spp.	NA	NA	NA	Yes	Yes	Warmwater
Sunfish							
Crappie [d,e]	*Pomoxis* spp.	NA	NA	NA	Yes	Yes	Warmwater
Bluegill [e]	*Lepomis macrochirus*	NA	NA	NA	Yes	Yes	Warmwater
Largemouth bass [d,e]	*Micropterus salmoides*	NA	NA	NA	Yes	Yes	Warmwater
Smallmouth bass [d,e]	*Micropterus dolomieu*	NA	NA	NA	Yes	Yes	Warmwater
Trout							
Brown trout [d,e]	*Salmo trutta*	NA	NA	NA	Yes	No	Coldwater
Rainbow trout [d,e]	*Oncorhynchus mykiss*	NA	NA	NA	Yes	Yes	Coldwater

Source: Grid United 2024b

BLM = Bureau of Land Management; NA = not applicable; SCP = Species of Conservation Priority; SOC = Species of Concern; SSS = Special Status Species

Notes:

[a] Based on species range

[b] Other potentially occurring species not listed in Grid United 2024b that may be found include brook trout, mountain whitefish, pumpkinseed, chinook salmon, muskellunge, saugeye, lake sturgeon, lake trout, tiger trout, cutthroat trout, white bass, and zander.

[c] Classification based on preferred water temperature for the fish species

[d] Recreational species in Montana

[e] Recreational species in Noth Dakota

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

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

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur in the Project Impact Area: Montana [a]	Documented to Occur in the Project Impact Area: North Dakota [a]
Paddlefish (*Polyodon spathula*)	NA	NA	SCP: Level II	BLM SSS	Large, slow-flowing rivers, or impoundments (possible in the Powder River)	Yes	Yes	No
Pallid sturgeon (*Scaphirhynchus albus*)	LE	SOC	SCP: Level II	BLM SSS	Main channels of large, deep, turbid rivers with sandy or gravelly bottoms	Yes	Yes	No
Sauger (*Sander canadensis*)	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 (*Lepisosteus platostomus*)	NA	SOC	NA	NA	Large rivers, quiet creek pools, river backwaters, and oxbow lakes	Yes	No	No
Sicklefin chub (*Macrhybopsis meeki*)	NA	SOC	SCP: Level I	NA	Main channels of large, turbid rivers with strong currents over sand or fine gravel bottoms	Yes	No	No
Sturgeon chub (*Macrhybopsis gelida*)	NA	SOC	SCP: Level I	BLM SSS	Turbid waters with moderate to strong current with bottoms ranging from coarse sand to gravel and rocks	Yes	Yes	No
Mussels								
Pink papershell (*Potamilus ohiensis*)	NA	NA	SCP: Level I	NA	Medium to large rivers, generally with sandy or muddy bottom substrates	Yes	No	No

Source: Grid United 2024b; FWP 2025c

BLM = Bureau of Land Management; LE = Listed Endangered; NA = not applicable; ROW = right-of-way; SCP = Species of Conservation Priority; SOC = Species of Concern; SSS = Special Status Species

Notes:

[a] Documented occurrences may occur in the Project impact area or ROW.

[b] This is documented in the FISHMT database.

Table 3.14-3
Special Status Species with Potential to Occur in Project Impact Areas

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Mammals								
Big brown bat (*Eptescius fuscus*)	NA	NA	SCP: Level I	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	NA	Yes
Eastern red bat (*Lasiurus borealis*)	NA	SOC	NA	NA	Summer resident of eastern Montana. Roosting habitat includes primarily deciduous trees and occasionally coniferous trees.	Yes	Yes	NA

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Bighorn sheep (*Ovis canadensis*)	NA	NA	NA	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	NA	No
Black-tailed prairie dog (*Cynomys ludovicianus*)	NA	SOC	SCP: Level I	BLM SSS; 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
Fringed myotis (*Myotis thysanodes*)	NA	SOC	NA	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	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Gray wolf (*Canis lupus*)	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 (*Chaetodipus hispidus*)	NA	SOC	SCP: Level III	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 (*Lasiurus cinereus*)	NA	SOC	NA	BLM SSS	Summer resident of Montana. Roosting habitat includes primarily deciduous trees and occasionally coniferous trees.	Yes	Yes	NA

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Little brown bat (*Myotis lucifugus*)	UR	SOC	SCP: Level I	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-eared myotis (*Myotis evotis*)	NA	SOC	SCP: Level III	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
Long-legged myotis (*Myotis volans*)	NA	SOC	SCP: Level III	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	Yes
Merriam's shrew (*Sorex merriami*)	NA	SOC	SCP: Level III	NA	Year-round resident of Montana and southwestern North Dakota. Inhabit arid short grass prairies or sage steppes.	Yes	Yes	No

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Northern long-eared bat (*Myotis septentrionalis*)	LE	SOC	SCP: Level I	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
Pallid bat (*Antrozous pallidus*)	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	NA
Sagebrush vole (*Lemmiscus curtatus*)	NA	NA	SCP: Level III	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
Spotted bat (*Euderma maculatum*)	NA	SOC	NA	BLM SSS	Summer resident of Montana. Roosting habitat includes caves and in cracks and crevices in cliffs and canyons.	Yes	Yes	NA
Swift fox (*Vulpes velox*)	NA	SOC	SCP: Level II	BLM SSS; RFSS	Year-round resident of eastern Montana. Inhabits arid grasslands and sage-steppe.	Yes	No	No

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Townsend's big-eared bat (*Corynorhinus townsendii*)	NA	SOC	SCP: Level I	BLM SSS 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 (*Perimyotis subflavus*)	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 small-footed bat (*Myotis ciliolabrum*)	NA	NA	SCP: Level III	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

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Birds								
American avocet (*Recurvirostra americana*)	NA	NA	SCP: Level II	NA; 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	NA	No
American bittern (*Botaurus lentiginosus*)	NA	SOC	SCP: Level I	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	No	No
American goshawk (*Astur atricapillus*)	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	NA

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American kestrel (*Falco sparverius*)	NA	NA	SCP: Level II	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	NA	Yes
American white pelican (*Pelecanus erythrorhynchos*)	NA	SOC	SCP: Level II	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
Baird's sparrow (*Centronyx bairdii*)	NA	SOC	SCP: Level I	BLM SSS; RFSS; BCC	Summer resident in North Dakota. Prefers native prairie but also uses idle, tame grasslands, and grazed pastures.	Yes	Yes	Yes
Bald eagle (*Haliaeetus leucocephalus*)	NA	NA	SCP: Level II	BLM SSS	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

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Black-backed woodpecker (*Picoides arcticus*)	NA	SOC	NA	BLM SSS	Year-round resident in Montana. Prefers early successional, burned forests with lodgepole pine (*Pinus contorta*), Douglas fir (*Pseudotsuga menziesii*), and spruce-fir (*Picea abies*) and are more common at lower elevations.	Yes	No	NA
Black-billed cuckoo (*Coccyzus erythropthalmus*)	NA	SOC	SCP: Level I	BLM SSS; BCC	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

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Black tern (*Chlidonias niger*)	NA	SOC	SCP: Level I	BLM SSS; BCC	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
Bobolink (*Dolichonyx oryzivorus*)	NA	SOC	SCP: Level II	NA; BCC	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 (*Spizella breweri*)	NA	SOC	SCP: Level III	BLM SSS	Summer resident in Montana. Requires sagebrush for nesting and prefers areas with heavy shrub cover.	Yes	Yes	No

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Burrowing owl (*Athene cunicularia*)	NA	SOC	SCP: Level II	BLM SSS; RFSS; BCC	Summer resident in Montana and North Dakota. Prefers open grasslands with abandoned or active prairie dog colonies, or Richardson's ground squirrel (*Urocitellus richardsonii*) burrows to use for nesting.	Yes	Yes	No
California gull (*Larus californicus*)	NA	NA	NA	BCC	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	NA	NA
Canvasback (*Aythya valisineria*)	NA	NA	SCP: Level II	NA	Summer resident in North Dakota east of the Missouri River. Prefers wetlands, small lakes, and marshes. Relies on deep wetlands for breeding.	Yes	NA	No
Cassin's finch (*Haemorhous cassinii*)	NA	SOC	NA	NA; BCC	Year-round resident in Montana. Occurs in all forest types but prefers ponderosa pine (*Pinus ponderosa*) and successional forests.	Yes	No	NA

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Chestnut-collared longspur (*Calcarius ornatus*)	NA	SOC	SCP: Level I	BLM SSS; BCC	Preferred summer habitats include shortgrass prairie and grazed pastures. Diet includes seeds and insects.	Yes	Yes	Yes
Clark's nutcracker (*Nucifraga Columbiana*)	NA	SOC	NA	NA; BCC	Year-round resident in Montana. At higher elevations, prefers white bark pine forests and at lower elevations prefers ponderosa pine, limber pine (*Pinus flexilis*), and Douglas fir forests.	Yes	No	NA
Common tern (*Sterna hirundo*)	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	NA
Dickcissel (*Spiza americana*)	NA	NA	SCP: Level II	NA; BCC	Summer resident in eastern Montana and North Dakota. Uses a variety of grassland types but requires moderate to tall vegetation.	Yes	NA	No

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Ferruginous hawk (*Buteo regalis*)	NA	SOC	SCP: Level I	BLM SSS; BCC	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 (*Leucophaeus pipixcan*)	NA	SOC	SCP: Level I	BLM SSS; BCC	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	Yes
Golden eagle (*Aquila chrysaetos*)	NA	SOC	SCP: Level II	BLM SSS	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	No

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Grasshopper sparrow (*Ammodramus savannarum*)	NA	NA	SCP: Level I	NA; BCC	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	NA	Yes
Great blue heron (*Ardea herodias*)	NA	SOC	NA	NA; BCC	Summer resident in eastern Montana and North Dakota. Primarily nests in cottonwoods (*Populus deltoides*) near rivers and lakes but also nests in ponderosa pines.	Yes	Yes	NA
Greater sage-grouse (*Centrocercus urophasianus*)	NA	SOC	SCP: Level I	BLM SSS; 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 (*Pipilo chlorurus*)	NA	SOC	NA	NA	Summer resident in Montana. Prefers the edge of habitats with mixed shrub species.	Yes	No	NA

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Horned grebe (*Podiceps auritus*)	NA	SOC	SCP: Level I	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
Interior least tern (*Sterna antillarum athalassos*)	NA	SOC	SCP: Level II	RFSS	Summer resident along Missouri River in North Dakota. Nests on sand-pebble beaches lacking vegetation.	No	No	No
Lark bunting (*Calamospiza melanocorys*)	NA	NA	SCP: Level I	NA; BCC	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	NA	Yes
LeConte's sparrow (*Ammospiza leconteii*)	NA	SOC	SCP: Level II	NA; 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

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Lesser scaup (*Aythya affinnis*)	NA	NA	SCP: Level II	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
Lesser yellowlegs (*Tringa flavipes*)	NA	NA	NA	BCC	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	NA	NA
Lewis's woodpecker (*Melanerpes lewisI*)	NA	SOC	NA	NA; BCC	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	NA

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Loggerhead shrike (*Lanius ludovicianus*)	NA	SOC	SCP: Level II	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
Long-billed curlew (*Numenius americanus*)	NA	SOC	SCP: Level I	BLM SSS; 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-eared owl (*Asio otus*)	NA	NA	NA	BCC	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	NA	NA
Marbled godwit (*Limosa fedoa*)	NA	NA	SCP: Level I	NA; BCC	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	NA	Yes

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Mountain plover (*Charadrius montanus*)	NA	SOC	NA	BLM SSS; BCC	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	NA
Northern harrier (*Circus hudsonius*)	NA	NA	SCP: Level II	BCC	Nearly year-round resident in North Dakota. Absent December–January. Nests in undisturbed grasslands. Forages in wetlands, grasslands, pastures, and agricultural lands.	Yes	NA	Yes
Northern pintail (*Anas acuta*)	NA	NA	SCP: Level II	NA	Summer resident in North Dakota. Nests in native prairie near shallow wetlands. Also uses hayfields and pastures. Forages in shallow wetlands.	Yes	NA	Yes

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Peregrine falcon (*Falco peregrinus*)	NA	NA	SCP: Level III	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	No
Pinyon jay (*Gymnorhinus cyanocephalus*)	UR	SOC	NA	BLM SSS; BCC	Relies on ponderosa pine (*Pinus ponderosa)* and pine-juniper woodlands.	Yes	No	No
Piping plover (*Charadrius melodus*)	LT	SOC	SCP: Level II	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 (*Falco mexicanus*)	NA	NA	SCP: Level II	BCC	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	NA	No

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Red-headed woodpecker (*Melanerpes erythrocephalus*)	NA	SOC	SCP: Level I	BLM SSS; BCC	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 (*Calidris canutus rufa*)	LT	NA	SCP: Level III	BLM SSS	Stopover habitat along saline lakes, alkaline lakes, wetlands, riverine sandbars, and impoundments.	Yes	No	No
Sage thrasher (*Oreoscoptes montanus*)	NA	SOC	NA	BLM SSS; BCC	Summer resident in Montana. Breeds in areas with a high density of big sagebrush.	Yes	No	NA
Sharp-tailed grouse (*Tympanuchus phasianellus*)	NA	SOC	SCP: Level II	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

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Short-eared owl (*Asio flammeus*)	NA	NA	SCP: Level II	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	NA	Yes
Sprague's pipit (*Anthus spragueii*)	NA	SOC	SCP: Level I	BLM SSS; RFSS; BCC	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
Swainson's hawk (*Buteo swainsonii*)	NA	NA	SCP: Level I	NA	Summer resident in North Dakota. Nests in isolated trees in otherwise open grasslands, where it can forage for small mammals and insects.	Yes	NA	Yes
Thick-billed longspur (*Rynchophanes mccownii*)	NA	SOC	NA	BCC	Summer resident in Montana; summer and migratory resident in western North Dakota. Nests in open shortgrass with sparse vegetation. Also uses pastures.	Yes	No	NA

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Upland sandpiper (*Bartramia longicauda*)	NA	NA	SCP: Level II	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	NA	Yes
Veery (*Catharus fuscescens*)	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	NA
Western grebe (*Aechmophorus occidentalis*)	NA	NA	NA	BCC	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	NA	NA
Western meadowlark (*Sturnella neglecta*)	NA	NA	SCP: Level II	NA	Summer resident in North Dakota. Nests in native and nonnative grasslands with an intermediate amount of grass and cover.	Yes	NA	Yes

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Willet (*Tringa semipalmata*)	NA	NA	SCP: Level II	BCC	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	NA	No
Whooping crane (*Grus americana*)	LE	SOC	SCP: Level III	BLM SSS	Stopover habitat in or near wetlands and croplands.	Yes	No	No
Wilson's phalarope (*Phalaropus tricolor*)	NA	NA	SCP: Level I	NA	Summer resident in North Dakota. Nests in upland grasslands near water. Forages in wetlands.	Yes	NA	Yes
Reptiles								
Plains hognose snake (*Heterodon nasicus*)	NA	SOC	SCP: Level I	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

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Sagebrush lizard (*Sceloporus graciosus*)	NA	NA	SCP: Level III	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 (*Phrynosoma herdandesi*)	NA	SOC	SCP: Level II	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 (*Opheodrys vernalis*)	NA	SOC	SCP: Level I	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 (*Chelydra serpentina*)	NA	SOC	SCP: Level II	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 (*Apalone spinier*)	NA	SOC	SCP: Level III	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 (*Lampropeltis gentilis*)	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	NA
Amphibians								
Great plains toad (*Anaxyrus cognatus*)	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	NA
Plains spadefoot (*Speak bombifrons*)	NA	NA	SCP: Level I	NA	Dry, open grasslands with sandy or loose soil. Breeding habitat includes temporary wetlands without heavy vegetation.	Yes	NA	No

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Insects								
Wallace's deepwater mayfly (*Raptoheptagenia cruentata*)	NA	SOC	NA	BLM SSS	Prefers large, perennial prairie streams and rivers with sand-dominated bottoms and cobble riffles.	Yes	No	NA
Rustic flat-headed mayfly (*Anepeorus rusticus*)	NA	SOC	NA	NA	Large, perennial prairie rivers with sand-dominated bottoms and cobble riffles.	Yes	No	NA
A sand-dwelling mayfly (*Homoeoneuria alleni*)	NA	SOC	NA	NA	Sandy/silted depositional areas of large, perennial prairie rivers with sandy, gravelly bottoms.	Yes	No	NA
American bumble bee (*Bombus pensylvanicus*)	UR	NA	NA	NA	Foraging and reproductive habitat in open habitat such as farmlands, fields, tall grasslands, and prairie with flowering plants.	Yes	No	No
Arogos skipper (*Aytrytone arogos*)	NA	SOC	NA	NA	Native tall and mixed-grass prairie, grassy meadows, and serpentine barrens; larval food plants are grasses, particularly bluestem species (*Andropogon* spp.).	Yes	No	NA

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Dakota skipper (*Hesperia dacotae*)	LT	NA	SCP: Level II	BLM SSS	Foraging and reproductive habitat in native tracts of tall and mixed-grass prairie; bluestem grasses (*Andropogon* spp.) and purple coneflower (*Echinacea pallida*) often indicative of suitable habitat.	Yes	No	Yes
Gray comma (*Polygonia prone*)	NA	SOC	NA	NA	Deciduous woodlands, riparian woodlands, forest openings; larval food plants include currant (*Ribes* spp.), birch (*Betula* spp.), Rhododendron (*Rhododendron* spp.), and rarely elm (*Ulmus* spp.) species.	Yes	No	NA
Ottoe skipper (*Hesperia ottoe*)	NA	SOC	NA	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

Species	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Monarch butterfly (*Danaus plexippus*)	PT	SOC	SCP: Level I	BLM SSS	Foraging and reproductive habitat in open habitat with flowering plants and milkweed (*Asclepias* spp.) (larval host plant).	Yes	No	Yes
Western regal fritillary (*Argynnis idalia occidentalis*)	PT	NA	SCP: Level I	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
Suckley's cuckoo bumble bee (*Bombus Suckley*)	PE	SOC	NA	NA	Foraging and reproductive habitat in the same habitat as its preferred host species: the western bumble bee (*Bombus occidentalis*; see below).	Yes	No	No
Tawny crescent (*Phyciodes batessi*)	NA	NA	NA	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	NA	No
Variable cuckoo bumble bee (*Bombus variabilis*)	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	Federal Status	Montana Status	North Dakota Status	Other Special Status	Habitat Description	Potential Habitat in the Project Impact Area	Documented to Occur During the Project Wildlife Surveys: Montana [a, b]	Documented to Occur During the Project Wildlife Surveys: North Dakota [a, b]
Western bumble bee (*Bombus occidentalis*)	UR	NA	NA	NA	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

Source: Grid United 2024b

BCC = Birds of Conservation Concern; BLM = Bureau of Land Management; LE = Listed Endangered; LT = Listed Threatened; NA = not applicable; RFSS = Regional Forester Sensitive Species; ROW = right-of-way; PE = Proposed Endangered; PT = Proposed Threatened; SCP = Species of Conservation Priority; SOC = Species of Concern; SSS = Special Status Species; UR = Under Review
Notes:
[a] 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 Project impact areas.
[b] This includes the Project ROW.