Toronto Power Plant Project

Facility Permit Application

Submitted to the South Dakota Public Utilities Commission

Western Minnesota Municipal Power Agency &
Missouri River Energy Services

August 2025

TORONTO POWER PLANT

Western Minnesota Municipal Power Agency

MISSOURI RIVER® ENERGY SERVICES

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Abbreviations and Acronyms

APLIC	Avian Power Line Interaction Committee
ARSD	South Dakota Administrative Rules
BCF	Billions of Cubic Feet
BMP	Best Management Practices
CO	Carbon Monoxide
Commission	South Dakota Public Utilities Commission
CT	Combustion Turbine
CUP	Conditional Use Permit
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Fields
ESA	Endangered Species Act
FAA	Federal Aviation Administration
Gensets	Combustion-Engine Generator Sets
GSU	generator step-up
GPS	Global Positioning System
HAP	Hazardous Air Pollutant
in/hr	Inches per hour
IPaC	Information for Planning and Consultation
IRP	Integrated Resource Plan
JD	Jurisdictional Determination
kV	Kilovolt
kV/m	Kilovolt per Meter
LHV	lower heating value
mG	milliGauss
MISO	Midcontinent Independent System Operator
MRES	Missouri River Energy Services
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NBP	Northern Border Pipeline
NERC	North American Electric Reliability Corporation
NESC	National Electric Safety Code
NHD	National Hydrology Dataset
NLCD	National Land Cover Database
NLEB	Northern Long-eared Bat
NO_x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
OHGW	Overhead Ground Wire
OPGW	Optical Ground Wire
OTP	Otter Tail Power

PUC	Public Utilities Commission
RICE	Reciprocating Internal Combustion Engine
ROW	Right of Way
SDCL	South Dakota Codified Laws
SDDANR	South Dakota Department of Agriculture and Natural Resources
SDDOT	South Dakota Department of Transportation
SDGFP	South Dakota Game, Fish, and Parks
SDGS	South Dakota Geological Survey
SDSHPO	South Dakota State Historic Preservation Office
SGCN	Species of Greatest Conservation Need
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPP	Southwest Power Pool
SSURGO	Soil Survey Geographic Database
SWPPP	Storm Water Pollution Prevention Plan
TP	Twisted Pair
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WEG	Wind Erodibility Group
WMMPA	Western Minnesota Municipal Power Agency
WPA	Waterfowl Production Area

1.0 Introduction

Western Minnesota Municipal Power Agency (WMMPA) and Missouri Basin Municipal Power Agency d/b/a Missouri River Energy Services (MRES) (Applicants) submit this application for a Facility Permit (Application) to the South Dakota Public Utilities Commission (Commission) for the construction and operation of an energy conversion facility and associated facilities (the Project).

WMMPA will own and finance the construction of the Project. WMMPA, headquartered in Ortonville, Minnesota, is a municipal corporation and political subdivision of the State of Minnesota. WMMPA owns generation and transmission facilities, the capacity and output of which are sold to MRES. MRES is a not-for-profit, joint-action agency organized under Iowa law and authorized to exercise the statutory powers of its South Dakota member municipalities under South Dakota Codified Laws (SDCL) Ch. 1–24. MRES is headquartered in Sioux Falls, South Dakota. MRES provides electricity and other energy-related services to its 61-member municipal utilities in Iowa, Minnesota, North Dakota, and South Dakota, who in turn serve approximately 175,000 customers. The members within South Dakota include Beresford, Big Stone City, Brookings, Burke, Faith, Flandreau, Fort Pierre, Pickstown, Pierre, Vermillion, Watertown, and Winner. MRES is also a transmission-owning member of two regional transmission organizations: Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP). MRES performs all required administrative services on behalf of WMMPA under an administrative services agreement and will manage and operate the Project.

In 2024, MRES supplied approximately 58 percent of its members' total energy needs. The remaining power is hydropower provided by Western Area Power Administration. MRES members' energy resources are shown in Table 1. WMMPA and three other partners own the Missouri Basin Power Project, which includes the Laramie River Station and the 104,000-acre-foot Grayrocks Reservation and Grayrocks Dam. WMMPA also owns the Watertown Power Plant, Exira Station, the Worthington and Marshall wind projects, the Pierre Solar and Marshall Solar Plus solar projects, and the Red Rock Hydroelectric Project.

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Table 1. Summary of MRES Members' Energy Sources

Generations Facilities	Power Generation (MW)
Western Area Power Administration's Hydroelectric Facilities	348
Laramie River Station – Coal-fired	280
Exira Station – Natural gas/fuel oil	140
Watertown Power Plant – Fuel oil	45
Point Beach Nuclear Plant	33.8
Rugby Wind Project	40.0
Worthington Wind Project	3.7
Marshall Wind Project	18.7
Odin Wind Project	20.0
Pierre Solar Project	1.0
Marshall Solar Plus	15.0
Red Rock Hydroelectric Project	43.1
Behind-the-Meter Municipal Generation	156.7
Total	1,145.0

An additional energy conversion facility is required to meet the energy and capacity needs for MRES members. WMMPA, through its agent MRES, filed a Notice of Intent (NOI) with the Commission on June 13, 2024, for an energy conversion facility permit pursuant to SDCL § 49-41B-5 and South Dakota Administrative Rules (ARSD) 20:10:22:02 for a power plant in the SE ¼ of Section 7, Township 113N, Range 48W in Toronto Township, Deuel County. The NOI was docketed as EL24-021.

On June 20, 2024, the Commission electronically transmitted notice of the filing and the intervention deadline of July 8, 2024, to interested persons and entities on the Commission's Public Utilities Commission (PUC) Weekly Filings electronic listserv. No petitions to intervene were filed in Docket EL24-021. On July 2, 2024, James Moore filed a Notice of Appearance on behalf of WMMPA. On July 9, 2024, the Commission issued an Amended Order Designating Affected Area and Designating Local Review Committee. On May 28, 2025, MRES filed a letter notifying the Commission of a change in generation technologies associated with the Project. There has been no other activity for EL24-021.

The Applicants submit this Application to the Commission pursuant to SDCL Ch. 49-41B and ARSD Ch. 20:10:22. In this Application, the Applicants have addressed each matter set forth in SDCL Ch. 49-41B and in ARSD Ch. 20:10:22 related to energy conversion and transmission facilities. Included with this Application is a Completeness Checklist that sets forth where in the Application each rule requirement is addressed (Appendix H).

1.1 Toronto Power Plant Project

The Project will be located entirely within Deuel County, South Dakota (Figure 1).

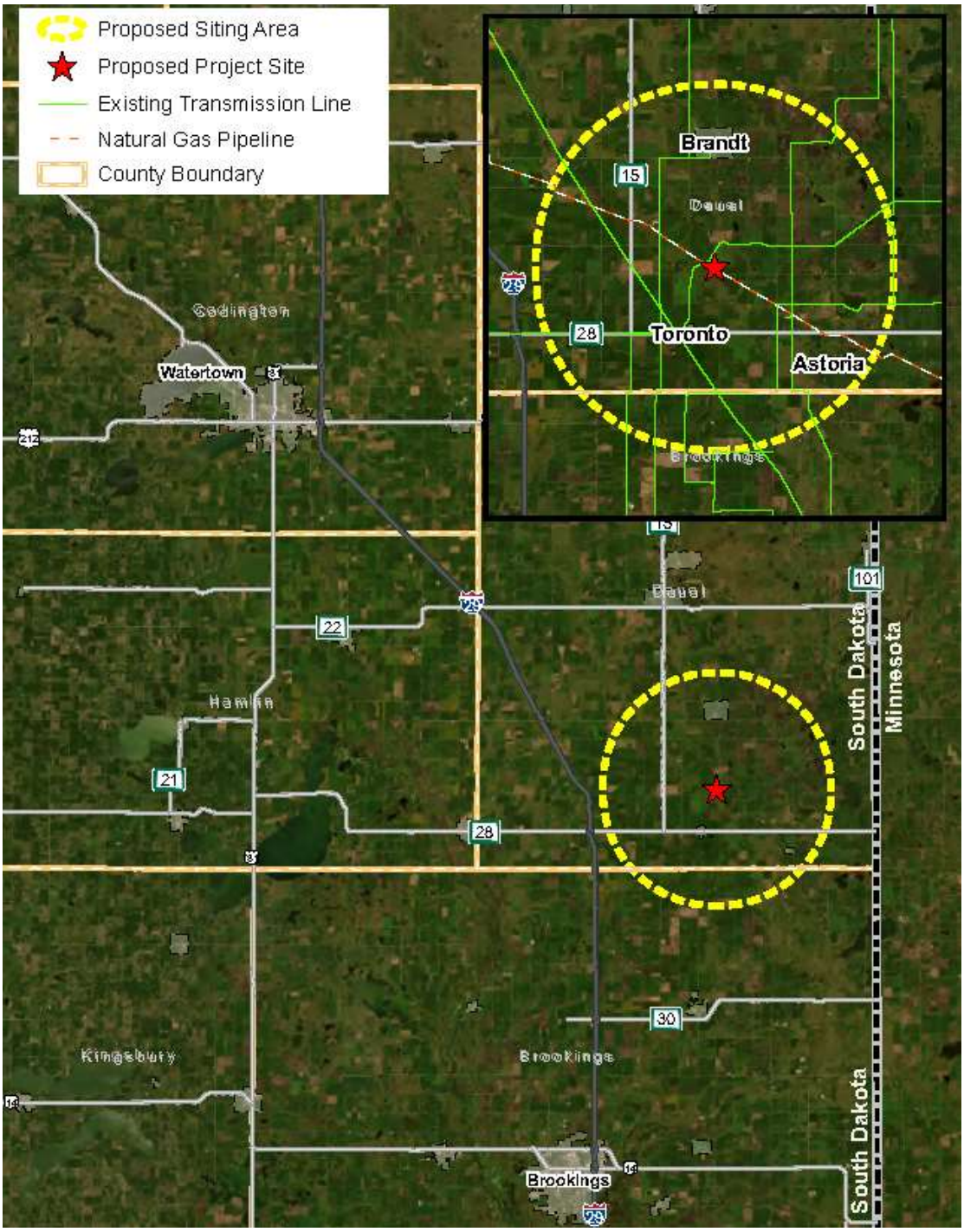

Figure 1. Proposed Siting Area and Project Site

The Power Plant will be dual fuel, primarily using natural gas with a fuel oil backup. Natural gas will be on-site through a connection to the Northern Border Pipeline (NBP) that crosses the property. Fuel oil will be trucked from Watertown, SD (Figure 1). Project components are expected to include:

- Construction and operation of an energy conversion facility to generate approximately 145 megawatts (MW) consisting of four (4) combustion turbine-generator sets (gensets) contained in a turbine hall building, natural gas pipeline, diesel fuel truck unloading facilities, and other facilities (collectively referred to as the Toronto Power Plant or Power Plant) (Graphic 1, Graphic 2, and Figure 2).

    - The turbine hall building and office facilities (approximately 106 feet wide by 280 feet long by 38 feet high) will be metal construction around the gensets and cinder block or precast concrete walls for the office facilities. The metal building around the gensets will be insulated to minimize noise.

    - A dedicated structure housing a water chilling system and external cooling towers or radiators will provide cooling for the genset equipment.

    - Approximately 4.3 acres of the Project site will contain a 345-kilovolt (kV) switchyard for the generation transmission lead line.

    - There will be two 324,000-gallon fuel oil tanks complete with spill prevention berms and one 200,000-gallon fire water tank.

    - Natural gas piping to connect to the NBP, anticipated to be less than 450 feet of new piping, will be located along the southwest side of the proposed Power Plant Site.

    - Construction will include grading of the site, drilling water wells, installation of several underground piping and electrical systems, erection of the turbine hall building and other office facilities, paving of access and parking, and landscaping.

- Installation of an approximately 4.9-mile-long, single-circuit, 345-kV generation-tie transmission line (transmission line) to connect with the Astoria 345-kV substation owned by Otter Tail Power (OTP) Company (OTP Substation). The Project will require a minor expansion of the substation, which is within the footprint of the substation's designated area. The transmission line will be constructed on 130- to 175-foot-tall monopole structures placed 400 to 1,300 feet apart (approximately 4 to 5 structures per mile). The proposed foundations for the monopole structures will be approximately 8 to 15 feet in diameter and approximately 20 to 40 feet deep. Foundation value estimations are determined based on loading, steel manufacturing, and geotechnical properties.

- Installation of the transmission line will require temporary laydown/staging area(s), pulling/tensioning sites, and access roads. The temporary laydown/staging area(s) for construction will be located on the Power Plant Site (as defined in Section 6) and the pulling/tensioning sites are approximately 100 by 300 feet each. Access will be provided by a 10-foot-wide path along the proposed transmission line within the proposed easement.

Graphic 1. Rendering of the Power Plant, Facing Northeast

Graphic 2. Rendering of the Power Plant, Facing Northwest

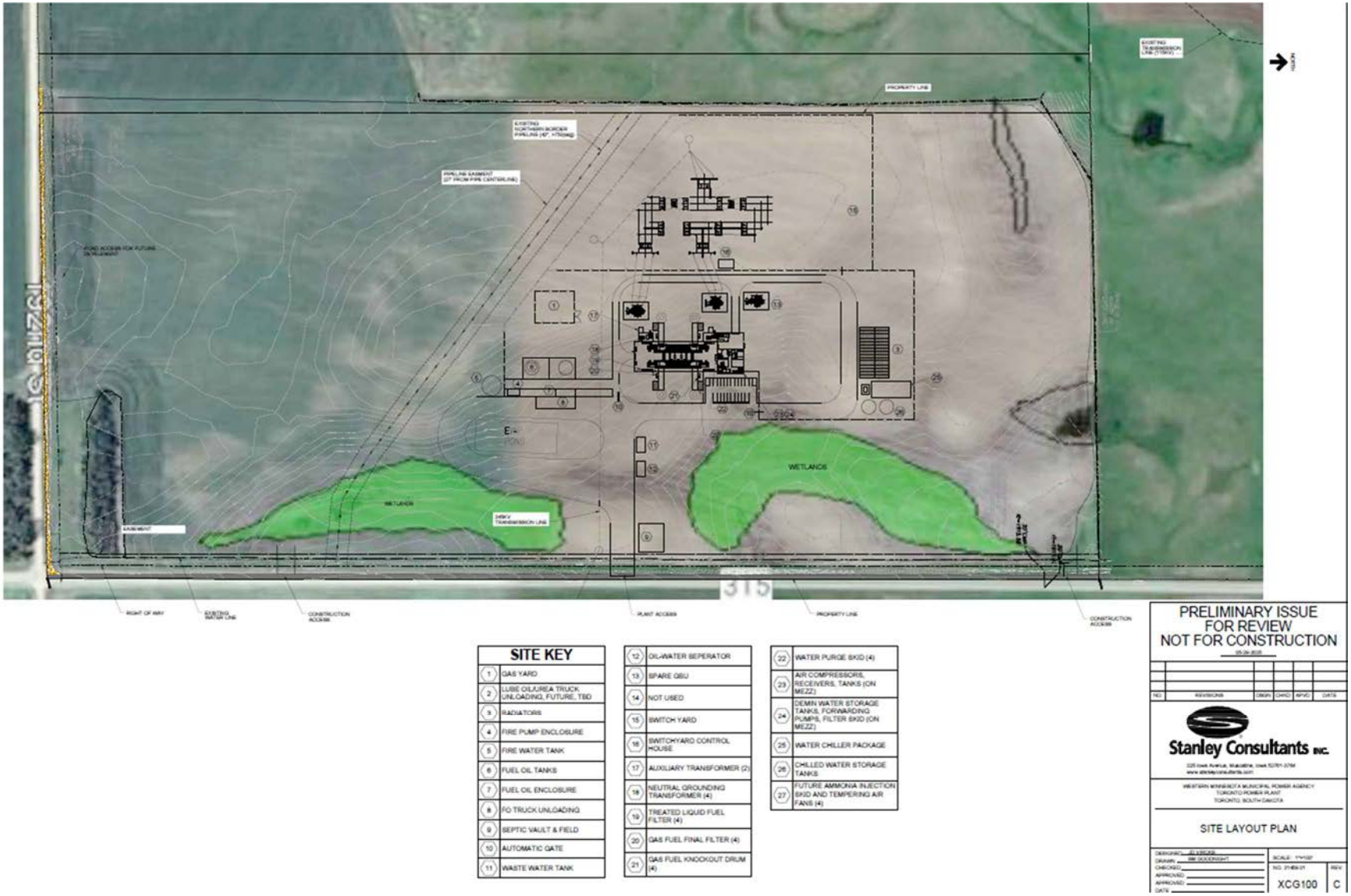

Figure 2. Preliminary Design Layout of the Power Plant Site

1.1.1 Project Design

The Project's design avoids or minimizes impacts on landowners, existing transmission lines, and environmental resources. The following design criteria were and will be used to the extent practicable:

- Minimize the Power Plant Site and transmission line proximity to existing residences and structures.
- Locate transmission structures between or on the edge of tilled lands to minimize impacts on farming.
- Place structures in previously disturbed areas to avoid potential habitats associated with protected wildlife and plant species.
- Use previously disturbed lands, including existing road rights of way (ROW), where practical, to minimize wildlife habitat fragmentation.
- Place structures outside of the U.S. Fish and Wildlife Services (USFWS) Quail Waterfowl Production Area (WPA) to minimize any impacts on waterfowl and grassland associated birds.
- Avoid or minimize disturbance to wetlands during Project construction; where impacts are unavoidable, comply with applicable requirements of the U.S. Army Corps of Engineers (USACE) Nationwide Permitting Program and South Dakota Department of Agriculture and Natural Resources (SDDANR) wetland program.
- Avoid disturbance to potentially undisturbed grasslands in the vicinity of the Project during construction.
- Avoid placing structures within or adjacent to surface water features and minimize potential impacts on floodplains in accordance with Deuel County floodplain development permitting requirements.
- Consult with appropriate resource agencies to avoid or minimize potential impacts on sensitive species within the Project vicinity.

1.1.2 Land Acquisition

1.1.2.1 Power Plant Site

The Power Plant Site is currently under an option to purchase real estate agreement between WMMPA and the landowner. WMMPA has until December 31, 2027, to exercise the option and expects to complete the purchase when this permitting process is completed and before the start of construction.

1.1.2.2 Transmission Line

A 150-foot-wide ROW easement will be needed for the Project's 345-kV transmission line (Route) as it crosses private property and will require coordination with entities and agencies where the ROW crosses or shares ROW with other public utilities or public roads. The Route crosses 13 parcels with a total of 11 landowners. The Applicants contacted landowners beginning in

June 2024. During this coordination, three landowners signed right-of-entry approval to complete surveys. Coordination with landowners has been reinitiated in June 2025 to discuss an option agreement for easements. Three landowners have signed option agreements for easements. The Applicants will coordinate with landowners throughout Project development, construction, and operation.

2.0 Names of Participants (ARSD 20:10:22:06) and Names of Owner and Manager (ARSD 20:10:22:07)

WMMPA will own the Project. MRES will manage and operate the Project. The Applicants' full names, business addresses, and business telephone numbers are shown below:

Western Minnesota Municipal Power Agency

129 2nd Street NW
Ortonville, MN 56278
(320) 839-2549

Missouri River Energy Services

3724 West Avera Drive
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The individuals authorized to receive communications relating to this Application on behalf of WMMPA and MRES are shown below:

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3.0 Purpose of Facility (ARSD 20:10:22:08)

Adding more natural gas generation to the Applicants' energy mix is consistent with the prudent execution of the short- and long-term action plans identified in MRES's Integrated Resource Plan (IRP), furthering MRES's ability to provide reliable, resilient, cost-effective, and long-term energy service to its members and their electric consumers. As the region's energy generation mix evolves and more renewable energy sources like wind and solar energy are utilized, the Project will provide MRES with another dispatchable generation resource with a fast power ramp-up to maintain local grid reliability when wind and solar generation is low, as well as during major

weather events. The addition of 145 MW of natural gas generation to its existing energy resources will enable MRES to expand its generation portfolio in a fiscally responsible and environmentally sensitive manner to continue to serve its members long into the future.

4.0 Estimated Cost of Facility (ARSD 20:10:22:09)

The current estimated cost of construction for the Project is $378 million. This includes: (1) construction of the dual fuel Power Plant and (2) costs associated with the construction of the Project's approximately 4.9-mile-long, 345-kV transmission line between the Power Plant Site and OTP Substation. Estimated costs are based on the proposed Route and preliminary engineering and are subject to change based on the final Project design and marketplace escalation before contracts are executed.

The cost estimates for the Project are based on the Applicants' experience and the actual costs incurred for constructing prior similar projects. The Applicants then updated this data based on market conditions and included a risk reserve for unknown variables, such as unfavorable weather conditions, additional environmental or cultural mitigation measures, and material/contractor pricing.

5.0 Demand for Facility (ARSD 20:10:22:10)

While the energy grid is interconnected, demand continues to increase, requiring the Applicants to explore and evaluate additional energy generation sources. Graph 1 and Graph visually summarize MRES's demand compared to supply resources in MISO during the summer and winter seasons. The graphs show the forecasted MRES demand, including demand side management, electrification, losses, and capacity reserve requirements. These total obligations (labeled as Requirements) are compared to the total existing rated capacity that applies toward meeting those obligations. As these graphs show, using current resources and transactions only, MRES is facing a significant deficit in capacity in MISO. MRES's capacity in SPP cannot be used to meet MRES's capacity requirements in MISO because MRES does not have a firm transmission service to deliver the surplus SPP capacity to MISO.

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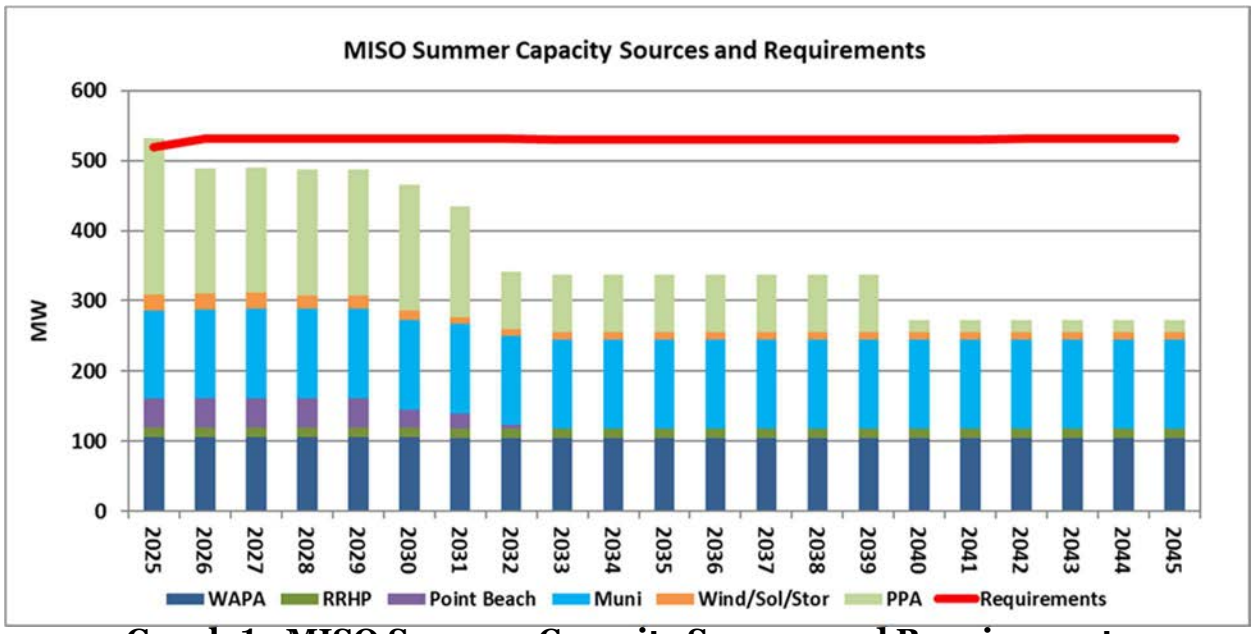
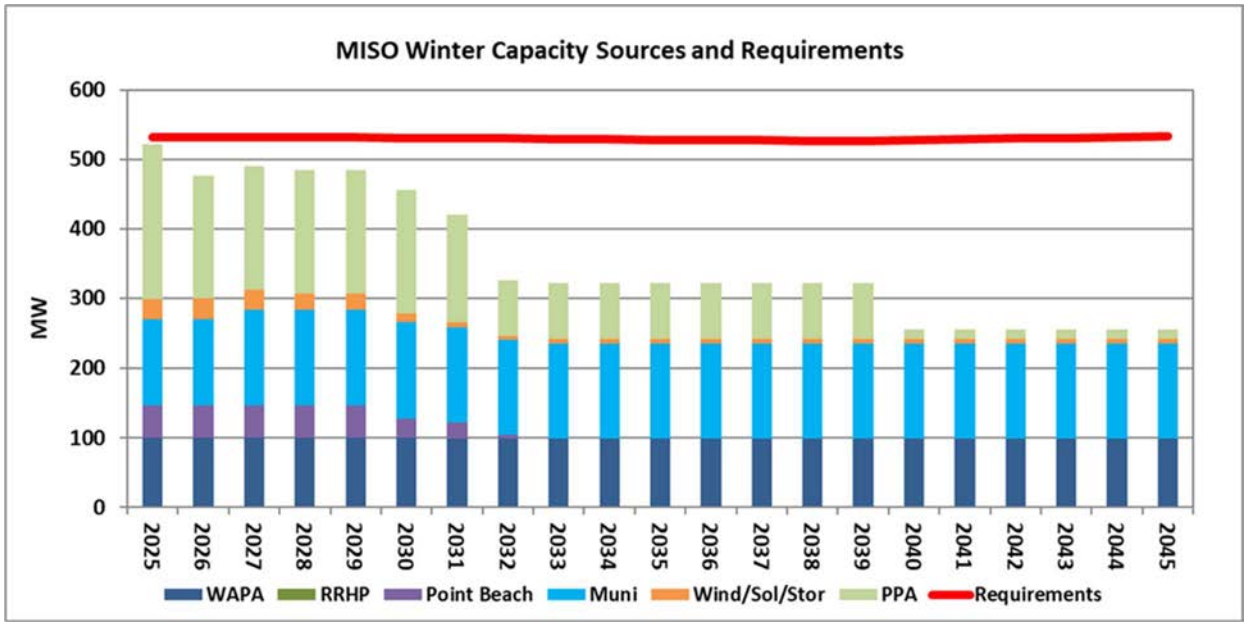


Graph 1. MISO Summer Capacity Sources and Requirements



Graph 2. MISO Winter Capacity Sources and Requirements

MRES's most recent IRP identified that natural gas generation would be an economical option in meeting its long-term regional resource needs. Natural gas units provide another tool in providing low-cost, dispatchable, reliable power for the Applicants' members and their electricity consumers. Natural gas also provides a bridge in the gap between more traditional energy sources, such as coal, and more non-emitting, renewable energy sources, such as solar and wind energy. Locally, the construction of the Project will enhance the reliability of power to surrounding utilities and municipalities, including the nearby MRES member communities of Brookings and Watertown, South Dakota, and Marshall, Minnesota, as well as other non-MRES communities.

5.1.1 Consequence of Delay

If the Project were delayed, the Applicants would have to seek other options to address the capacity need. The MISO interconnection process is currently the cause of the greatest uncertainty for cost and schedule. If the Project's existing queue position were lost due to delay or termination of the Project, it would be difficult to predict the schedule and cost of a different project at a different time. In particular, the costs associated with potential transmission system upgrades could be higher to interconnect a project at a later date.

MRES will likely have to procure capacity purchases in the MISO market if the Project were delayed, exposing MRES to potentially higher market energy prices. MRES's ability to procure favorable bilateral wholesale energy transactions in lieu of capacity purchases from the MISO market is uncertain. Additionally, a delay will likely add to the cost of the new project, because the cost of the major equipment and construction components could change significantly over time.

6.0 General Site Description (ARSD 20:10:22:11)

6.1 Power Plant Site

The Project is located within Deuel County, South Dakota. The Applicants propose to locate the Power Plant in the SE ¼ of Section 7, Township 113N, Range 48W, approximately 2 miles north of Toronto, South Dakota (Power Plant Site). The property is immediately northwest of the intersection of County Road 315 (479th Avenue) and 192nd Street. This location consists of tilled land with a shelter belt on the southeast corner. The closest residence is approximately 0.12 miles from the proposed plant. The Power Plant Site is approximately 71 acres. The location is convenient with a paved roadway adjacent to the property, existing fuel-oil terminals in Watertown, and its proximity to the OTP Substation and the NBP. The nearest residence is approximately 1,500 feet to the south. Refer to Figure 3.

The turbine hall building, diesel fuel truck unloading facilities, and other facilities will be located north of the natural gas pipeline that runs diagonally through the center of the Power Plant Site. An access road will be constructed and is shown on Graphic and Graphic . Construction is anticipated to be approximately 2 years long.

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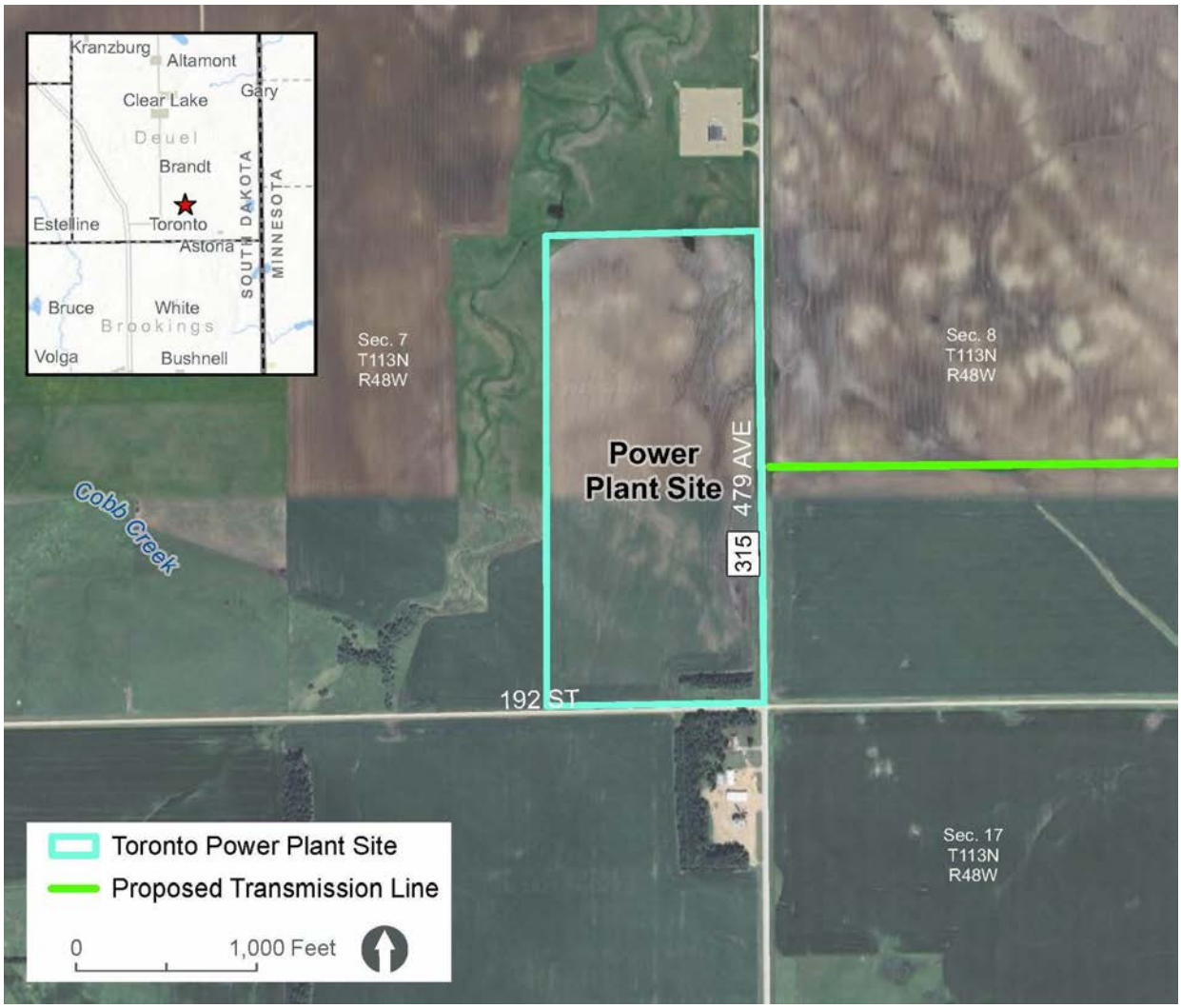

Figure 3. Power Plant Site

Graphic 3. Rendering of the Power Plant- Facing Northwest

Graphic 4. Rendering of the Power Plant- Facing Southwest

6.2 Transmission Line

The transmission line component of the Project is for the proposed alignment that will connect the Power Plant Site to the OTP Substation. A Route Siting Study was completed to identify the preferred Route to incorporate into this application. A Transmission Line Study Area, depicted in Figure 4, was identified and included a larger area so that a range of Route alignments could be considered. The Transmission Line Study Area is located within Sections 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21 and 22, Township 113N, Range 48W.

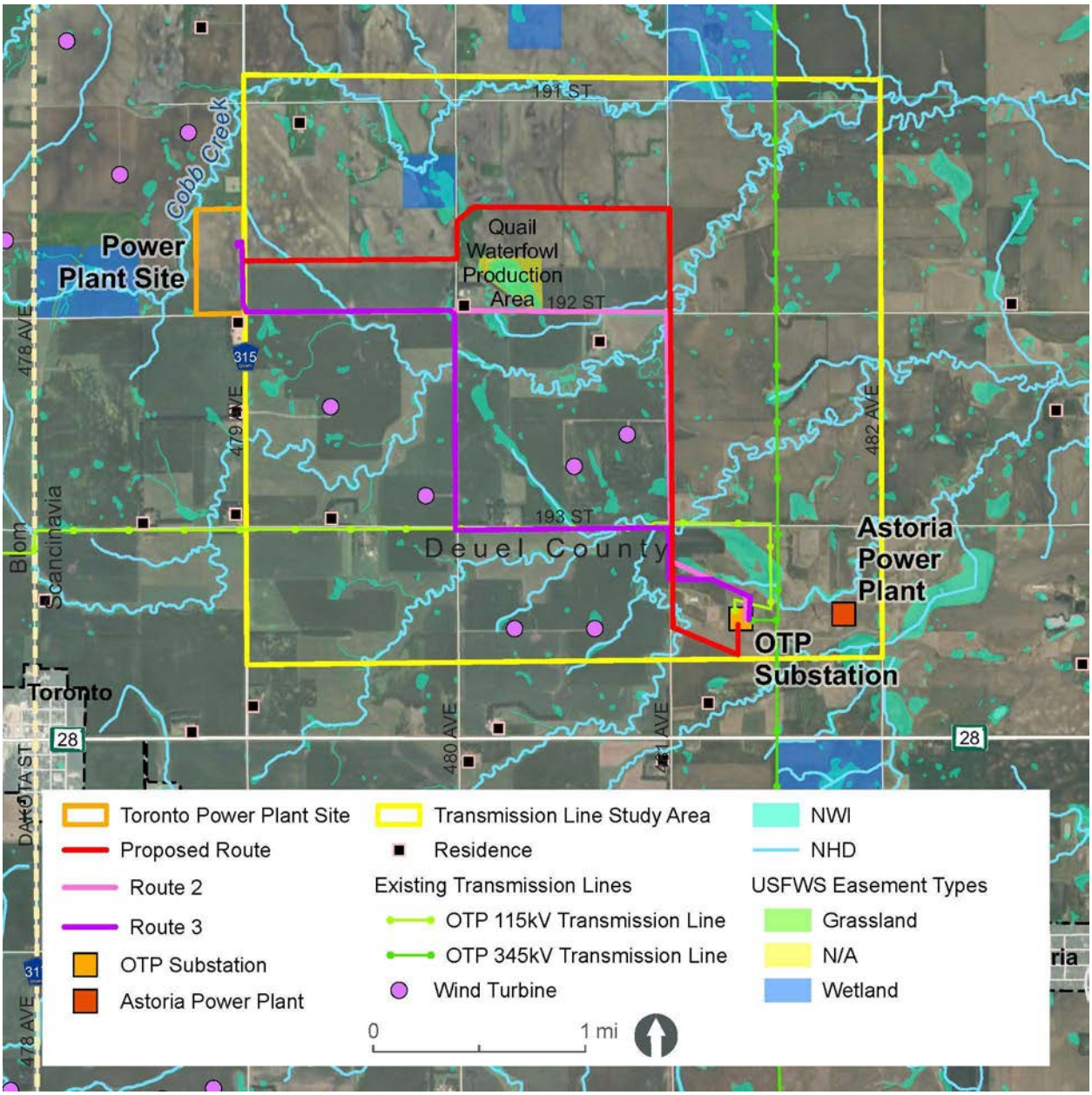

Figure 4. Alignments Considered within the Transmission Line Study Area

Through the Route siting process, the Applicants identified a primary Route for the Project's 345--kV transmission line (referred to as Route from this point forward) and are in the process of trying to secure voluntary easements for an approximately 150-foot-wide ROW from 15 landowners, excluding public road ROW. Refer to Figure 5 for the Route selected. Modification to the Route may occur following the filing of this Application as a result of final engineering, permitting, or land access rights. Potential modifications to the Route as a result of final engineering, permitting, or land access rights include minor adjustments in the route alignment or structure locations due to:

- Landowner preferences and coordination;
- Agencies with jurisdictional requirements or preferences; or

- Final geotechnical borings used in the design of the Project.

No additional modifications will be needed to the Route after all required federal, state and local permits are obtained, land rights are secured, and final engineering is complete. The Applicants propose that any adjustment to the Project ROW and/or structure locations be subject to certain conditions, as discussed below.

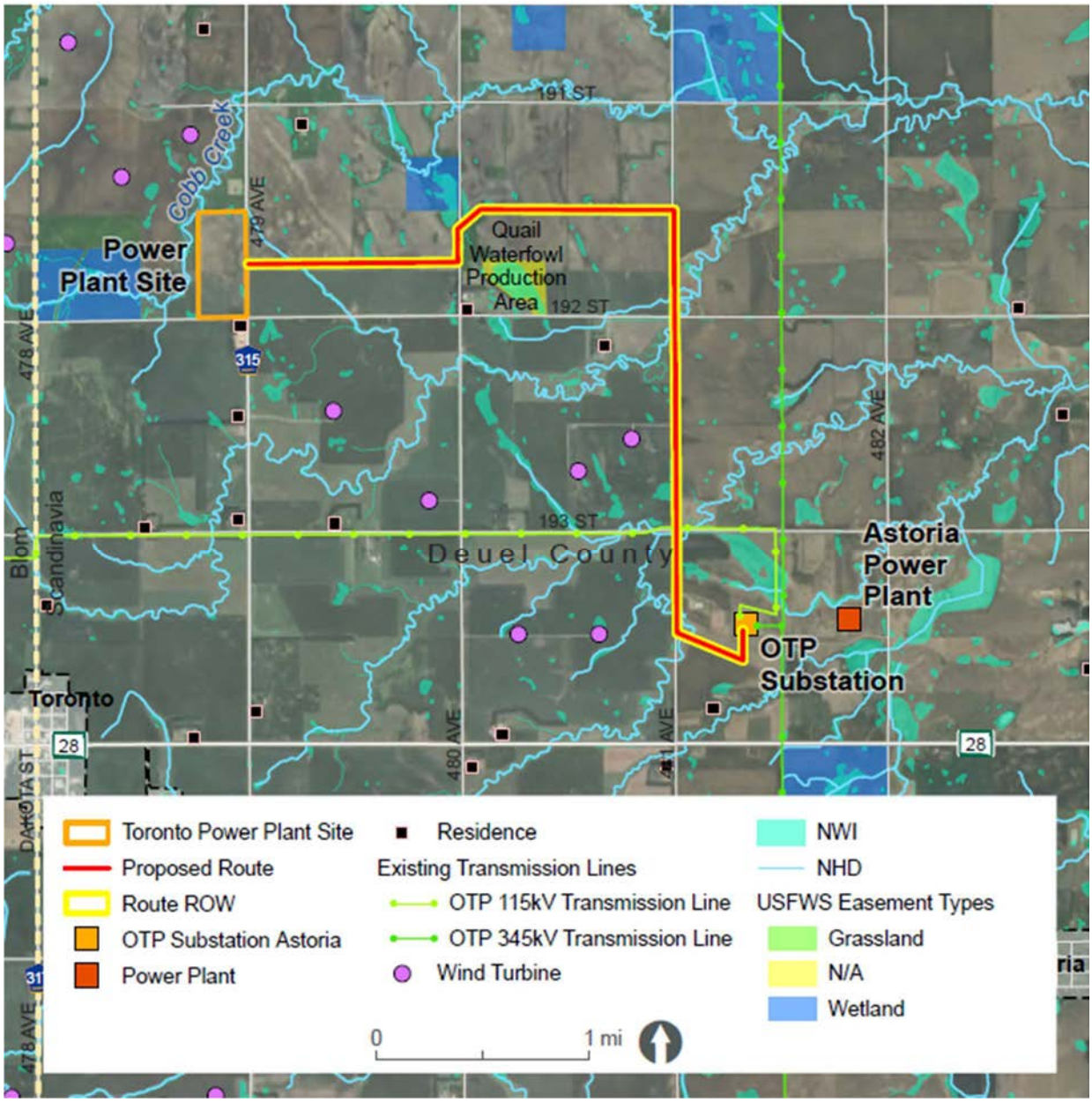

Figure 5. Route Selected

The Applicants propose the following conditions for the Route:

- Applicants may adjust the structure locations within the 150-foot-wide ROW as long as:

- Impacts to cultural resources are avoided or mitigated in consultation with the South Dakota State Historic Preservation Office (SDSHPO);

- Wetland impacts are avoided or are in compliance with applicable USACE and SDDANR regulations;

- Impacts on potentially undisturbed grasslands will be avoided to the extent possible; and

- All other applicable regulations and requirements are met.

- Any adjustment that falls outside of the 150-foot-wide ROW or that does not meet the above stated limitations is considered a "material change." If a "material change" is proposed, Applicants must file a request for approval of the "material change" prior to making the adjustment pursuant to the following approval process:

    - Applicants must file with the Commission and serve on the official Service List a request for approval of a material change that includes:

        - An affidavit describing the proposed adjustment(s), the reason for the adjustment(s), the reason the adjustment(s) do(es) not comply with one or more flexibility limitations set forth above, and information regarding compliance with all other applicable requirements;

        - Documentation showing the impacted landowner was informed of the material change and indication whether landowner approves of the material change or contests the material change; and

        - A map showing the approved location of the 150-foot-wide ROW and structure locations and the proposed adjusted locations (in different colors).

    - Once received, Commission Staff and the Commission shall have 10 business days to request further Commission review.

    - If no further review is requested, Applicants may proceed with the adjustment.

    - If further review is requested, the Commission will issue a decision regarding Applicants' request at its next available regularly scheduled Commission meeting, subject to notice requirements, after the request for further review is made.

7.0 Alternative Sites and Siting Criteria (ARSD 20:10:22:12)

The following sections discuss the siting of the Power Plant Site and the range of alignments for the transmission line interconnection from the Power Plant Site and the OTP Substation (Figure 4). The Applicants developed a Transmission Line Study Area where reasonable Route alignments could connect the Power Plant Site with the interconnection substation. GIS data from local, state, and federal agencies were identified and collected within the Transmission Line Study Area. This data included existing structures, land cover, wetlands, utility infrastructure, parcels, sensitive habitat, public lands, and other data sets. Refer to Figure 6 for the potential Route alignments.

7.1 General Criteria Used to Measure and Weigh Alternatives

The Applicants considered the following criteria needed for the Power Plant Site location:

- Access to a major natural gas pipeline.
- In proximity to an existing substation to connect into the regional energy market.
- In proximity to a fuel oil terminal.
- Paved road access to aid in winter transport of fuel oil.
- Avoidance and minimization of impacts on environmental resources (e.g., waterbodies, wetlands, WPAs, USFWS easements, potentially undisturbed grasslands, public lands).
- Minimize the proximity to existing residences and structures.

The Applicants considered the following criteria needed for the Route location:

- Minimize the proximity to existing residences and structures.
- Avoidance and minimization of impacts on environmental resources (e.g., waterbodies, wetlands, WPAs, USFWS easements, potentially undisturbed grasslands, public lands).
- Minimize the impact upon croplands.
- Minimize the Route length.

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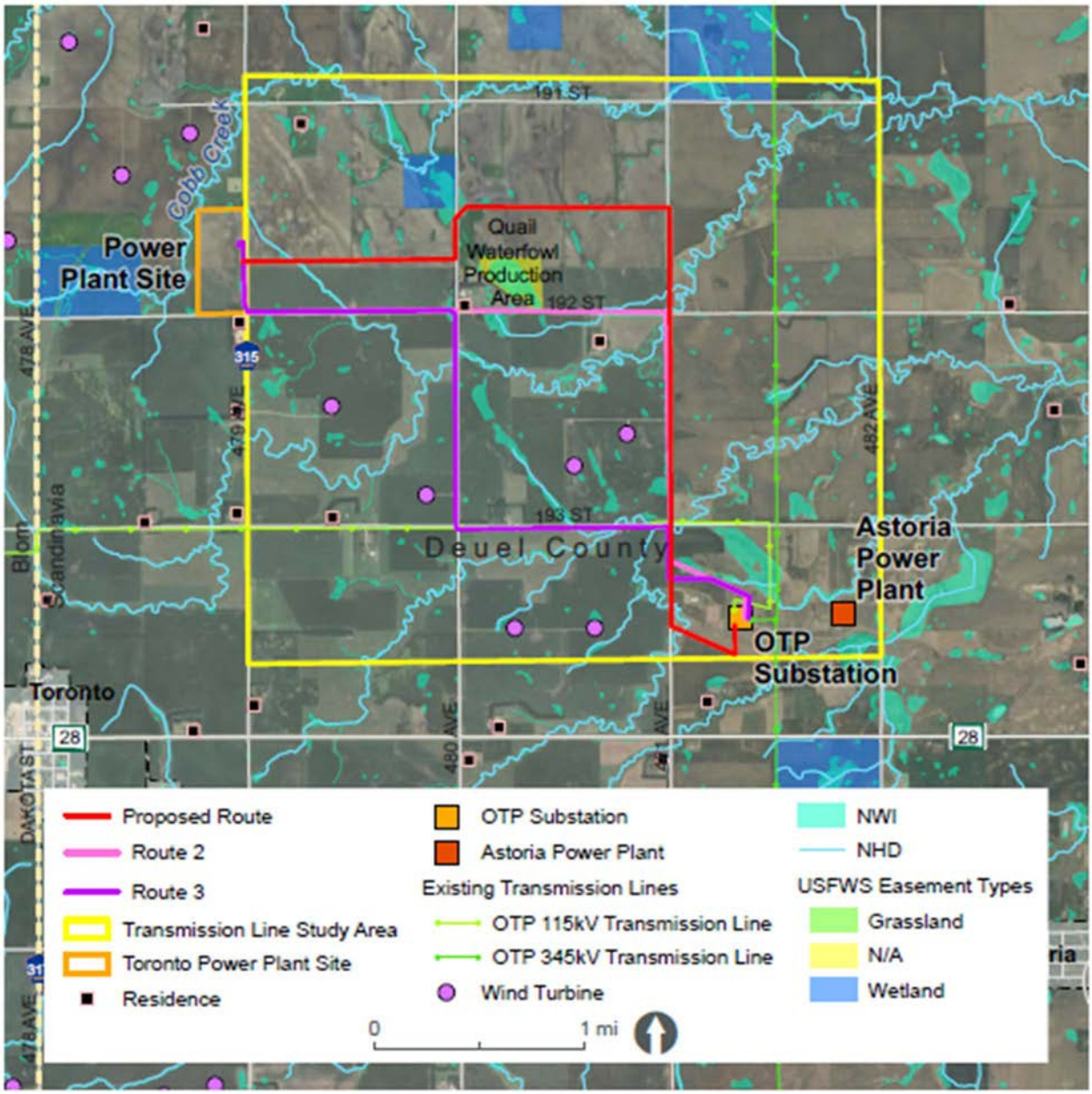

Figure 6. Transmission Line Study Area and Routes Considered

7.2 Evaluation of Alternative Sites and Proposed Sites

The following sections discuss the Power Plant Site and Route selection process, including the alternatives considered, and summarize the siting and routing criteria applied.

7.2.1 Power Plant Site

General locations were evaluated in South Dakota, North Dakota, and Iowa; however, only the Power Plant Site meets the following criteria:

- The Power Plant Site is crossed diagonally by a major natural gas pipeline. The Power Plant will tie into the gas pipeline with a minimal length connection since the plant will be built directly adjacent.

- The Power Plant Site is approximately 3 miles northwest from the OTP Substation, which will serve as the interconnection point into the regional energy market.

- The OTP Substation was reviewed and evaluated to be a more desirable substation that potentially would result in less transmission network upgrades.

- The Power Plant Site is located on a paved road to aid in winter transport of fuel oil.

- The Power Plant Site is located near a fuel oil terminal in Watertown, South Dakota.

- The Power Plant Site avoids USFWS easements, WPAs, and undisturbed lands.

Due to the Power Plant Site meeting all criteria and the Applicants securing a land purchase option at this location, no other sites are currently being considered.

7.2.2 Transmission Line

Using the data collected and the established routing criteria, the Applicants identified initial alignments for the Route within the Transmission Line Study Area. These alignments typically follow public roadways and section or quarter section field lines to minimize impacts on existing land uses and to allow for easier construction and long-term maintenance access.

Further analysis along these initial alignments included conducting field surveys, including wetland and waterbody field delineations and mapping, where landowner permission was granted or from the roadway ROW. A records search was conducted for cultural resources, and previous recorded surveys and site locations were noted. Route selection required the Applicants to balance various factors, such as: (1) avoiding engineering constraints (i.e., infrastructure in and around the OTP Substation); (2) utilizing engineering opportunities (e.g., road ROW); (3) avoiding or minimizing impacts on environmental resources (e.g., waterbodies/wetlands, cultural resources, potentially undisturbed grassland, public lands); and (4) minimizing impacts on landowners and existing land use in order to maximize the potential to secure voluntary easements. The following routes represented the most viable alternatives:

- Route 1 (Proposed Route) begins at the Power Plant Site and extends east for 1 mile (0.25 mile north of 192nd Street). The Route then turns north for 0.15 mile along 480th Avenue before turning at a northeast angle for 0.14 mile. The Route extends for approximately 0.91 mile east to 481st Avenue. It then turns south along 481st Avenue for 2.0 miles before turning southeast across a row crop farm field to the OTP Substation.

- Route 2 begins at the Power Plant Site and follows 479th Avenue south to 192nd Street. It then turns east along 192nd Street for 2 miles to 481st Avenue. The route then turns south along 481st Avenue for 1.25 miles before turning southeast across agricultural land to the OTP Substation.

- Route 3 begins at the Power Plant Site and follows south along 479th Avenue to 192nd Street. It then turns east along 192nd Street for 1 mile to 480th Avenue. The route then extends south along 480th Avenue for 1 mile. It then turns east along 193rd Street before turning south along 481st Avenue. The route extends south 0.25 mile before turning -east-southeast to the OTP Substation.

Table 2 compares the routing criteria for potential routes. Route 1 minimizes impacts on homes and structures but does cross close to and between habitat resource areas. Of the three proposed

transmission line routes, Route 1 was selected as the proposed route from the Power Plant Site to the OTP Substation.

Table 2. Summary of Route Criteria

Criteria	Route 1 (Proposed Route)	Route 2	Route 3
Residences within 500 feet of transmission line centerline	0	2	2
Avoids WPAs	Runs adjacent to WPA; avoids direct impacts	Avoids Areas	Avoids Areas
Avoids USFWS wetland and grassland easements	Runs adjacent to USFWS wetland easement; avoids direct impacts	Avoids Areas	Avoids Areas
Crossing Undisturbed Grasslands (Acreage within 150 Foot Corridor)	20.10	21.40	24.60
Length of Transmission Line (Miles)	4.65	3.90	4.14

8.0 Environmental Information (ARSD 20:10:22:13)

Sections 9.0 through 17.0 provide further detail regarding the existing environment at the time of the submission of this Application, the potential changes to the existing environment from construction and operation of the Project, identification of the minimal amount of irreversible changes that are anticipated to remain beyond the operating lifetime of the Project, and the avoidance, minimization, and mitigation measures that have been or will be taken by the Project Applicants.

Permanent impacts are defined as:

- For the Power Plant Site, the extent of the plant's footprint (approximately 20 acres).
- For the transmission line, 8- to 15-foot diameter at each structure foundation location depending on structure type.

Temporary impacts are defined as all areas potentially subject to construction-related disturbance, all of which will be revegetated following construction completion, and include:

- For the Power Plant Site, the temporary impact area will be the remainder of the 71-acre site (approximately 51 acres). The impact will not extend out to the entire area, but the extent of the impact area is conservative to determine impacts for the purposes of this analysis. The construction of the site will take approximately two years.

For the transmission line, the temporary impact areas include:

- Designated areas around each transmission structure, approximately 150 by 150 feet, to allow for construction equipment to complete the installation. This area is anticipated to return to the existing land use.

- Designated areas for construction equipment to pull the wire for the transmission line. These were estimated to be approximately 100 x 300 feet at locations that the Route changes direction.

- Designated area along the entire transmission line within the proposed easement area for a 15-foot access road for construction equipment to access each proposed transmission structure location. Most of the Route is adjacent to an existing road, so this entire length may not be affected but is included to be conservative in calculated areas of impact.

The Project is in an area with existing linear infrastructure including two other transmission lines, a 115-kV transmission line that runs along 193rd Street and a 345-kV transmission line owned by OTP that runs between 481st and 482nd Avenues. The Astoria Station Power Plant is located approximately 3.25 miles southwest from the Power Plant Site. Land use is primarily row crops and grasslands/haylands. A cumulative impacts analysis that accounts for the impacts of the Project and energy conversion facilities that are operating or under construction is required (ARSD 20:10:22:13). The phrase "energy conversion facility" is defined as "any new facility, or facility expansion, designed for or capable of generation of one hundred megawatts or more of electricity, but does not include any wind or solar energy facilities" (SDCL 49-41b-2(6)). The Applicants are aware of only one other major industrial facility in the vicinity of the Project under regulation by the Commission, OTP's Astoria Station Power Plant, an operating energy conversion facility. Given the presence of another energy conversion facility in the vicinity of the Project, cumulative effects on resources will be addressed in Sections 9.0 to 17.0.

8.1.1 Summary of Coordination

The Applicants have coordinated with various stakeholders including landowners, local community members, local officials, and Tribes that have historical ties to the area. Current outreach efforts include SDSHPO; South Dakota Game, Fish, and Parks (SDGFP); South Dakota Department of Agriculture and Natural Resources (SDDANR); USACE; Federal Aviation Administration (FAA); and USFWS. Responses and coordination points made are incorporated into this application throughout. See Appendix A and Appendix B for the coordination materials.

Tribal letters were drafted and sent in May 2024 to a total of 28 different tribes with ties to eastern South Dakota (Table 3). Email correspondence was sent in May 2025 to note the change from RICE generation to CTs. Three tribal responses were received for the initial May 2024 coordination from Flandreau Santee Sioux Tribe, Ponca Tribe of Nebraska, and Northern Arapaho Tribe of Wind River Reservation. Refer to Appendix B for their coordination.

Table 3. Summary of Coordination Completed for the Project

Agency or Tribe	Date Conducted	Summary of Coordination
Apache Tribe of Oklahoma	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Blackfeet Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Brookings County Commission	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Brookings-Deuel Rural Water System	February 16, 2024	Discussed water flow availability.
	April 9, 2025	Discussed changes to water flow requirements.

Agency or Tribe	Date Conducted	Summary of Coordination
Cheyenne and Arapaho Tribes, Oklahoma	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Cheyenne River Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
	May 23, 2025	Tribal coordination response received.
Crow Creek Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Crow Nation	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Deubrook 05-6 School District	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Deuel 19-4 School District	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Deuel County Board of Adjustment	May 13, 2024	Gave a presentation with a Project overview.
Deuel County Commission	May 21, 2024	Gave a presentation with a Project overview.
	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Eastern Shoshone Tribe of Wind River Indian Reservation	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Estelline 28-2 School District	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Federal Aviation Administration	June 3, 2024	Request for input for the Project.
First District Association of Local Governments	July 23, 2024	Initial meeting with First District discussing Project site details.
Flandreau Santee Sioux Tribe of South Dakota	May 31, 2024	Request for input for the Project. Response received June 8, 2024, requesting all studies done for the Project.
	June 12, 2024	MRES response to June 8, 2024, response with cultural resources record search information.
	November 19, 2024	Invitation to join upcoming cultural resources survey.
	November 25, 2024	Survey report from attending cultural resources survey. Noting no cultural material or human remains in this area will be affected by the proposed Project.

Agency or Tribe	Date Conducted	Summary of Coordination
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Fort Peck Assiniboine and Sioux Tribes	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Iowa Tribe of Kansas and Nebraska	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Landowners and Residents within Area	May 22, 2024	Postcard and newspaper invitations were sent and posted inviting landowners and residences within the area to the community meeting.
	June 11, 2024	Applicants hosted an in-person, public open house at the Deubrook Area Elementary School in Toronto, South Dakota. The Applicants provided information on the Project, answered questions, and collected early input from landowners and stakeholders.
	July 9, 2024	Thank you postcard sent to those that attended the open house held on June 11, 2024.
	August 16, 2024	Applicants sent letters to landowners with updated information on the preliminary route of the transmission line.
	August to October 2024	Coordination with landowners for right-of-entry for surveys.
Local Review Committee	July 7, 2024	Letter was sent to the members of the Local Review Committee introducing the proposed Project.
	August 26, 2024	Meeting was held.
	November 18, 2024	Held an informational meeting for landowners and residents for the Social and Economic Effect/Impact Study.
	June 30, 2025	Held an informational meeting due to change from RICE generator to CTs.
Lower Brule Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Lower Sioux Indian Community in the State of Minnesota	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.

Agency or Tribe	Date Conducted	Summary of Coordination
Northern Arapaho Tribe of Wind River Indian Reservation	May 31, 2024	Request for input for the Project. Response received June 19, 2024, with the determination.
	November 19, 2024	Invitation to join upcoming cultural resources survey.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Northern Cheyenne Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Oglala Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Omaha Tribe of Nebraska	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Pawnee Nation of Oklahoma	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Ponca Tribe of Nebraska	May 31, 2024	Request for input for the Project. Response received June 18, 2024, detailing personnel/contact updates.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Prairie Island Indian Community in the State of Minnesota	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Santee Sioux Nation, Nebraska	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Sisseton Wahpeton Oyate	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
South Dakota Department of Agriculture and Natural Resources	June 3, 2024	Request for input for the Project. Response received July 10, 2024, detailing Environmental Review of the Project.
	July 11, 2024	Coordination meeting with SDDANR to discuss permitting requirements.
	July 11, 2024	Written response to the initial scoping letter.
	January 28, 2025	Coordination meeting with SDDANR to discuss wetland impacts.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
	May 27, 2025	Agency coordination response received.

Agency or Tribe	Date Conducted	Summary of Coordination
South Dakota Game, Fish and Parks	June 3, 2024	Request for input for the Project.
	November 7, 2024	Environmental Review
	January 28, 2025	Correspondence noting National Heritage Database review was part of Environmental Review.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
	May 27, 2025	Agency coordination response received.
	June 3, 2025	Agency coordination response received.
South Dakota Municipal Electric Association	October 9, 2024	Applicants presented an overview of the Project.
South Dakota Public Utilities Commission	May 3, 2024	Coordination meeting with Commission staff discussing Project scope and preliminary plans.
South Dakota State Historical Society/State Historic Preservation Office	May 23, 2024	Correspondence with SDSHPO to compile recommended list for Tribal coordination.
	June 3, 2024	Request for input for the Project. Response received October 17, 2024, detailing recommended actions to meet the requirements of the Commission's Facility Permit Application.
	September 11, 2024	Additional information was provided to SDSHPO as requested.
	October 17, 2024	Agency coordination response received.
	June 20, 2025	Response to agency coordination letter and submission of the Level III report for the Power Plant Site.
	July 22, 2025	Agency coordination response received. Request for tribal coordination documentation.
	July 23, 2025	Additional information was provided to SDSHPO as requested.
Spirit Lake Tribe, North Dakota	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Standing Rock Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Three Affiliated Tribes	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Town of Astoria	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Town of Brandt	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.

Agency or Tribe	Date Conducted	Summary of Coordination
Town of Toronto	July 24, 2024	Correspondence with the assigned Local Review Committee detailing Project scope and impacts.
Turtle Mountain Band of Chippewa	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Upper Sioux Community, Minnesota	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
U.S. Army Corps of Engineers	June 3, 2024	Request for input for the Project.
	September 19, 2024	Coordination meeting with USACE to discuss Project scope and timeline.
	January 17, 2024	Coordination meeting with USACE to discuss wetland delineation findings and jurisdictional determination.
	February 13, 2025	Approved jurisdictional determination response received.
U.S. Department of Agriculture - NRCS	February 7, 2025	Request for input for the Project.
	February 11, 2025	Agency coordination letter response.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
U.S. Fish and Wildlife Service	June 3, 2024	Request for input for the Project.
	February 5, 2025	Proposed species effects and survey plan.
	February 20, 2025	Additional IPaC provided to USFWS.
	February 20, 2025	Agency coordination letter response.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Winnebago Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.
Yankton Sioux Tribe	May 31, 2024	Request for input for the Project.
	May 23, 2025	Request for input due to change from RICE generator to CTs.

8.1.2 Summary of Studies and Surveys

The environmental and resource studies and field surveys conducted (or ongoing/planned) for the Project are summarized in Table 4. The associated study reports, if available, are included in Appendix C through Appendix G, respectively.

Table 4. Summary of Studies and Reports Completed for the Project

Resource Study	Study Completion Date	Location of Information from Study within this Application
Wetland Delineation	December 16, 2024 Revised April 2, 2025	See Section 10.3 and Appendix C for more information.
Habitat Assessment	December 16, 2024 Revised April 2, 2025	See Sections 11.0 and 12.0, Appendix D for more information.
Noise Study Report	July 2025	See Section 13.3 and Appendix E for more information.
Traffic Study	October 2024	See Section 17.5 and Appendix F for more information.
Level I Cultural Resources Records Search	August 23, 2024	See Section 17.6 for more information.
Level III Cultural Resources Investigation and Report	May 2025	See Section 17.6 for more information.

9.0 Effect on Physical Environment (ARSD 20:10:22:14)

The following sections describe the existing physical environment in the vicinity of the Project, the potential effects of the Project on the physical environment, and measures that will be utilized to avoid, minimize, and/or mitigate potential impacts.

9.1 Regional Landforms Surrounding the Proposed Site

The Power Plant Site and the Route are within the Prairie Coteau physiographic region located in eastern South Dakota. This physiographic region consists of an approximately 22,471 square kilometer (8,676 square mile), triangular-shaped plateau extending from the apex in Sargent County, North Dakota, to Turner County, South Dakota. The Prairie Coteau is flanked by the Minnesota-Red River Lowland to the east and the James River Lowland to the west. Topography at the northern end of the Prairie Coteau in relation to the adjacent lowlands is highly variable with steep escarpments that gradually taper off to the south (Johnson et al. 1995). The area within and surrounding the Power Plant Site and the Route consists of low, rolling hills used primarily for agricultural row crops and/or livestock grazing pasture. Figure 7 and Figure 8 display the Power Plant Site and the Route on U.S. Geological Survey (USGS) topography.

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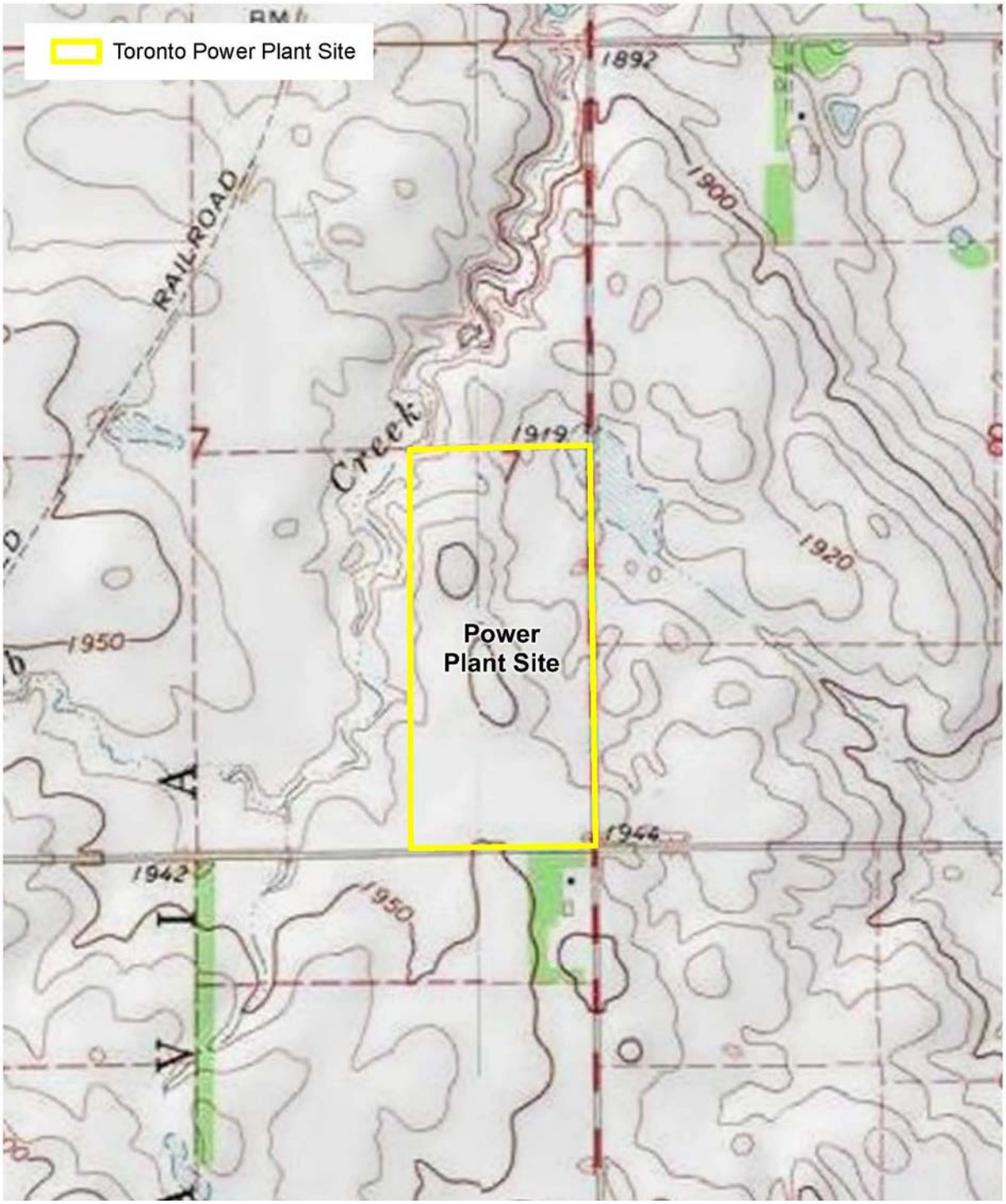

Figure 7. Power Plant Site on U.S. Geological Survey Topography

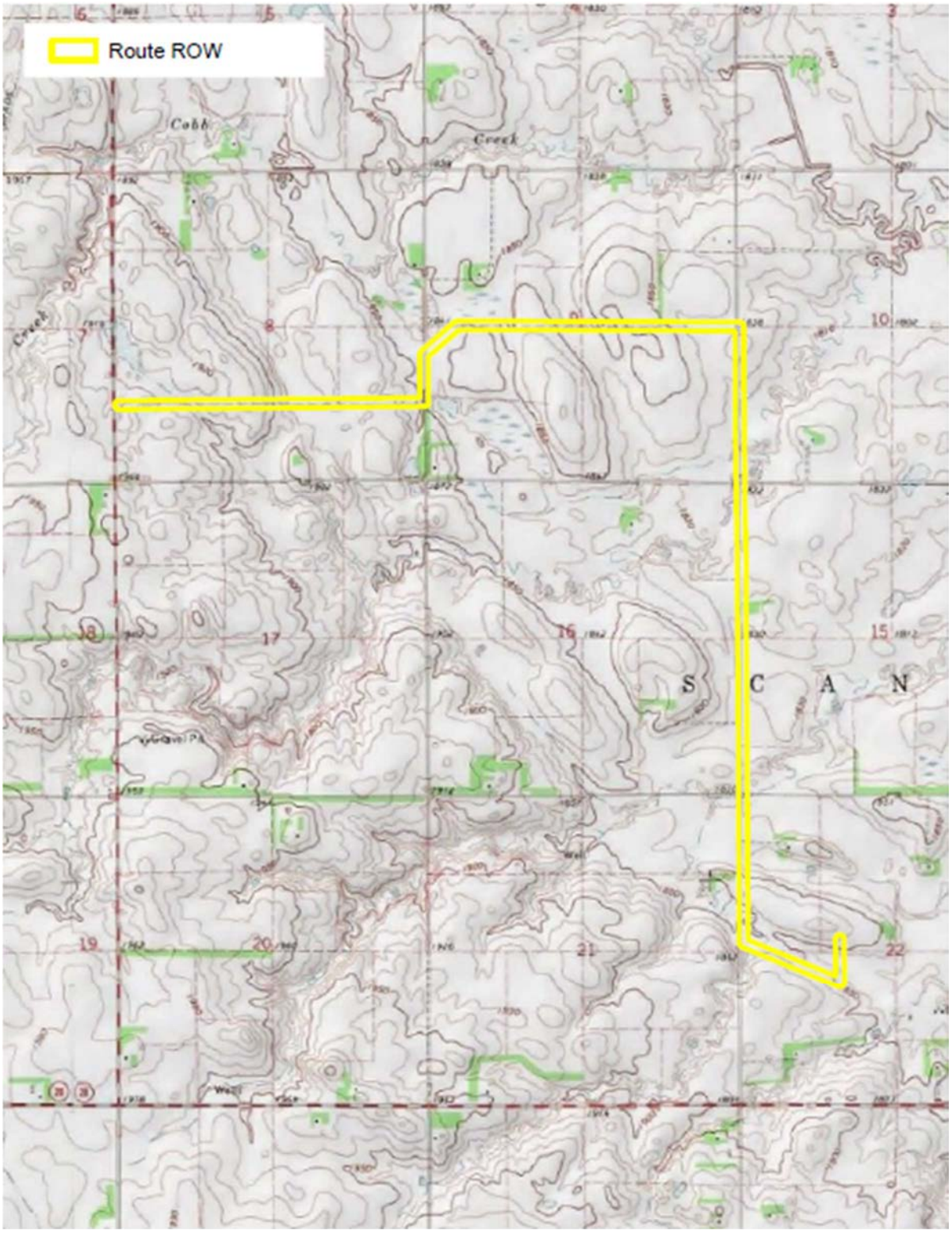

Figure 8. Route on U.S. Geological Survey Topography

Surficial geology of the Power Plant Site and the Route is composed of large deposits of alluvial valley fill, glacial till, and outwash overlaying bedrock formations. The glacial till is comprised of

an unsorted mixture of clay, silt, sand, and gravel. Sand and gravel outwash are found at both the surface and below glacial till deposits (Kume 1985).

The bedrock is described as Pierre Shale and Niobrara Formation. Pierre Shale comprises the uppermost layer of bedrock and is placed immediately above the Niobrara Formation in relation to the stratigraphic position. Pierre Shale and Niobrara Formation are both Late Cretaceous-age bedrock deposits. Pierre Shale is a blue-gray to dark-gray layer of bedrock and has a thickness of up to 1,000 feet. The formation is composed primarily of fissile to blocky shale with persistent beds of bentonite, black organic shale, and light brown chalky shale. Minor sandstone and conglomerate as well as abundant carbonate and ferruginous concretions are also found within the formation. The Niobrara Formation is a white to dark-gray layer of bedrock and has a thickness of up to 150 feet. The formation is composed predominantly of argillaceous chalk, marl, and shale. Minor components include thin, laterally continuous bentonite beds, chalky carbonaceous shale, minor sand, and small concretions (Tomhave and Schulz 2004).

Figure 9 illustrates the bedrock and surficial geology in the vicinity of the Power Plant Site and the Route. Due to the nature of the Project, there is minimal ground disturbance required for Project construction resulting in no expected significant affects to geologic features, aquifers, mineral deposits, or fossils.

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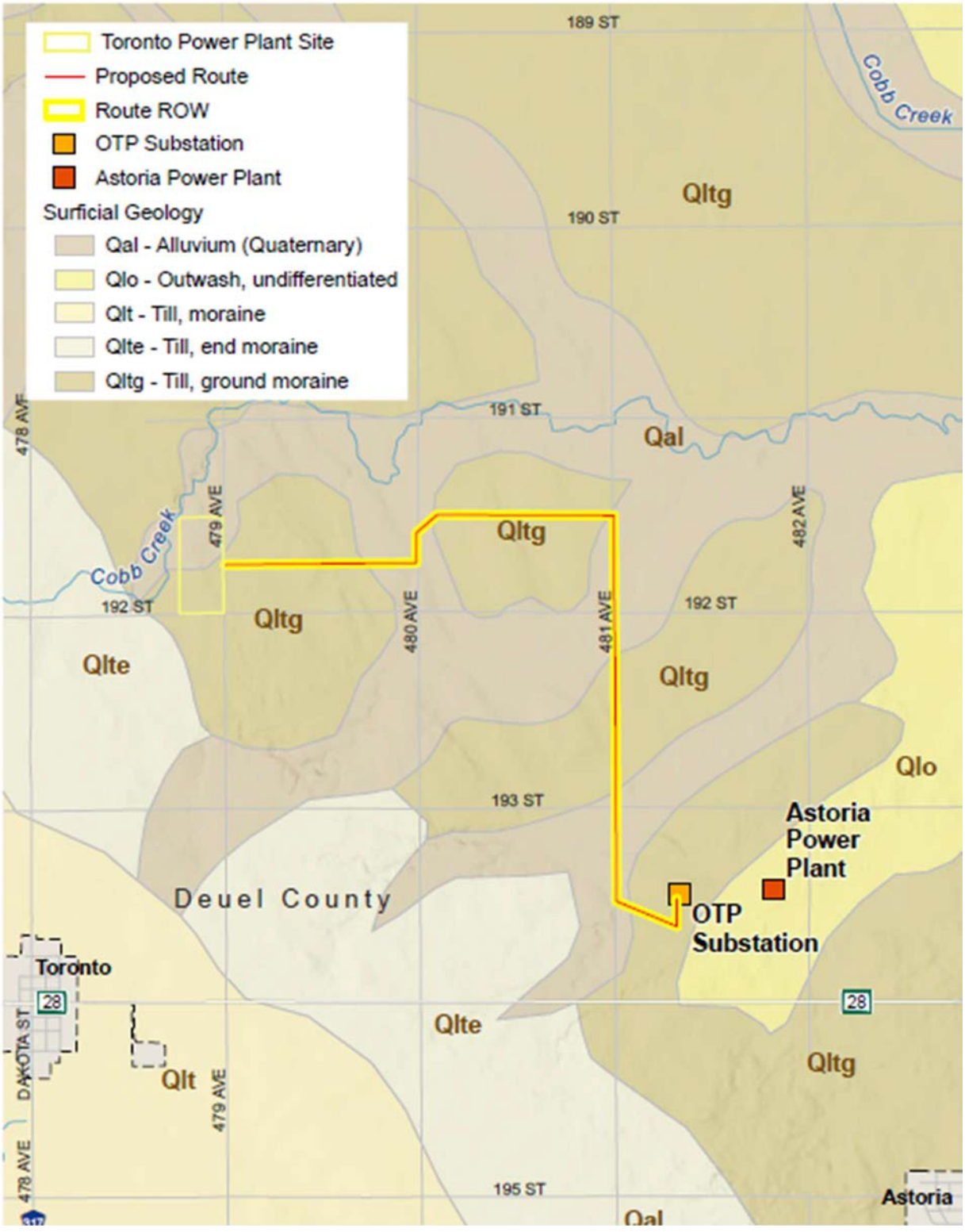

Figure 9. Bedrock and Surficial Geology

9.2 Economic Deposits

Based on a desktop review of the SDDANR Minerals, Mining, & Superfund Construction Aggregate map and the South Dakota Geological Survey (SDGS) Interactive Map, there are no substantial economic deposits, mineral resources, or local oil/gas well developments located within the Power Plant Site or the Route. There is one active construction aggregate mining site and four reclaimed construction aggregate mining sites primarily mining sand/gravel within a 5-mile radius of the Route (SDDANR 2024b).

9.3 Soil Types

Soils within the Power Plant Site and the Route can be grouped by soil associations. A soil association is a group of individual soil series that occur together in a characteristic geographic pattern or distinctive pattern of soils, relief, and drainage. Each soil association is typically composed of one or more major soils and one or more minor soil components. Soil associations are defined by the Natural Resources Conservation Service (NRCS).

Soil Survey Geographic Database (SSURGO) GIS data available from NRCS were analyzed using an ArcInfo license of Esri® ArcMap™ or ArcGISPro™ to determine the soil associations and series within the Power Plant Site and the Route. The soil associations identified within the Power Plant Site and the Route are shown in Figure 10.

Three different soil designations or factors were considered: prime and statewide importance farmland, erosion factor, and wind erodibility group (WEG).

- Prime and statewide importance farmland designations are soil designations that indicate the best combination of physical and chemical characteristics for producing food and feed.

- Erosion factor K indicates the susceptibility of soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation and the Revised Universal Soil Loss Equation to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on the percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Generally, the higher the K value, the more susceptible the soil is to sheet and rill erosion by water (USDA 2019).

- A WEG consists of soils in cultivated areas with similar properties affecting their susceptibility to wind erosion. Soils assigned to Group 1 are the most susceptible to wind erosion and those assigned to Group 8 are the least susceptible (USDA 2019).

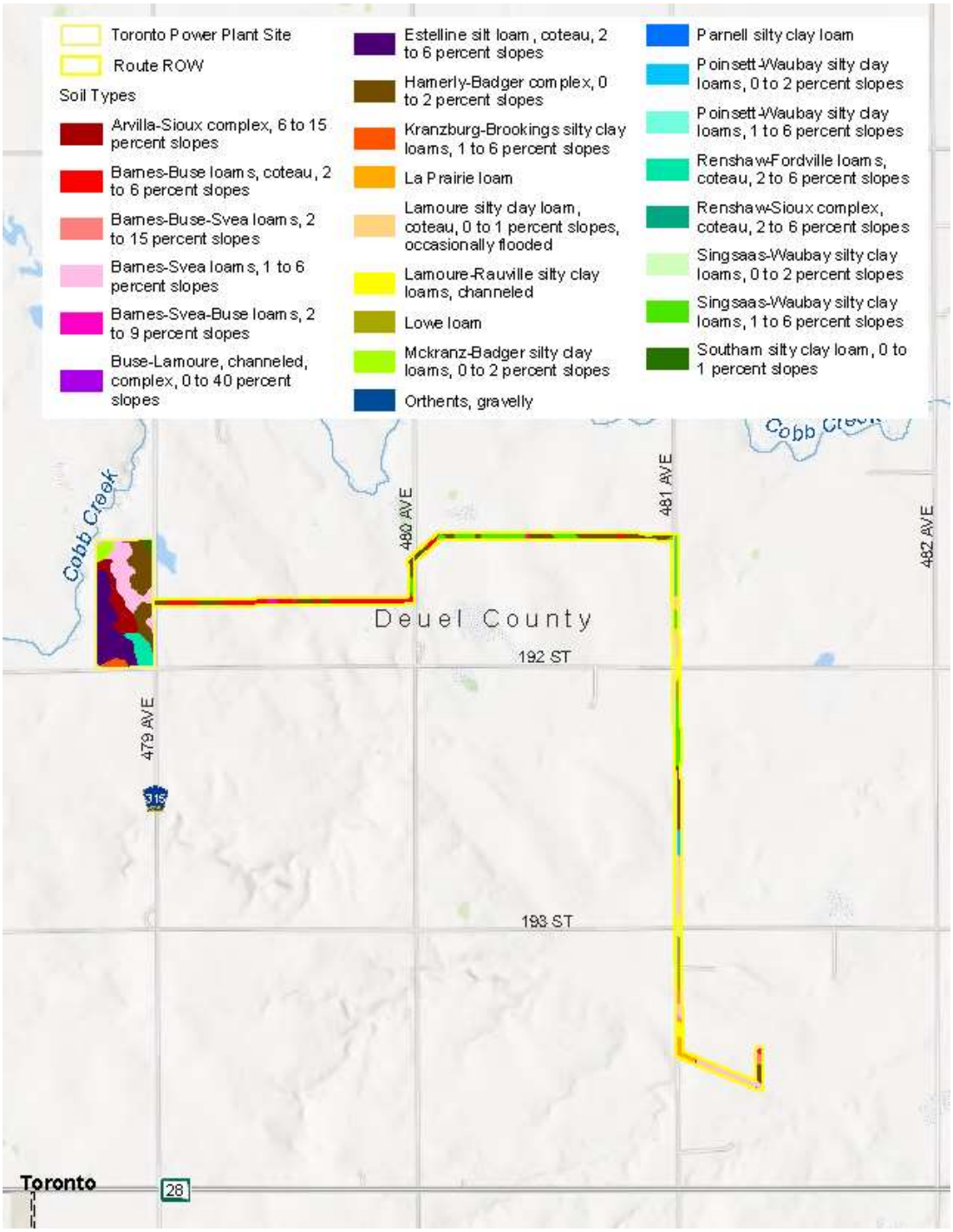

Figure 10. Soil Types

Soils within the Power Plant Site are composed primarily of Estelline series, Barnes-Svea series, Hamerly-Badger complex, and Arilla-Sioux complex. Their designation for prime and statewide importance is shown in Table 5. Estelline series typically consist of layers of silty loam and gravelly loamy sand formed on outwash plains. This series is well drained with a moderately high to high Ksat value of 0.20 to 2.00 inches per hour (in/hr). Barnes-Svea series typically consists of layers of loam and clay loam formed on ground moraines and swales. This series is moderately well drained to well drained with a moderately high to high Ksat value of 0.20 to 2.00 in/hr. Hamerly-Badger complex typically consists of loam, clay loam, and silty clay loam formed on within and on the rims of drainageways. This complex is somewhat poorly drained with a moderately low to high

Ksat value ranging from 0.06 to 2.00 in/hr. Arvilla-Sioux complex typically consists of sandy loam, gravelly loam, and gravelly coarse sand formed on outwash terraces on moraines. This complex is somewhat excessively to excessively drained with a high Ksat value of 1.98 to 5.95 in/hr (USDA 2019). The major soils within the Power Plant Site are assigned to WEG as follows:

- Estelline series – 6
- Bares-Svea series – 6
- Hamerly-Badger complex – 4L
- Arilla-Sioux complex – 3

The group ratings of these soils indicate a moderate to low susceptibility to wind erosion within the Power Plant Site.

The Route includes soils primarily composed of Hamerly-Badger complex, Singsaas-Wauby series, and Barnes-Buse series. Their designation for prime and statewide importance is shown in Table 6. Hamerly-Badger complex consists of loam, clay loam, and silty clay loam and is formed within and on the rims of drainageways. This complex is somewhat poorly drained with a moderately low to high Ksat value ranging from 0.06 to 2.00 in/hr. Singsaas-Wauby series primarily consists of silty clay loam and forms on plains and swales. This complex is moderately well drained to well drained with a moderately high to high Ksat value of 0.20 to 1.98 in/hr. Barnes-Buse series consists of loam and clay loam and is associated with ground moraines. This series is well drained with a moderately high to high Ksat value of 0.20 to 2.00 in/hr. (USDA 2019). The major soils within the Route are assigned to WEGs as follows:

- Hamerly-Badger complex – 4L
- Singaas-Wauby series – 7
- Barnes-Buse series – 6

These group ratings indicate a moderate to low susceptibility to wind erosion within the Route.

Table 5. Soil Associations within the Power Plant Site

Soil Name	Soil Symbol Type	Area coverage (acres)	Farmland Classification
Arvilla-Sioux complex, 6 to 15 percent slopes	AvD	10.9	N/A
Barnes-Svea loams, 1 to 6 percent slopes	BkB	15.1	Prime Farmland
Barnes-Svea-Buse loams, 2 to 9 percent slopes	BmC	0.2	Farmland of Statewide Importance
Estelline silt loam, Coteau, 2 to 6 percent slopes	EsB	20.6	Prime Farmland
Hamerly-Badger complex, 0 to 2 percent slopes	Hm	14.8	Prime Farmland if Drained
Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	KrB	1.5	Prime Farmland
Mckranz-Badger silty clay loams, 0 to 2 percent slopes	Mk	2.4	Prime Farmland if Drained
Orthents, gravelly	Ok	<0.1	N/A

Soil Name	Soil Symbol Type	Area coverage (acres)	Farmland Classification
Southam silty clay loam, 0 to 1 percent slopes	So	0.7	N/A
Renshaw-Fordville loams, Coteau, 2 to 6 percent slopes	Z171B	4.8	Prime Farmland if Irrigated
	Total	71.1	

Table 6. Soil Associations within the Route

Soil Name	Soil Symbol Type	Area coverage (acres)	Farmland Classification
Barnes-Buse loams, Coteau, 2 to 6 percent slopes	BcB	15.4	Prime Farmland
Barnes-Buse-Svea loams, 2 to 15 percent slopes	BgD	3.0	N/A
Barnes-Svea loams, 1 to 6 percent slopes	BkB	7.1	Prime Farmland
Barnes-Svea-Buse loams, 2 to 9 percent slopes	BmC	2.1	Farmland of Statewide Importance
Buse-Lamoure, channeled complex 0 to 40 Percent slow	BxE	0.1	N/A
Hamerly-Badger complex, 0 to 2 percent slopes	Hm	21.1	Prime Farmland if Drained
La Prairie loam	La	2.4	Prime Farmland
Lamoure-Rauville silty clay loam, Coteau, 0 to 1 percent slopes, occasionally flooded	Z152A	5.9	Prime Farmland
Lamoure-Rauville silty clay loams, channeled	Lr	3.9	N/A
Lowe loam	Lw	4.9	Prime Farmland if Drained
Parnell silty clay loam	Pa	<0.1	N/A
Poinsett-Waubay silty clay loams, 0 to 2 percent slopes	PwA	1.5	Prime Farmland
Poinsett-Waubay silty clay loams, 1 to 6 percent slopes	PwB	0.3	Prime Farmland
Singsaas-Waubay silty clay loams, 1 to 6 percent slopes	ShB	16.3	Prime Farmland
Southam silty clay loam, 0 to 1 percent slopes	So	0.1	N/A
	Total	84.0	

9.4 Seismic Risks, Subsidence Potential, and Slope Instability

The risk of seismic activity near the Power Plant Site and the Route is considered low. Faults, both active and inactive, have the potential to increase seismic risk. The Project is not located within the vicinity of any known faults (Peterson et al. 2023). The 2023 National Seismic Hazard Model produced by USGS shows that the area in the Project vicinity has less than a 5 percent chance of a damaging earthquake shaking in the next 100 years. Information from the South Dakota Geological Survey (SDGS) for Deuel County and adjacent counties was reviewed, and no seismic events have been recorded since 1900.

9.5 Physical Environment Impacts and Avoidance, Minimization, and Mitigation Measures

Construction of the Power Plant will result in up to approximately 50.0 acres of temporary disturbance and approximately 20.0 acres of permanent disturbance to surface soils within the Power Plant Site. The Power Plant Site has 59.5 acres of prime farmland or farmland of statewide importance. Construction of the Route will result in up to approximately 30.5 acres of temporary disturbance and approximately 0.06 acre of permanent disturbance to surface soils within the Route. Within the Route, 247.6 acres of prime farmland or farmland of statewide importance were identified.

The Farmland Protection Policy Act requires federal agencies to consider the impacts of their projects on farmland, specifically prime farmland and farmland of statewide importance. This Project will have no federal nexus and is not considered under this regulation. On February 4, 2024, a letter was sent to informally request U.S. Department of Agriculture (USDA) NRCS input for the Project. NRCS responded that no prime farmland or farmland of statewide importance will be impacted by the Project.

Surface disturbance caused by construction of the Power Plant and transmission structures may result in the soil surface becoming more prone to erosion or compaction, which can result from use of heavy equipment. Clearing, grading, trench excavation, and backfilling will occur during construction within the designated construction workspace, which may result in impacts on soil resources in these areas. Clearing includes the removal of cover, which exposes soil to the effects of wind and precipitation. This may increase the potential for soil erosion and movement of sediments into sensitive environmental areas. Heavy equipment and repeated traffic may compact soil, reducing porosity and percolation rates, which could result in increased runoff potential.

To reduce potential impacts on and from soils, the Applicants will develop and utilize Best Management Practices (BMP) during construction to protect topsoil and adjacent wetland resources and minimize soil erosion. Measures to reduce impacts on soils during construction may include the use of erosion and sediment control BMPs during construction and restoration, noxious weed control, segregating topsoil from subsurface materials, reseeding disturbed areas based on agency recommendations or landowner requests, the use of construction equipment appropriately sized to the scope and scale of the Project, verifying access road grades fit closely with the natural terrain, proper on-site disposal of soil cuttings from foundation construction, and maintaining proper drainage. The Applicants will repair and restore areas temporarily disturbed by construction or maintenance of the Project. Except as otherwise agreed to by the landowner, restoration will include replacement of original pre-construction topsoil or equivalent quality topsoil to its original elevation, contour, and compaction and re-establishment of original vegetation as close thereto as reasonably practicable.

Geotechnical soil borings will be conducted at the Power Plant Site and at several of the transmission line structure locations before construction to determine the soil suitability to support the structure foundations. This information will help dictate the final design parameters of the structure foundations.

The Power Plant will require use of fuels, lubricants, and coolants during operation. A Spill Prevention, Control, and Countermeasure (SPCC) Plan will be required and completed for the operation of the Power Plant. The site has been designed to contain these materials. In the event of a spill, drainage of the contaminated water will be captured by the berms or containments and processed through an oil-water separator for the various storage tanks and unloading facilities. In the event of an accidental spill, SDDANR will be contacted, and MRES will work with the agency to determine the remediation needed. Contamination from the release of fuels, lubricants,

and coolants from construction equipment could also impact soils. Impacts related to construction will be temporary and localized.

Construction will require coverage under the SDDANR General Permit for Stormwater Discharges Associated with Construction Activities, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP), which will identify potential sources of stormwater pollution and specify BMPs to control erosion and sedimentation and minimize negative impacts caused by stormwater discharges from the Project. The BMPs include use of silt fencing, straw wattles, erosion control blankets, revegetation, or other features and methods designed to control stormwater runoff and mitigate erosion and sedimentation. The SWPPP will be prepared before the start of construction. The SWPPP will be implemented from the initiation of construction and used through site restoration efforts. Backfill-graded and excavated areas will be restored to preconstruction conditions to the extent practicable once construction has been completed. During operation, stormwater volume, stormwater flow and erosion, and sediment impact on surface water and groundwater resources are not anticipated to change from preconstruction conditions.

The characteristics of the geologic materials in the vicinity of the Project generally limit the risks of Project impacts. The Project has been routed to minimize impacts on landforms, geology, and economic deposits. Available geologic data indicates that the Project will not significantly affect soil conditions or bedrock geology. The geological conditions, including geologic formations, seismic risk, and subsidence potential, within the Project ROW are favorable and are not anticipated to control or impact construction or operation of the Project. Seismic activity is not anticipated to affect the performance of the Power Plant or transmission line structures. The placement of the Power Plant and transmission line structure foundations will have a minor impact on the underlying geologic conditions. Except as described in this Application, the Applicants are not aware of any additional constraints that geological characteristics may impose on the design, construction, or operation of the Project.

Additionally, prior to construction, geotechnical soil borings will be conducted at transmission line structure locations to determine the soil suitability to support the transmission line structure foundations. This information will help dictate the final design parameters of the structure foundations. There is a slight risk that the Project impacts included in this Application could increase or decrease based on the final design parameters of the foundations. There also is a slight risk that the final geotechnical investigation could determine that soil parameters along the Route are different than expected. For example, the final foundation design may increase in size if extraordinarily weak soil or organic material are observed for significant depths. On the other hand, the foundation design could be smaller than anticipated if bedrock is identified at a shallow depth. However, impacts in the Application assumed a conservative scenario when calculating permanent aboveground impacts.

There are no gravel/sand pits or oil/gas wells within the Power Plant Site or the Route. Thus, construction and operation of the Project is not anticipated to impact mining operations or oil and gas resources, and no mitigation recommendations are necessary for impacts on these resources.

10.0 Effects on Hydrology (ARSD 20:10:22:15)

The following sections describe the existing hydrology in the vicinity of the Project, the potential effects of the Project on hydrology, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

10.1 Surface Water Resources and Drainage

The primary surface water features in the vicinity of the Power Plant Site and the Route are unnamed tributaries and drainages to Cobb Creek and Fish Lake. Drainage patterns in southern Deuel County are well defined with the streams and rivers draining east into the Minnesota River. USGS, in cooperation with various federal and State agencies, has mapped the hydrologic boundaries of water resources—in order of descending scale—into regions, subregions, basins, subbasins, watersheds, and sub-watersheds. A detailed map of the surface waters, wetlands, and existing water drainage areas is included in Figure 11. There are no defined flood hazard areas within the Power Plant Site or the Route.

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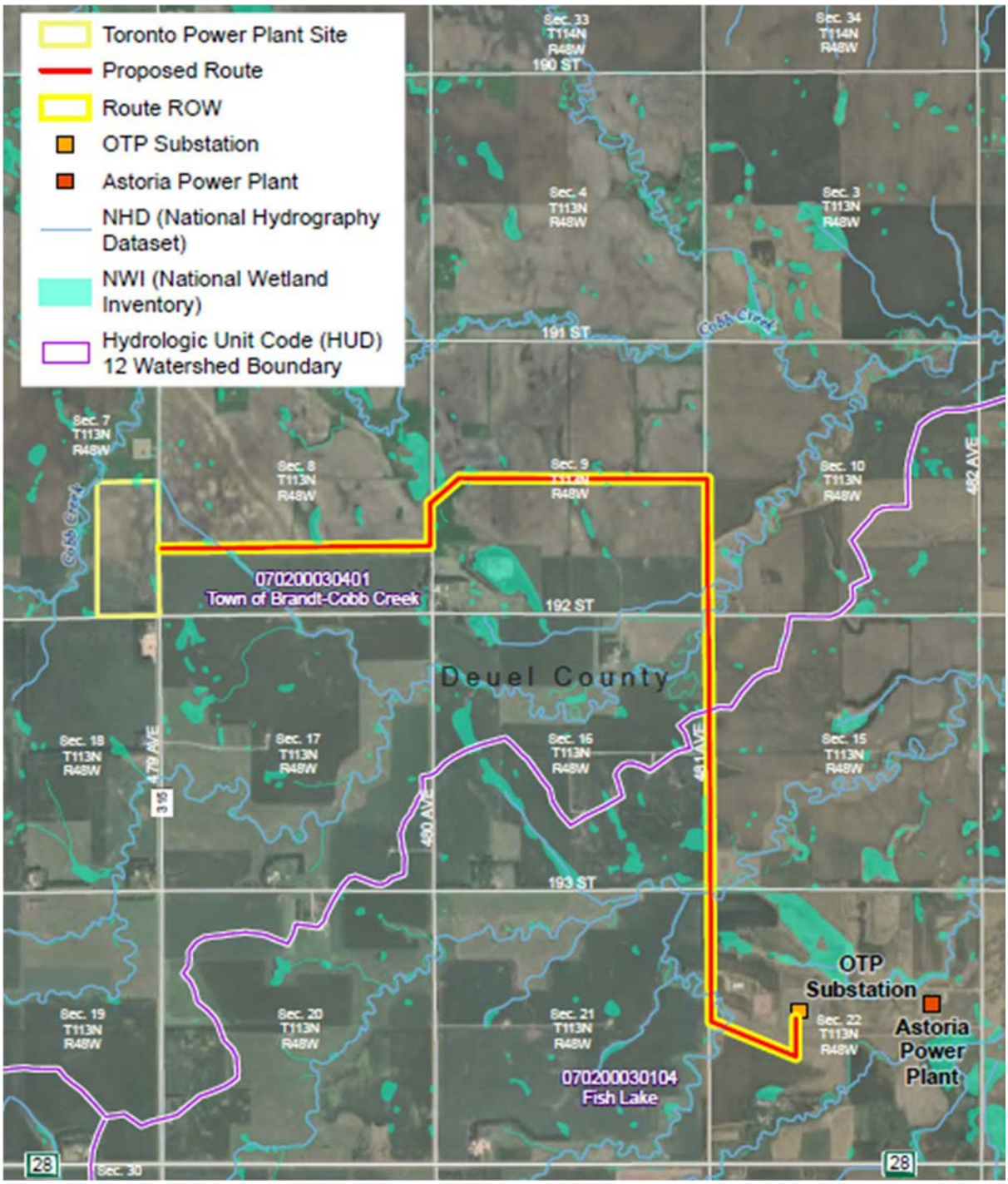

Figure 11. Surface Hydrology and Watersheds

The Power Plant Site is located within one watershed, Town of Brandt-Cobb Creek (HUC 070200030401). Cobb Creek flows adjacent to the Power Plant Site on the west side. The Route is located within two watersheds, Town of Brandt-Cobb Creek (HUC 070200030401) and Fish Lake (HUC 070200030104). The National Hydrology Dataset (NHD) notes two potential unnamed tributaries to Cobb Creek that cross the Route. The NHD also notes one potential unnamed tributary to Fish Lake on the southeast side of the Route (SDGFP 2024). Wetland delineations were completed for the Power Plant Site and the Route, see Figure 12 and Figure 13, respectively. No streams were noted in the Power Plant Site. Within the Route, the noted unnamed tributaries were documented as suspect wetlands. Where access was not available,

delineated resources are noted as “suspect wetlands” and include three potential unnamed tributaries to Cobb Creek. One surface water, an excavated pond, was documented and is noted as Wetland 7 within the report (see Appendix C).

The Clean Water Act requires states to publish a biannual list of streams and lakes that are not meeting their designated uses because of excess pollutants. These streams and lakes are considered impaired waters. The list, known as the 303(d) list, is based on water quality standards violations. States establish priority rankings for waters on the 303(d) list and develop the total maximum daily load of a pollutant that the water can receive and still safely meet water quality standards. There are no waterbodies listed as impaired on South Dakota’s 2024 303(d) list within the Power Plant Site and the Route.

Cobb Creek, located west of the Power Plant Site and the main waterbody that lies within the Power Plant Site and the Route, does not have specific beneficial uses noted under ARSD Ch. 74:51:03. Even though not specifically noted, all streams are assigned two beneficial uses: 1) fish and wildlife propagation, recreation, and stock watering waters; and 2) irrigation waters.

Fish Lake, which is located approximately 6.65 miles east of the Power Plant Site and is the main waterbody within the identified HUC the Route lies within, has the following beneficial uses:

- Warmwater, semi-permanent fish life;
- Immersion recreation;
- Limited contact recreation; and
- Fish and wildlife propagation, recreation, and stock watering waters.

The 2024 SDDANR Integrated Report noted Fish Lake as not meeting the beneficial uses of warmwater semi-permanent fish, immersion recreation, and limited contact recreation. The beneficial uses are not met due to the following parameters: pH, Chlorophyll A, and *E. coli* (SDDANR 2024a).

The National Park Service’s Nationwide Rivers Inventory (NRI) is a listing of more than 3,200 free-flowing river segments in the U.S. that are believed to possess one or more “outstandingly remarkable” natural or cultural values judged to be of more than local or regional significance. Under a 1979 Presidential Directive and related Council on Environmental Quality procedures, all federal agencies must seek to avoid or mitigate actions that will adversely affect one or more NRI segments. There are no NRI-listed rivers in the Power Plant Site or the Route (National Park Service 2024).

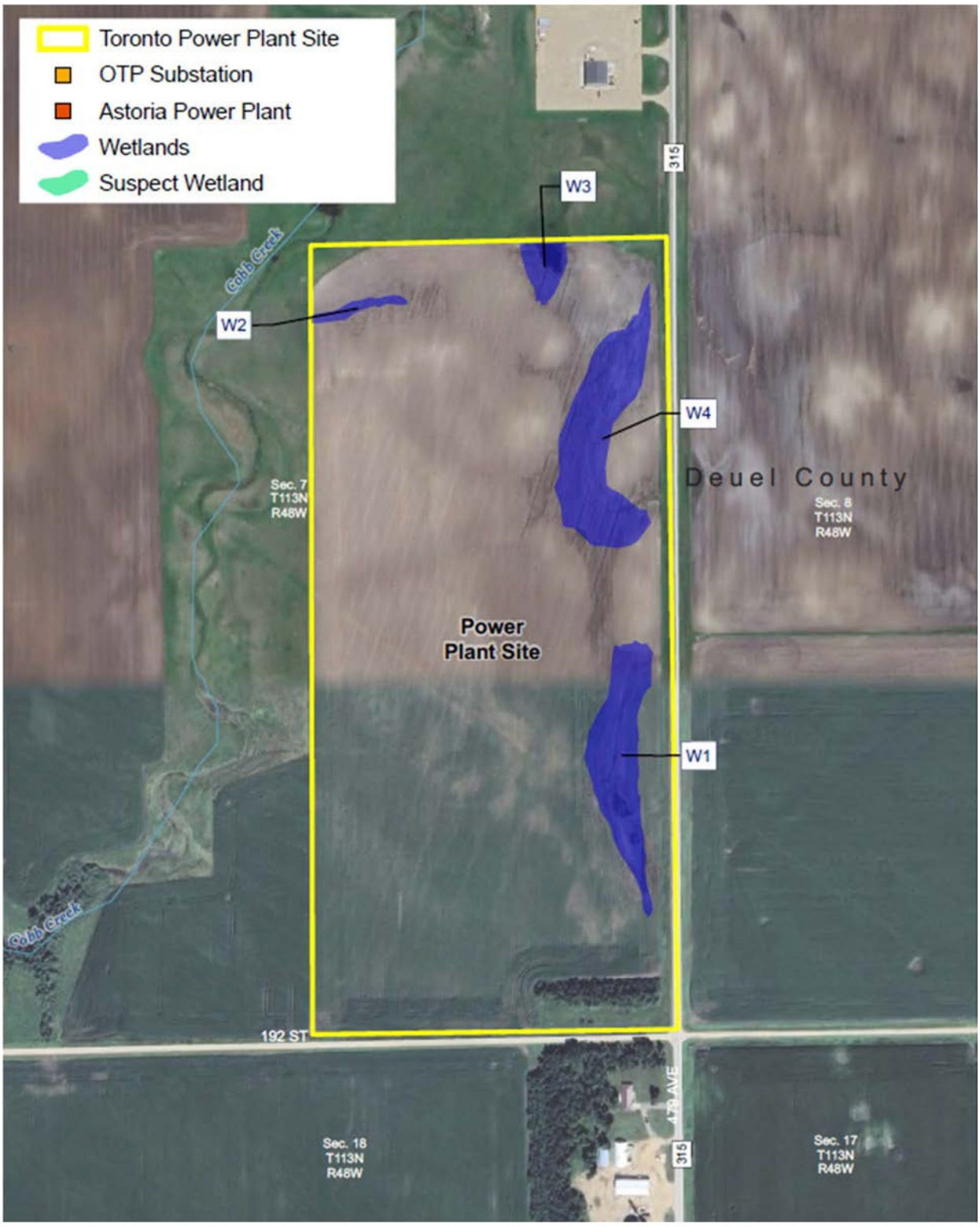

Figure 12. Power Plant Site Delineated Wetlands

Figure 13. Route Delineated Wetlands

10.1.1 Surface Water Resources, Drainage Impacts, and Avoidance, Minimization, and Mitigation Measures

For the construction of the Power Plant, potential impacts on surface water resources may include sedimentation, impacts on drainage patterns, and increased runoff due to the creation of impervious surfaces. The Power Plant has been sited to avoid or minimize impacts on surface water resources to the greatest extent practicable. Other waters within the Route, defined during the field delineation, include one excavated pond associated with Wetland 7 and the suspect wetlands at three noted NHD unnamed tributaries (Figure 13; Appendix C). Field delineation of the three potential unnamed tributary crossings will be completed on the Route once right of entry has been obtained. The boundaries delineated will be used to avoid impacts, to the extent possible.

Final structure locations will be determined based on the final design, and floodplains will be considered in structure placement. If it is not possible to avoid floodplains with structures, Applicants will coordinate with the Deuel County Floodplain Administrator to review structure locations and obtain floodplain development permits, as needed. Construction will comply with the applicable Deuel County floodplain administration ordinance and permit requirements. Impacts on floodplain storage capacity will be negligible due to the long spans between transmission structures and the relatively small volume of foundation material used at the structures.

Due to the lack of NRI-listed rivers within the Power Plant Site and the Route, construction and operation of the Project poses no impact on these resources. Therefore, no mitigation is required for impacts on NRI-listed rivers.

Due to the lack of 303(d)-listed waters within the Route, construction and operation of the Project poses no impact on these resources. Therefore, no mitigation is required for impacts on 303(d)-listed waters.

During construction of the Power Plant and transmission line, water use will be restricted to dust control and foundation construction. This water will be pumped from local surface waters following consultation with SDDANR.

During construction, there is the possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading, and construction traffic. Appropriate stormwater management BMPs will be implemented during construction and operation of the Project to control erosion and reduce the potential for sediment-laden runoff from exposed soils during precipitation events. Construction of the Project will require coverage under the General Permit for Stormwater Discharges Associated with Construction Activities issued by SDDANR, which includes the development and implementation of an SWPPP that prescribes BMPs to control erosion and sedimentation. The Applicants will implement BMPs to avoid and/or minimize the potential for sediment to reach surface waters. Temporary erosion and sediment control methods will be properly placed, monitored, and maintained adjacent to water resources. Erosion and sediment control BMPs may include the use of silt fencing, straw wattles, erosion control blankets, revegetation, or other features and methods designed to control stormwater runoff and mitigate erosion and sedimentation. Where appropriate and in consultation with the landowner or land manager, the Applicants will revegetate disturbed areas to mimic preconstruction conditions.

10.2 Groundwater Resources and Supplies

The Power Plant Site and the Route are within the Prairie Coteau division of the Minnesota-Red River Lowlands physiographic province in the southeastern portion of Deuel County. Land-surface altitude crests in the middle of Deuel County at approximately 2,000 feet above sea level, then land slopes steeply to the Minnesota River valley, approximately 1,150 feet above sea level, on the southeastern side of Deuel County (Kume 1985).

The Power Plant Site and the Route sit atop the Altamont Aquifer and in places the Prairie Coteau Aquifer. Additional minor aquifers that consist of surface and near surface deposits of outwash and alluvium and those isolated, buried, and lenses of outwash are located outside of the Prairie Coteau Aquifer (Figure 14). Commonly, the deposits are made up of hummocky, collapsed outwash, but they do include some meltwater-channel outwash and buried outwash (Kume 1985).

The Prairie Coteau Aquifer underlies approximately 1,100 square miles of Deuel and Hamlin Counties, is composed of several layers (or numerous pockets of groundwater), and is under artesian conditions. The Project Area sits atop two thin layers of the Prairie Coteau Aquifer that are not hydraulically connected (presumed by nearby test wells). Water from the Prairie Coteau Aquifer is used throughout the area for stock and irrigation. In some areas the water is used for domestic and municipal supplies but because of poor quality is not suitable for these uses everywhere (Kume 1985). The Prairie Coteau Aquifer sits atop the Altamont Aquifer.

The Altamont Aquifer underlies 870 square miles of Deuel and Hamlin Counties. Estimated storage in the Altamont Aquifer is 2,900,000 acre-ft (Kume 1985). Water in the Altamont Aquifer is under artesian conditions. The estimated range of average annual recharge to the Altamont Aquifer and the recommended recharge rate for confined aquifers is 3,824 to 15,295 acre-feet per year in Deuel County (Hedges 1982). Water quality in the Altamont Aquifer generally is not suitable to use for irrigation, although may be acceptable in some places. The water ranges from marginally acceptable to unsatisfactory for use as domestic or public water supply. The water is acceptable for livestock stock water.

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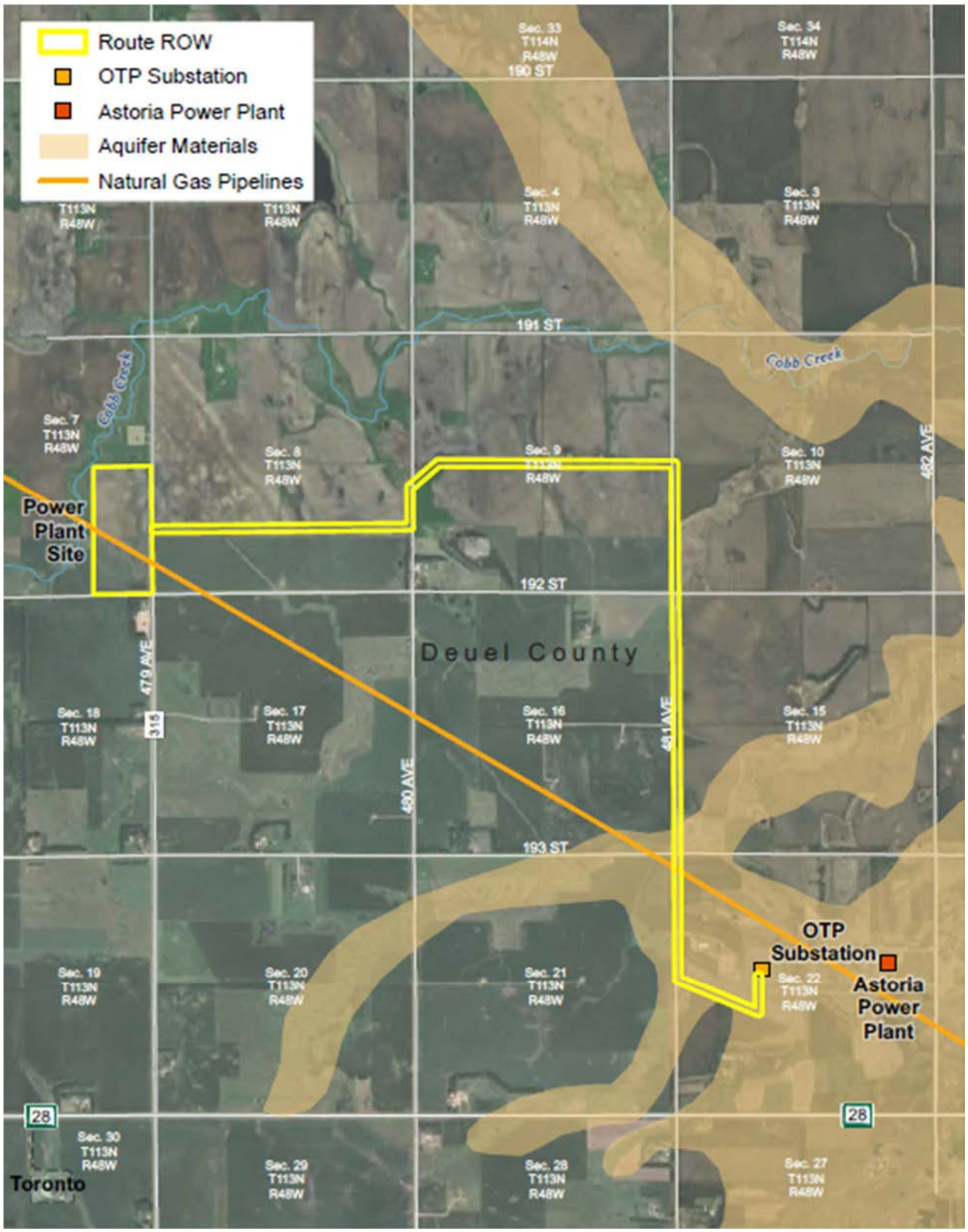

Figure 14. Aquifer Materials

10.2.1 Groundwater Resource Impacts and Avoidance, Minimization, and Mitigation Measures

Two permanent wells are proposed for the operation of the Power Plant within the Power Plant Site. The water will be utilized to provide cooling tower make-up and to fill the fire suppression tank. The tank is required to be filled after use for fire suppression and hose training activities. The fire suppression tank will be available for use by the local firefighting crews. A Water Permit for Non-irrigation Uses will be obtained through SDDANR for the Altamont Aquifer for the wells. A permit application is currently being drafted and will be coordinated with SDDANR. New wells would not be located in flood hazard areas.

Potable water will come from a Brookings-Deuel Rural Water System connection. Initial coordination has occurred with the Brookings-Deuel Rural Water System, and they have verified that they will be able to meet the potable water needs of the facility using the existing water main near the Power Plant Site. As discussed in Section 17.1.6 below, no process water is anticipated to be discharged from the Project site. Any process water collected or used in cooling systems would be evaporated or transported and disposed of at a properly permitted facility in accordance with state and federal laws.

For the transmission line, construction activities that encounter shallow surficial aquifers may result in very localized fluctuations in groundwater levels, which will have a negligible effect on the local groundwater. Once construction activities have been completed, the groundwater levels typically recover quickly. Additionally, the Project has been sited to avoid water wells based on the water well completion report data made available by SDDANR (SDDANR 2024c).

Depending on the timing of well installation, water from surface waters or these wells will be utilized to fill water trucks to wet down roads for dust control and other minor uses during construction. During construction, the Project will have an SWPPP outlining pollution prevention measures for the storage, handling, and disposal of hazardous materials, solid waste, concrete and equipment wash water, portable toilets, construction products, and materials.

10.3 Wetlands

Wetlands in the Power Plant Site and the Route were identified using a combination of desktop analysis and field delineation. Field delineation was completed in areas where right-of-entry was obtained from three landowners along the Route and Power Plant Site. Desktop analysis and observations from the right-of-way identified suspect wetlands along the remaining area of the Route. Field delineations and mapping were completed on September 30 and October 1, 2024. Wetlands were field delineated where access was granted and are documented within the Aquatic Resources Delineation Report (Appendix C). Field-delineated wetland boundaries were defined using the guidelines provided in the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual Midwest Region* (USACE 2010). An area was considered a wetland if it met the three USACE-defined requisite criteria provided in the Manual and Supplement (USACE 1987, USACE 2010): hydrophytic vegetation, hydric soils, and wetland hydrology.

Four wetlands totaling 6.21 acres were field delineated within the Power Plant Site. A total of 24.59 acres of wetlands were identified through field and desktop delineation within the Route ROW. The wetlands identified within the Power Plant Site and the Route are shown in Figure 12 and Figure 13, respectively.

Classifications and acreages of the wetlands are provided in the Aquatic Resources Delineation Report. The aquatic resources reviewed in the Aquatic Resources Delineation Report (Appendix C) consist primarily of depressional “pothole” wetlands within or adjacent to cultivated crop fields. Freshwater emergent wetlands are present in the Power Plant Site and the Route.

10.3.1 Wetlands Impacts and Avoidance, Minimization, and Mitigation Measures

In an Environmental Review Report dated November 7, 2024, SDGFP noted no environmental conflicts for the Project. SDGFP does recommend the following related to wetland disturbance:

- Disturbance to riparian and wetland areas should be kept to a minimum.
- If riparian vegetation is lost, it should be quantified and replaced on-site. Seeding of indigenous species should be accomplished immediately after construction to reduce sediment and erosion.
- A site-specific sediment and erosion control plan should be part of the project.
- A post-construction erosion control plan should be implemented to provide interim control prior to re-establishing permanent vegetative cover on the disturbed site.

On December 17, 2024, MRES requested an approved jurisdictional determination (JD) of field delineated wetlands within the Power Plant Site. The approved JD, provided on February 13, 2025, noted that Wetlands 1, 3, and 4 were non-jurisdictional and Wetland 2 is jurisdictional (Appendix A).

A coordination meeting with SDDANR was held on January 28, 2025, to discuss state wetland regulations and their application to this Project.

The Power Plant will avoid permanent impacts on wetlands. The Power Plant Site will have approximately 5.49 acres of temporary impacts. Wetlands 3 and 4 will be restored from farmed wetlands to natural on-site wetlands that have additional water retention capacity and natural vegetation. These wetlands are non-jurisdictional; therefore, a Section 404 permit is not required. Wetland restoration approval will be coordinated with SDDANR during final design.

Currently, the Route will have less than 0.02 acre of permanent impacts on wetlands. The Applicants will analyze structure placement for the transmission line during final design to determine if permanent wetland impacts can be further minimized and avoided. The temporary impact on wetlands is approximately 1.17 acres. These areas are for the construction of the transmission line and are anticipated to return to pre-existing conditions.

11.0 Effect on Terrestrial Ecosystems (ARSD 20:10:22:16)

The following sections describe the existing terrestrial ecosystem—flora and fauna—in the vicinity of the Project, the Project's potential impacts on the terrestrial ecosystem, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts. Terrestrial ecosystem wildlife and vegetation data were identified and gathered through literature searches, federal and State agency reports and consultations, natural resources databases, and site visits.

11.1 Terrestrial Flora

The following sections describe the existing terrestrial flora in the vicinity of and within the Power Plant Site and the Route, the Project's potential effects on vegetation, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

11.1.1 General Vegetation

The Project is within the Northern Glaciated Plains Level III Ecoregion, an area that has transitioned between tallgrass and shortgrass prairie communities and has been largely converted to agricultural use (U.S. Environmental Protection Agency [USEPA] 2013, Bryce et al. 2010). The Project is located within Prairie Coteau (Ecoregion 46k), which is the result of stagnant glacial ice melting beneath a sediment layer. The tightly undulating, hummocky landscape has no drainage pattern; it is perforated with closely spaced semipermanent and seasonal wetlands. A chain of large lakes is present (Bryce et al. 1996).

Based on the USGS National Land Cover Database (NLCD) (USGS 2021), the dominant land cover within the Power Plant Site is cultivated crops (Figure 15). The other noted land cover class categories in the Power Plant Site include herbaceous; developed, open space; emergent herbaceous wetlands; and developed, low intensity (Table 7).

Table 7: Power Plant Site Land Use (NLCD, 2021)

NLCD Cover Class	Area coverage (acres)	Coverage (Percentage)
Cultivated Crops	58.60	82.51
Herbaceous	10.61	14.94
Developed, Open Space	1.49	2.10
Emergent Herbaceous Wetlands	0.28	0.39
Developed, Low Intensity	0.03	0.06
Total	71.02	100

The land cover within the Route is dominated by cultivated crops. The other noted land cover class categories in the Route include herbaceous; emergent herbaceous wetlands; developed, open space; hay/pasture; barren land; developed, low intensity; and developed, medium intensity (Table 8). The cultivated crops, observed from a windshield survey in May 2024, include mainly corn (*Zea mays*) and soybeans (*Glycine max*). Land classified as developed (open space, low intensity, and medium intensity) is due to the presence of local roads and utility infrastructure. Existing agricultural land is discussed further in Section 13.0. Table 8 summarizes the types of land cover crossed by the Route. The existing NLCD land cover types in the vicinity of the Project are depicted in Figure 15.

Table 8. Land Cover Use in the Route (NLCD, 2021)

NLCD Cover Class	Area Coverage (Acres)	Coverage (Percentage)
Cultivated Crops	50.9	60.6
Developed, Open Space	26.4	31.4
Herbaceous	4.8	6.0
Emergent Herbaceous Wetlands	0.3	0.4
Hay/Pasture	0.5	0.6
Barren Land	0.7	0.7
Developed, Low Intensity	0.4	0.5
Developed, Medium Intensity	0.0	0.0
Total	84.0	100

*Slightly higher than 100% due to rounding.

11.1.2 Potentially Undisturbed Grasslands

The SDGFP Environmental Tool was utilized to review undisturbed grasslands and displays the information from Bauman et al. 2014, Bauman et al. 2016, and Bauman et al. 2018. Based on a review of the areas, the potentially undisturbed grasslands present in the vicinity of the Power Plant Site and the Route are shown in Figure 16. No undisturbed grasslands are present within the Power Plant Site. The Route ROW includes approximately 2.12 acres of undisturbed grasslands.

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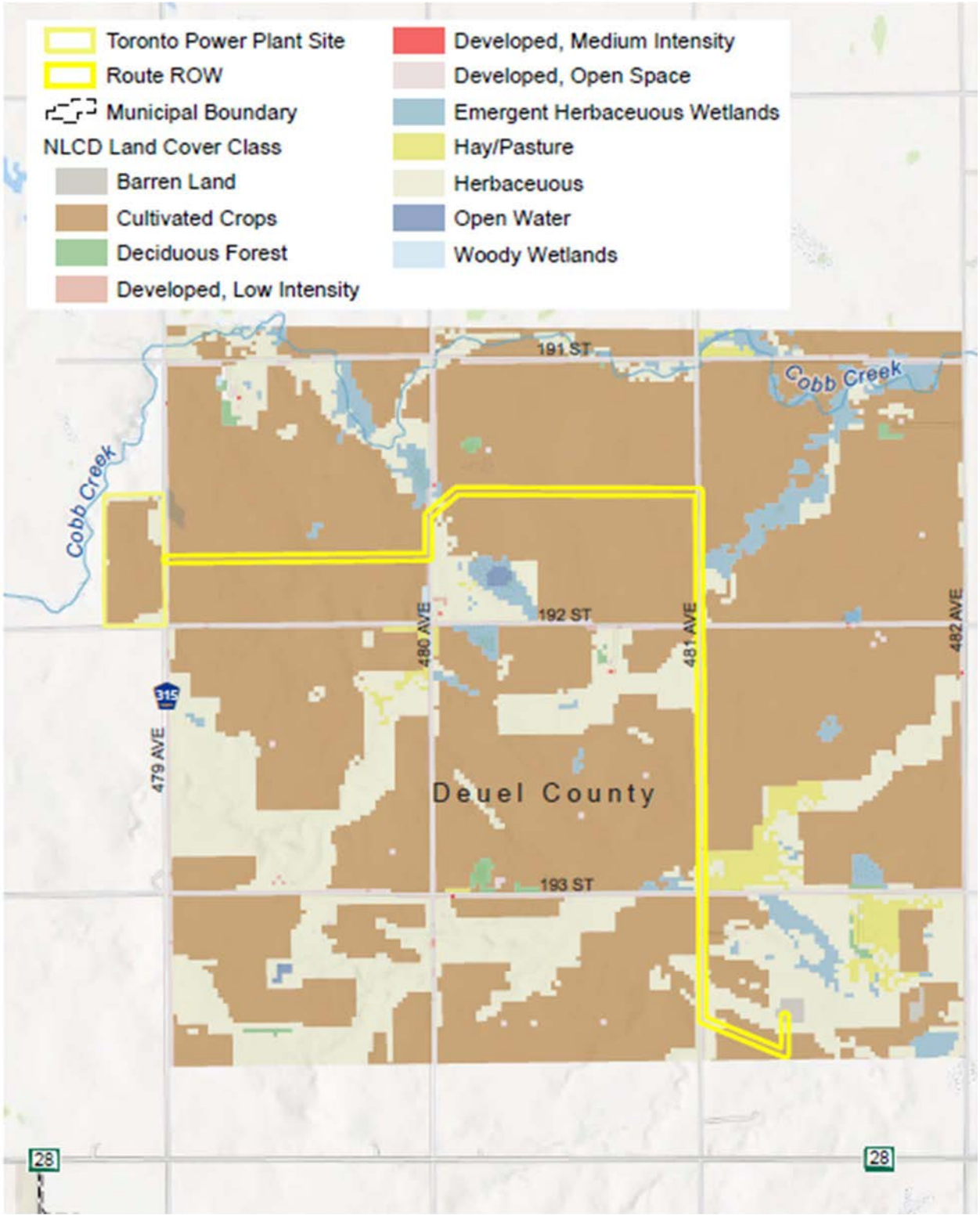

Figure 15. USGS National Landcover Dataset

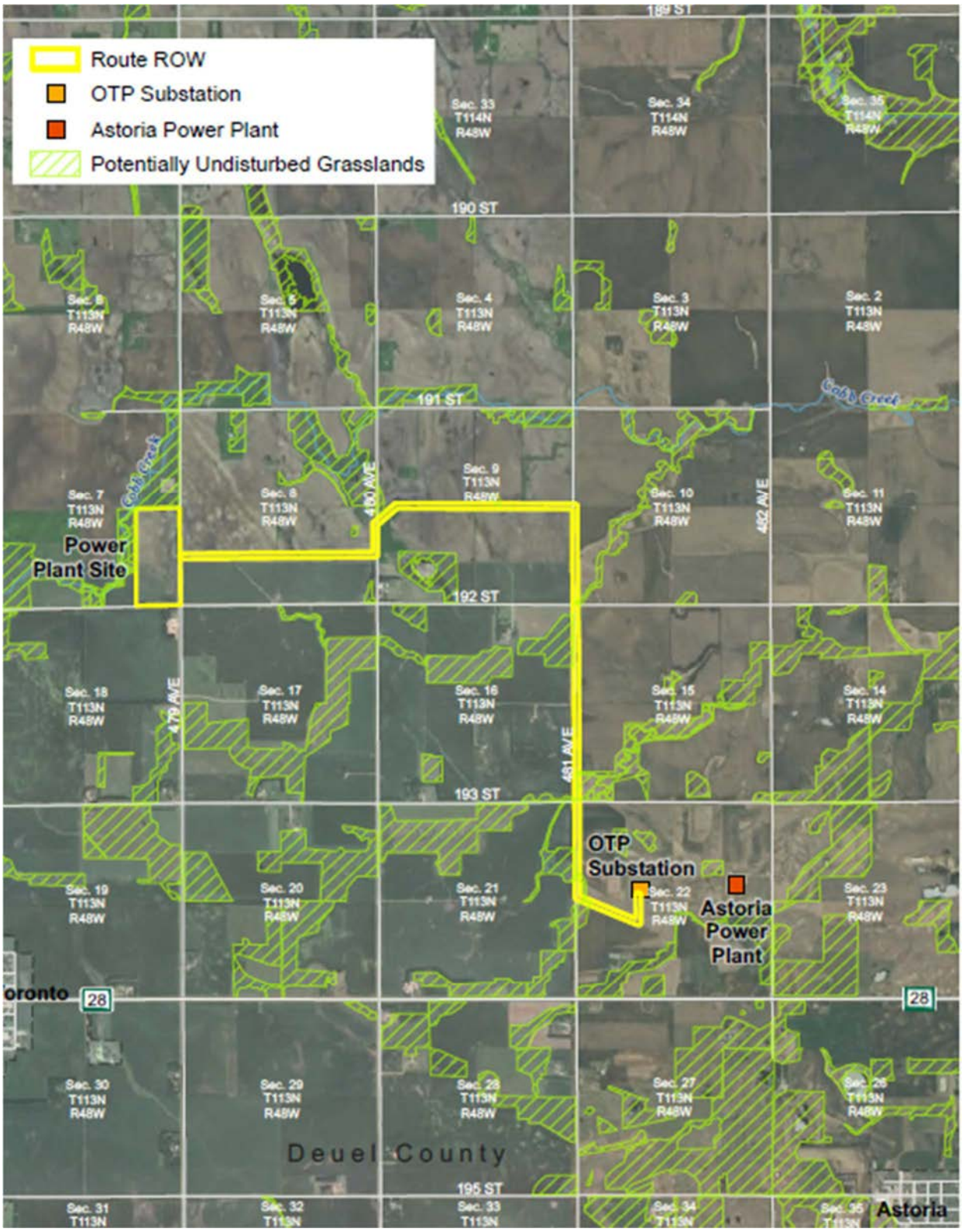

Figure 16. Potentially Undisturbed Grasslands

11.1.3 Federal and State Threatened and Endangered Species

A Threatened and Endangered Species Review has been completed for the Project. The review assessed the potential occurrences of threatened and endangered species and the associated habitats the species may utilize within the Power Plant Site and the Route. No flora species were noted as threatened or endangered (Appendix D; Terracon 2024).

11.1.4 Noxious Weeds

Noxious weeds are regulated by state (SDCL Ch. 38-22) and federal statutes and regulations designed to stop the spread of plants that are detrimental to the environment, crops, livestock, and/or public health. According to SDDANR, six noxious weed species are known to occur and are regulated in Deuel County (Table 9).

Table 9. Noxious Weeds Listed for Deuel County

Common Name	Scientific Name
Musk Thistle	*Carduus nutans*
Plumeless Thistle	*Carduus acanthoides*
Bull Thistle	*Cirsium vulgare*
Yellow Toadflax	*Linaria vulgaris*
Poison Hemlock	*Conium maculatum*
Common Mullein	*Verbascum thapsus*

Source: SDDANR 2024.

11.1.5 Terrestrial Flora Impacts and Avoidance, Minimization and Mitigation Measures

Temporary and permanent impacts on vegetation will occur due to construction of the Project. The Project has been designed to avoid impacts on vegetated areas (i.e. herbaceous land cover category), to the extent practicable.

For the Power Plant Site, it is anticipated that approximately 20 acres of agricultural area will be permanently impacted and 51 acres will be temporarily impacted due to construction of the Power Plant. Permanent impacts on agricultural lands will occur due to the placement of the structures and conversion of the area to the Power Plant Site. Impacts on cultivated lands are not considered impacts on vegetated areas because these lands are frequently disturbed by tilling, planting, and harvesting activities associated with crop production and are considered under Section 13.0. No undisturbed lands are within the Power Plant Site, as documented within the SDGFP Environmental Tool; therefore, the Power Plant will avoid impacts on these lands (Figure 16).

Within the Route, the land cover is identified in Table 8. Within the Route, approximately 0.06 acres of vegetated areas will be permanently impacted, and 31.6 acres will be temporarily impacted due to construction of the Project. Permanent impacts on vegetation will occur due to the placement of the structures. The transmission line will be sited to the extent possible within previously disturbed lands. However, the area has several undisturbed lands; therefore, full avoidance may not be possible for the transmission line (Figure 16). During final design, the undisturbed grasslands will be field verified and avoided if possible. Less than 0.1 acre of permanent impact and 0.53 acre of temporary impact on undisturbed grasslands are anticipated from the transmission line.

Temporary impacts on vegetation will be mitigated through BMPs, such as employing appropriate erosion control measures and reseeding areas disturbed by construction activities, unless otherwise directed by the landowner. SDGFP also noted suggestions for planning and construction that have been and will continue to be incorporated into this Project:

- A site-specific sediment and erosion control plan will be incorporated as part of this Project during construction.
- A post construction erosion control plan will be implemented to provide interim erosion control prior to re-establishing permanent vegetation cover on the disturbed site.
- Disturbance to native vegetation will be kept to a minimum during final design and construction.
- Any disturbed areas will be revegetated using native seed sources. The Applicants will obtain information from NRCS Plant Materials Center in Bismarck, ND, on which native plantings may be best suited.
- Develop a long-term plan for preventing the introduction or establishment of non-native/invasive plants within the Project. Project activities have the potential to result in the spread of noxious weed species. This can result from construction equipment introducing seeds into new areas or erosion or sedimentation due to clearing ground in the construction areas. The spread of noxious weeds will be controlled using weed-free seed mixes and application of herbicides, where allowed, as necessary. A noxious weed control plan will be developed to identify and establish procedures to limit the introduction and spread of noxious and invasive weeds during construction and ongoing operations.

11.2 Terrestrial Fauna

The following sections describe the existing aquatic ecosystems in the vicinity of the Power Plant Site and the Route, the Project's potential effects on terrestrial species, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

A habitat assessment was completed and included a limited, on-site visual assessment for possible species habitat. The visual assessment was conducted September 30 and October 1, 2024. A biologist examined the Power Plant Site and the Route with right-of-entry and from the road ROW where entry was not approved.

11.2.1 Wildlife

A field reconnaissance and desktop review of available information was completed to assess the potential presence of wildlife species and habitats. Section 11.2.2. discusses species of concern, including federally and state-listed animals, significant natural communities, and other species of concern or significant habitats that occur in the vicinity of the Project.

Other wildlife species in the area include white tail deer, coyotes, raccoons, skunks, and many other species common to the area. The species utilize agricultural lands and adjacent vegetation corridors along roadways.

11.2.2 Federal and State-Listed Terrestrial Species

A Threatened and Endangered Species Review Report was completed on April 2, 2025. The review assessed the potential occurrences of threatened and endangered species and associated habitats

that the species may utilize within the Power Plant Site and the Route (Appendix D). Potential threatened and endangered species habitat within the vicinity of the Power Plant Site and the Route is shown in Figure 17.

SDGFP maintains a list of federal and state-listed threatened and endangered species (animal and plants; SDCL Chs. 34A-8 and 34A-8A). In a search conducted on November 7, 2024, the SDGFP Environmental Tool noted that no special status species were documented within the Project vicinity, and no environmental conflicts were detected for the proposed Project.

The USFWS Information for Planning and Consultation (IPaC) tool was completed for the Project on January 21, 2025, and Table 10 displays the species noted. During coordination with USFWS, an additional IPaC was completed on February 20, 2025. Each species noted in the IPaC is discussed further in this section.

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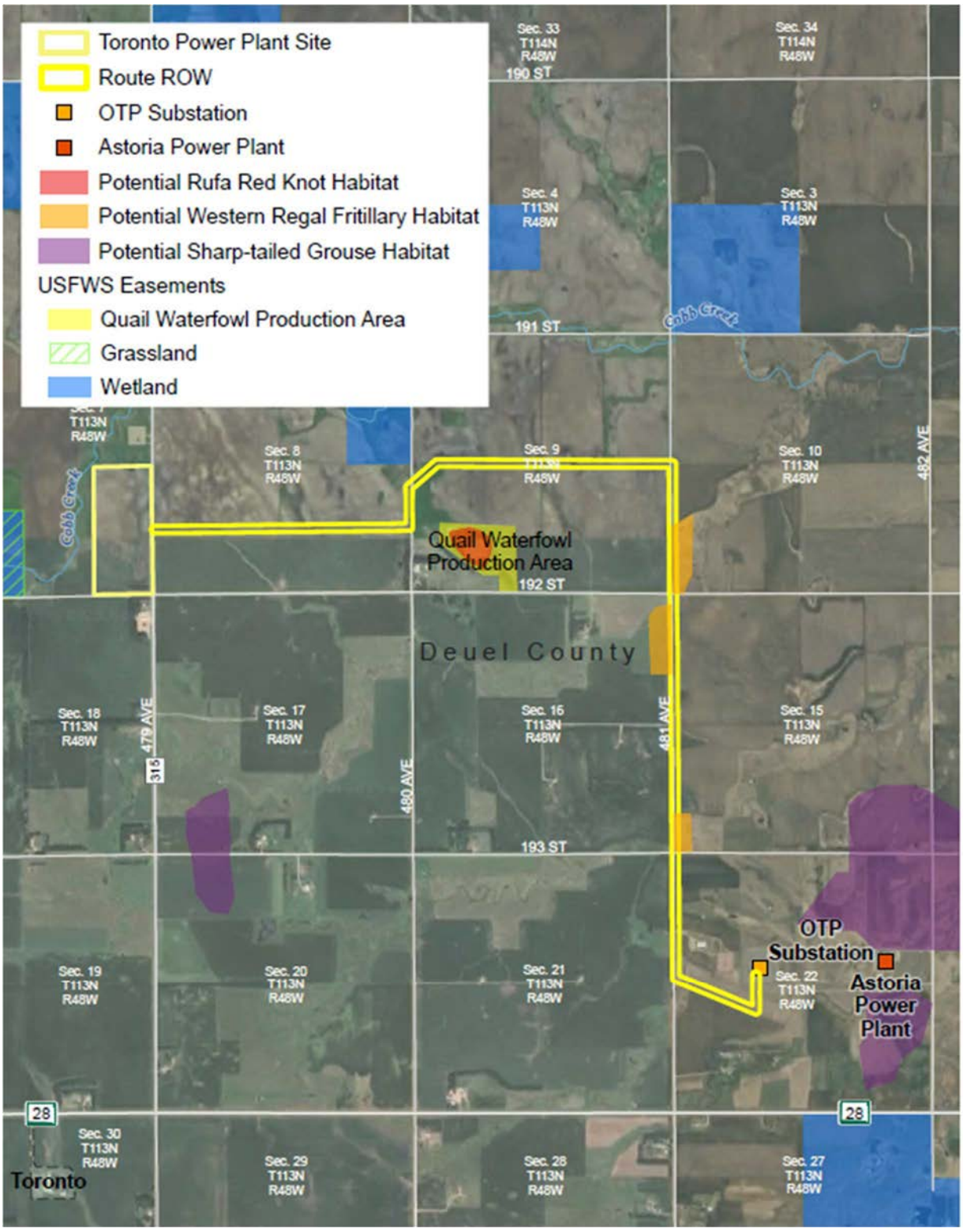


Figure 17. Habitat

Table 10. Federal Threatened and Endangered Terrestrial Species Potentially Occurring within Deuel County

Species	USFWS Status	SDGF&P Status	Habitat Description	Apparent Habitat Findings
Northern Long-eared Bat (*Myotis septentrionalis)*	*Endangered*	*Not Listed*	The NLEB roosts in trees (live or dead) or built structures during the summer. They typically select roosting trees with available cavities, crevices, or bark. In the winter they hibernate in caves and mines (hibernacula).	None
Rufa Red Knot (*Canlidris canutus rufa)*	*Threatened*	*Not Listed*	The Rufa Red Knot in migration and wintering areas are similar in character, coastal marine and estuarine habitats with large areas of exposed intertidal sediments. Use inland saline lakes as stopover habitat in the Northern Great Plains.	Potential stopover areas
Monarch Butterfly (*Danaus plexippus)*	*Proposed Threatened*	*Not Listed*	Habitat is a complex issue for this species. In general, breeding areas are virtually all patches of milkweed in North America and other regions. The critical conservation feature for North American populations is the overwintering habitats, which are certain high-altitude Mexican conifer forests or coastal California conifer forests, or Eucalyptus groves as identified in literature. It appears virtually all North American monarchs overwinter in one of these two areas.	Milkweed patches in grassed areas
Suckley's Cuckoo Bumble Bee (*Bombus suckley*)	*Proposed Endangered*	*Not Listed*	The habitat of the Suckley's Cuckoo Bumble Bee is included in the habitat of the host species, bumble bee, which is open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows.	Open grassy areas
Western Regal Fritillary (*Argynnis idalia occidentalis)*	*Proposed Threatened*	*Not Listed*	The Western Regal Fritillary is virtually restricted to remnant native prairies, including disturbed or somewhat degraded examples and native pastures. These prairies range from xeric to wet, and ideal habitat may be places with abundant violets in both dry and wet microhabitats.	Potential prairie habitats

Source: Terracon 2024; IPaC- February 20, 2025

11.2.2.1 Northern Long-eared Bat

The Northern Long-eared Bat (NLEB) was reclassified by USFWS as endangered under the Endangered Species Act (ESA) on November 29, 2022, with an effective date of March 31, 2023.

The trees present within and near the Power Plant Site and the Route are planted shelterbelts or small clusters less than 10 acres. Both areas are greater than 1,000 feet from any forested/wooded areas. Therefore, no suitable habitat for the NLEB was identified within the Power Plant Site or the Route (Appendix D; Terracon 2024).

11.2.2.2 Rufa Red Knot

The rufa red knot is listed as a threatened species. This is a migratory bird species that uses South Dakota as stopover habitat during its long spring and fall migrations. Often found in coastal settings, the preferred stopover habitat includes sandy or gravely beaches, tidal mudflats, salt marshes, shallow coastal impoundments, and peat banks. This species is known to use inland saline lakes within the Northern Great Plains as stopover habitat (USFWS 2024a).

Rufa red knot nesting range centers in Canada north of the Arctic Circle. The range during the boreal winter is primarily in southern South America. Populations migrate in large flocks northward through the contiguous United States mainly in March to early June and southward mainly in July to August. Breeding takes place in the Arctic, with breeding habitats consisting of elevated and sparsely vegetated ridges or slopes. Increased commercial harvest of horseshoe crabs and a reduction in horseshoe crab populations (the eggs of horseshoe crabs are a critical food resource) are the probable major reason for the rufa red knot decline.

It is unlikely that the rufa red knot would use the potential habitat provided by the Quail WPA, which is adjacent to the Route, as stopover habitat during migration; however, use of the area could occur. See Figure 17 for the identified potential rufa red knot habitat.

11.2.2.3 Monarch Butterfly

The monarch butterfly is listed as a candidate species that is being reviewed under the ESA. Milkweed and flowering plants are needed for monarch butterfly habitat. Milkweed can occur in many areas, ranging from native grasslands to degraded sites, such as road ROW, and may occur in the vicinity of the Project. The monarch butterfly ranges across South Dakota from May through October, potentially occurring wherever its required plant resources exist (SDGFP 2018).

The largest driver of monarch habitat selection is the availability of milkweed plants (Asclepias spp.). Monarchs are attracted to grassland, agricultural fields, roadside ROW, wet meadows, or urban gardens that have the potential to support milkweed and nectar-producing plants utilized in foraging and reproduction. The overall range of this species extends through Central America to northern South America; however, North America represents the largest portion of the monarch butterfly range. In North America, populations of this species are divided into two groups, the western (populations west of the Rocky Mountains) and the eastern (populations east of the Rocky Mountains).

The monarch butterfly was proposed for listing as a threatened species on December 10, 2024. The Power Plant Site and the Route consist primarily of cultivated lands and utility corridors; thus, potential suitable habitat is limited to areas with milkweed interspersed in grassland areas.

11.2.2.4 Suckley's Cuckoo Bumble Bee

The Suckley's cuckoo bumble bee is listed as a proposed endangered species. The potential suitable habitat of the Suckley's cuckoo bumble bee is included in the habitat of the host species, the western bumble bee, which includes open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. This specialized line of bumble bees has lost the ability to collect pollen and to rear their own brood. These bees enter the nests of other bumble bee species, kill or subdues the queen of the colony, and force the worker bees to breed their offspring.

The species is primarily threatened by the decline of their host species, the western bumble bee and the yellow banded bumble bee. Additional threats include pesticide use, habitat loss, pathogens from pollinators, climate change, and competition from non-native bee species. Most of the Project site is located on agricultural cropland. There are 2.12 acres of undisturbed prairie grassland (noted as three parcels in Appendix D) that provide potentially suitable habitat within the Route.

11.2.2.5 Western Regal Fritillary

The western regal fritillary is listed as a proposed threatened species. This species' range is largely within the central region of the United States (including South Dakota). The species is typically found within wet meadows and tallgrass prairies but also will frequent dry, undisturbed prairie areas (USFWS 2024b).

The western regal fritillary is virtually restricted to remnant native prairies, including disturbed or somewhat degraded examples and native pastures. These prairies range from xeric to wet, and ideal habitat may be places with abundant violets in both dry and wet microhabitats. Larvae mostly feed on prairie violet, where adults require nectar and utilize a variety of native and non-native flowers: thistles, various late summer composites, and milkweeds are among those reported.

The species is primarily threatened by small population sizes, natural and unnatural fluctuations, conversion of prairie remnants to farmland, pesticides and herbicides, isolation, and ill-conceived prescribed burning. A majority of the Project site is located on the previous agricultural cropland. There are 4.89 acres of potential western regal fritillary habitat within the Route (Figure 17).

11.2.3 Migratory Birds and Raptors

Various migratory bird and raptor species could inhabit the Power Plant Site and the Route. Land cover in the Power Plant Site and the Route is largely cultivated crops with trees typically located in shelter belts. Shelter belts located adjacent or within the Power Plant Site and the Route provide potential stopover habitat and nesting areas for a variety of avian species.

The USFWS IPaC noted the following migratory bird and raptor species may be within the Project area (Table 11).

Table 11. Potential Migratory Bird and Raptor Species Occurring within the Project Area

Common Name	Scientific Name	Breeding Season
Baird's Sparrow	Centronyx bairdii	Breeds May 20th to August 15th
Bald eagle	Haliaeetus leucocephalus	Breeds October 15th to August 31st
Black Tern	Chlidonias niger surinamenisis	Breeds May 15th to August 20th
Black-billed Cuckoo	Coccyzus erythropthalmus	Breeds May 15th to October 10th
Bobolink	Dolichonyx oryzivorus	Breeds May 20th to July 31st
Chimney Swift	Chaetura pelagica	Breeds March 15th to August 25th
Franklin's Gull	Leucophaeus pipixcan	Breeds May 1st to July 31st

Common Name	Scientific Name	Breeding Season
Grasshopper Sparrow	Ammodramus savannarum perpallidus	Breeds June 1st to August 20th
Henslow's Sparrow	Centronyx henslowii	Breeds May 1st to August 31st
Northern Harrier	Circus hudsonius	Breeds April 1st to September 15th
Pectoral Sandpiper	Calidris melanotos	Breeds elsewhere
Red-headed Woodpecker	Melanerpes erythrocephalus	Breeds May 10th to September 10th
Ruddy Turnstone	Arenaria interpres morinella	Breeds elsewhere
Western Grebe	Aechmophorus occidentalis	Breeds June 1st to August 31st

The SDGFP Environmental Tool was utilized to identify avian species listed as Species of Greatest Conservation Need (SGCN) and state-listed threatened species. The SDGFP response on November 7, 2024, indicated no concerns for the Project (Appendix A), and SDGFP responded that no special status species were documented within the Project vicinity.

11.2.4 Terrestrial Fauna Impacts and Avoidance, Minimization, and Mitigation Measures

The following sections further discuss the potential impacts and avoidance, minimization, and mitigation measures by species grouping or individual species. Aquatic species are discussed further in Section 12.0, Aquatic Ecosystems.

11.2.4.1 Wildlife

Terrestrial species could potentially be impacted at various spatial and temporal scales during the construction and operation of the Project. The Power Plant is proposed within cultivated fields with minimal effect on terrestrial species anticipated. The proposed transmission line Route crosses wetlands and grasslands that can serve as resting areas and foraging areas for waterfowl and other species. There may be daily movements between areas used for roosting, nesting, and foraging, and a new transmission line increases potential for avian collisions during daily and seasonal movements. The Route crosses between a USFWS wetland easement area and Quail WPA, so there is an additional potential for collision in this area. Marking of the transmission line will occur along this section and these markings increase visibility and can reduce the likelihood of avian collisions.

Effects on terrestrial habitats will be minimized by not altering stream channels or drainage patterns, minimizing placement of fill in wetlands, restoration of temporary disturbance areas, and replanting disturbed areas, if necessary, using a seed mix recommended by NRCS or USFWS, unless otherwise agreed to with the landowner. Temporary impacts will also be minimized by utilizing erosion and sedimentation BMPs that minimize or prevent sediment from reaching adjacent waterways and protect topsoil.

11.2.4.2 Federal and State-Listed Terrestrial Species

The SDGFP Environmental Tool noted on January 21, 2025, that no environmental conflicts were detected for the Project. The Project has been sited to avoid or minimize impacts on federally listed species. Each federally listed species noted within the IPaC on January 21, 2025, and February 20, 2025, is further discussed below (Appendix D). Coordination occurred with USFWS,

and their response on February 20, 2025, noted that they have no concerns regarding threatened and endangered species being impacted by the Project. Further discussion for each species is noted below.

Northern Long-eared Bat

Planted shelterbelts within or near the Power Plant Site and the Route occur in small clusters (less than 10 acres) and are not within 1,000 feet of other forested/wooded areas. Any tree clearing activities will occur outside of bat roosting and summer pup rearing periods (April 1–October 31). No further surveys or conservation measures are needed (Appendix D; Terracon 2024).

Rufa Red Knot

Primarily disturbed areas (cultivated crops and linear infrastructure) are not likely to contain habitat suitable for the rufa red knot. Consultation with USFWS determined the Project poses no concerns for this species. No additional surveys or conservation measures are proposed.

Monarch Butterfly

Milkweed and other flowering plants may be present within the Power Plant Site and the Route, including the previously disturbed road ROW and the areas of limited, undisturbed grasslands. USFWS recommended the Route be surveyed for potential monarch habitat and impacts on identified habitat will be avoided or minimized during final design to the extent possible. The Applicants will use a USFWS-recommended seed mix, unless otherwise agreed to with the landowners.

Suckley's Cuckoo Bumble Bee

Based on consultation with USFWS, this species is not currently known to occur in South Dakota. The Project is anticipated to not impact Suckley's cuckoo bumble bee, and no surveys or conservation measures are proposed within the Power Plant Site or the Route.

Western Regal Fritillary

The Western Regal Fritillary relies on intact grasslands with ample nectar sources, primarily including native violet species. Effects on this species would most likely occur in areas of undisturbed grasslands along the Route. The Power Plant Site is comprised of previously disturbed, cultivated lands and is not anticipated to provide suitable habitat. Following consultation with USFWS, it is recommended that work occur within previously disturbed areas, and post construction revegetation efforts include native seed mixes that incorporate violets and forbs. The Applicants will use a USFWS-recommended seed mix, unless otherwise agreed to with the landowner. Due to its proposed status, additional consultation is not required for this species. No surveys or conservation measures are proposed.

11.2.5 Avian Species

There are over 1,000 species of migratory birds. The Power Plant Site and the Route may have habitat that is utilized by migratory bird species that travel through or nest in the area. If trees that have potential to be used by migratory birds are cleared after October 31 and before April 1, no impacts on migratory birds are anticipated to occur. Marking of the transmission line will occur along the section that is adjacent to the Quail WPA. These markings increase visibility and can reduce the likelihood of avian collisions. The loss of potential habitat is not significant as the habitat in the Quail WPA is approximately 800 feet southeast of the closest portion of the Route. There are limited wetland areas for avian use within the Project area. Additionally, the Project will minimize disturbance to potentially undisturbed grasslands that the Route will cross during

construction, to the extent possible, and will avoid placing structures within or immediately adjacent to surface water features.

To address the potential for collisions and electrocution, the Avian Power Line Interaction Committee (APLIC) considerations for overhead powerlines will be incorporated into final design and construction of the transmission line (APLIC and USFWS 2005). The transmission line will be designed in accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006*. Additionally, the Applicants' transmission line design standards provide adequate spacing to minimize the risk of electrocution to large avian species.

11.2.5.1 Eagles and Raptors

Applicants will conduct preconstruction surveys for bald eagle, golden eagle, other raptors, and migratory bird nests along the transmission line Route and record the location of any nests identified using a Global Positioning System (GPS). If a bald eagle or golden eagle nest is identified in the transmission line Route before construction, the Applicants will comply with the Bald and Golden Eagle Protection Act.

11.2.5.2 Sharp-tailed Grouse

Based on the land size impact of the Power Plant Site and the Route and availability of nearby grassland habitat, the Project is not anticipated to impact the sharp-tailed grouse.

12.0 Effect on Aquatic Ecosystems (ARSD 20:10:22:17)

The following sections describe the existing aquatic ecosystems in the vicinity of the Power Plant Site and the Route, the potential effects of the Project on aquatic ecosystems, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

12.1 Existing Aquatic Ecosystems

As discussed in Sections 10.1 and 10.3, the delineation/mapping conducted for the Aquatic Resources Delineation Report identified a total of 6.21 acres of freshwater emergent delineated/mapped wetlands within the Power Plant Site and 24.59 acres within the Route (Figure 12 and Figure 13). Aquatic habitat within the Power Plant Site and the Route includes drainages and unnamed tributaries associated with Cobb Creek and freshwater emergent wetlands (Figure 11). Portions of the habitat have been altered by cultivation and channelization. These water features likely support aquatic biota, including aquatic insects, crustaceans, and mollusks, and possibly small fish and minnows. There are wetlands in the vicinity of the Project that provide habitat for birds, waterfowl, amphibians, reptiles, and small mammals.

Many of the aquatic resources present within the vicinity of the Project support fish populations valued by wildlife and sportsmen. These fisheries can be of high value and produce desirable game species, such as northern pike (*Esox lucius*), walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), and other game fish. SDGFP provides fish stocking reports within select waterbodies throughout the state, including Cobb Creek and Fish Lake, which are the primary sources of aquatic ecosystems in the vicinity of the Power Plant Site and the Route. Cobb Creek was last stocked in 1932 with brook trout (*Salvelinus fontinalis*) fingerlings (SDGFP 2024a). Fish Lake was stocked with northern pike, yellow perch, walleye, black bullhead (*Ameiurus melas*), and bluegill (*Lepomis macrochirus*) from 1927 to 2010 (SDGFP 2024b). From 2010 to 2023, only walleye have been stocked in Fish Lake. SDGFP maintains public access for fishing and other water recreation. There is no public access for fishing within the Power Plant Site or the Route (SDGFP 2024c).

A review of the USFWS IPaC was completed for the Project on January 24, 2025, and February 20, 2025, to identify the federally listed threatened, endangered, and candidate species that have the potential to occur in the vicinity of the Project. According to a review of the USFWS IPaC, there are no federally listed aquatic species protected under the ESA that have the potential to occur in proximity to the Project.

The SDGFP maintains a list of federal and state-listed threatened and endangered species (animal and plants; SDCL Chs. 34A-8 and 34A-8A). The SDGFP Environmental Tool noted on January 21, 2025, that no special status species were documented within the Project vicinity, and no environmental conflicts were detected for the proposed Project.

12.2 Aquatic Ecosystems Impacts and Avoidance, Minimization, and Mitigation Measures

The Project has been designed to avoid and/or minimize impacts on aquatic ecosystems, streams, and other drainage systems to an extent practicable. The Power Plant Site will avoid using permanent fill in the wetlands for the construction of the plant. Wetlands 1 and 2 will be avoided by all Project activities, while Wetlands 3 and 4 will potentially be utilized for surface runoff capture, by minimally grading the two areas (Figure 12 and Figure 13). Refer to Section 10.3 for additional discussion of wetland impacts. For the transmission line, structure placement will avoid wetlands and drainages to the extent possible.

On December 17, 2024, MRES requested an approved jurisdictional determination (JD) of field delineated wetlands within the Power Plant Site from the USACE. The approved JD, provided on February 13, 2025, noted that Wetlands 1, 3, and 4 were non-jurisdictional and Wetland 2 is jurisdictional (Appendix A). The Project will not require a Section 404 permit due to the avoidance of impacting Wetland 2. A desktop or field delineation will be completed for the Route, and coordination will occur with USACE. Refer to Section 10.3 for further discussion of the next steps for wetland considerations within the Route.

Coordination occurred with SDDANR to discuss any applicable wetland regulations for the proposed activities within Wetlands 3 and 4. The Project will increase the water retention capacity of the existing farmed wetlands through minor grading and allow vegetation to be reestablished. In accordance with ARSD Ch. 74:51:01, a Water Restoration or Enhancement permit application will be coordinated with SDDANR during final design of the Project.

A General Permit Authorizing Stormwater Discharges Associated with Construction Activities (General Permit) will be required for the Project. The BMPs described in Sections 10.1.1 and 10.3.1 pertaining to minimizing/mitigating potential impacts on surface waters and wetlands will be applied to the Project.

Surface water use for the Project during construction will be restricted to dust control and foundation construction. This water will be pumped from local surface waters following consultation with applicable resource agencies. No impacts on aquatic ecosystems are anticipated because of water use during Project construction. Since erosion and sediment control BMPs will be in place during Project construction and restoration, as applicable, no impacts on aquatic ecosystems are anticipated from the Project.

13.0 Land Use (ARSD 20:10:22:18)

The following subsections discuss the existing land use, public lands and facilities, noise, aesthetics, and communications systems in the vicinity of the Project; potential impacts; and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts. Existing land use in the vicinity of the Power Plant Site and the Route, using the land use

classifications in ARSD 20:10:22:18, is shown in Figure 15. The land use classifications were noted through site visits, and land cover was noted by utilizing the USGS NLCD.

13.1 Existing Land Use

The land surrounding the Power Plant Site and the Route consists of an agricultural dominated landscape with several smaller communities. To the south of the Project is Toronto, South Dakota, to the southeast is the Astoria Station Power Plant, and to the north are Brandt and Clear Lake, South Dakota. The Project is located entirely outside of any municipal limits (Table 7). Rural residences are located in the Proposed Siting Area shown in Figure 1.

The land within the Power Plant Site has historically been used for row crop rotation (Table 7). No residences are present within the Power Plant Site. The land cover data confirms cultivated crops dominate the area, with some areas of herbaceous and wetland cover present as well. The herbaceous cover refers mainly to the area in the southeast corner of the Power Plant Site, shown in Figure 15.

The following land use classifications from ARSD 20:10:22:18(1) occur in the vicinity of the Route (Figure 15):

- Haylands
- Land used primarily for row and non-row crops in rotation
- Pasturelands and rangelands
- Public, commercial, and institutional use
- Rural residences and farmsteads, family farms, and ranches
- Undisturbed native grasslands

These land uses are confirmed by the NLCD, which shows cultivated crops, hayland, pastureland, herbaceous emergent wetlands, and small areas of developed land. Land classified as developed is due to the presence of local roads, wind turbines, and other utility infrastructure. The land within the Route is mainly privately owned with one public area, Quail WPA. There are no residences and businesses within the Route ROW. There are 5 residences and 3 businesses (Rogness Truck & Equipment, Crooks Collision, and Premier Seed Solutions) within the Transmission Study Area (Figure 6).

13.2 Local Land Use Controls (ARSD 20:10:22:19)

Land use in Deuel County is regulated by the Deuel County Compiled Zoning Ordinances. The current Comprehensive Land Use Plan for Deuel County (Comprehensive Plan) has no provisions for power plants, high-volage transmission lines, or power lines (Deuel County Planning Commission 2004).

A new ordinance was adopted in October 2024 after the completion of the Deuel County Comprehensive Plan. Section 1247, Public and Private Utilities, within the Deuel County Zoning Ordinances applies to the Project and requires:

- All public and private utilities shall meet or exceed standards and regulations of the South Dakota State Statutes and any other agency or federal or state government with the authority to regulate Public and Private Utilities.

- Prior to commencement of construction, the permittees shall identify all state, county or township "haul roads" that will be used for the Public and Private Utilities project and shall notify the state, county, or township governing body having jurisdiction over the roads to determine if the haul roads identified are acceptable. The governmental body shall be given adequate time to inspect the haul roads prior to use. Where practical, existing roadways shall be used for all activities associated with the Public and Private Utilities. Where practical, all-weather roads shall be used to deliver cement or concrete and all other heavy components to and from the Public and Private Utilities sites.

- The permittees shall, prior to the use of approved haul roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over approved haul roads for construction of the Public and Private Utilities for the maintenance and repair of the haul roads that will be subject to extra wear and tear due to transportation of equipment and Public and Private Utilities components. The permittees shall notify the County of such arrangements upon request of the County.

- Noise level for residences shall not exceed 45 A-weighted decibels (dBA), average A-Weighted Sound pressure. The noise level is to be measured at the perimeter of existing residences. The property owners have the right to waive the respective setback requirements; the waiver needs to be in writing and filed with the Zoning Office.

The Project is located primarily in agricultural districts within Deuel County and, more specifically, within the Scandinavia Township. The Applicants are in the process of coordinating with Deuel County regarding the process to change the zoning classification of the Power Plant Site from Agricultural to Commercial/Industrial. The Applicants plan to apply for a change in zoning classification to accommodate the proposed Power Plant Site in Fall/Winter 2025 or Spring 2026. Following a change in zoning classification, the Applicants will apply for a Conditional Use Permit (CUP) for Public and Private Utilities. Additionally, for the Project's electrical transmission components located within properties that are zoned as agricultural, the Applicants will separately apply for a CUP for Essential Services. Applicants will also secure a building permit from Deuel County for the Project prior to commencing construction.

13.3 Noise Analysis

To consider the noise analysis for the Project, pre-construction sound studies to quantify existing ambient sound levels were completed for the Project (Appendix E). Within and directly adjacent to the Power Plant Site and the Route, there are several sound generating facilities present, including the Astoria Station Power Plant, wind turbines, wind turbine maintenance shop, and farming equipment. The baseline sound within the vicinity of the Power Plant Site will have all these sound generating facilities already present and contributing to the baseline.

The pre-construction baseline sound study was completed over a 16-day period in October 2024 to characterize the existing acoustic environment within the vicinity of the Power Plant Site at noise sensitive receptors, as further described in Appendix E. Daytime (7 am to 10 pm) and nighttime (10 pm to 7 am) sound levels were measured at six sound monitoring locations. The results of the pre-construction baseline sound study show that the average hourly existing background sound level at the residences nearest to the Power Plant Site ranged from 31 to 41 dBA. The study also found that the measured sound levels at the monitoring sites increased with wind speed. Based on results of the sound measurement survey, the average existing background sound level at residences nearest to the Power Plant Site is 36 dBA. The pre-construction baseline

sound study was used in noise modeling to aid in identifying mitigation measures that will be used during detail design to ensure the Project complies with the County noise ordinance at the nearest residences. Refer to Appendix E for noise mitigation measures detailed within the noise modeling report.

13.4 Land Use Impacts and Avoidance, Minimization, and Mitigation Measures

13.4.1 Existing Land Use

Construction of the Project will result in the permanent conversion of approximately 20 acres of land from existing farmland use into use for the proposed Power Plant Site. The remainder of the site (51 acres) may be temporarily affected during construction. Following construction, areas subject to temporary disturbance will be revegetated or returned to agricultural use. Agricultural impacts are discussed further in Section 17.3.

For the transmission line, Table 8 displays the land cover within a 500-foot-wide corridor of the Route. The Route is compatible with, and will have minimal impacts on, the existing land use. Crop production on some portions of agricultural lands may be temporarily interrupted for one growing season, depending on the timing and duration of construction. In cultivated cropland areas, the Applicants will attempt to conduct construction before crops are planted or following harvest, if possible. The Applicants will compensate landowners for impacts on crops resulting from the construction, operation, and maintenance of the Project, including soil compaction that might result from these activities. If there are drain tiles, the Applicants will work with landowners on identifying those systems, and if impacted, will continue to coordinate with landowners on final structure locations to minimize potential impacts on existing farming and other agricultural uses.

There are no occupied homes or businesses within the Power Plant Site or the Route. There will be no displacement of residences or businesses due to construction and operation of the Project.

Construction of the Project will result in the conversion of a very small amount of land (0.06 acre) from existing agricultural land to use for transmission line structures. Approximately 30.5 acres will be temporarily impacted by construction of the Project within the Route, including laydown areas and temporary access for construction equipment to get to the proposed transmission structure locations. Less than 0.02 acre of agricultural land will be permanently impacted for the placement of the transmission line structures. Following construction, areas subject to temporary disturbance will be revegetated to pre-construction land uses, to the extent practicable and in accordance with landowner agreements. Agricultural impacts are discussed further in Section 17.3.

13.4.2 Displacement and Effects on Rural Life and Farming

The Project will not directly displace any people or residences. However, the transmission line may have some effects on farming due to the placement of structures in or near cultivated land. It is the goal of the Applicants to work with the landowners to place transmission line structures in locations that avoid or minimize potential impacts on normal agricultural practices, such as planting, spraying, or harvesting.

Traffic is expected to increase during the construction phase of the Project and will have a temporary effect on rural life and residences in the area. The permanent traffic impacts of the proposed Power Plant will result in a slight increase in traffic along nearby roads and residences with the addition of an estimated four to six operational employees.

13.4.3 Noise Effects

During operation, the Project will meet Deuel County's noise ordinance requirements, adopted in 2024. The ordinance states that noise levels at residences shall not exceed 45 dBA. The noise level is to be measured at the perimeter of existing residences after the Project has started commercial operations to confirm compliance with the Deuel County noise ordinance. Noise modeling has been completed to identify noise mitigation measures that will be required to ensure compliance with the Deuel County noise ordinance requirements. Refer to Appendix E for noise mitigation measures detailed within the noise modeling report. During final design, these mitigation measures will be implemented into the plant's design to ensure the Power Plant Site does not exceed 45 dBA at residences.

Generally, noise levels during the operation and maintenance of transmission lines are minimal. Transmission conductors can emit a noise that is called corona under certain conditions. Corona noise has a crackling sound and is due to corona discharges—the small amount of electricity ionizing the moist air near the conductors. The level of noise depends on conductor conditions, voltage level, and weather conditions. During heavy rain, the background noise level of the rain is usually greater than the noise from the transmission line. As a result, people do not normally hear noise from a transmission line during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, noise from transmission lines (corona noise) may be more perceivable because it is not being masked by the sounds of rain, but the noise levels produced are equal to approximately household background levels. During dry weather, noise from transmission lines is barely perceptible by humans. Several other factors, including conductor voltage, shape and diameter, and surface irregularities such as scratches, nicks, dust, or water drops can affect a conductor's electrical surface gradient and, therefore, its corona noise emission levels. The way conductors are arranged on the support poles also affects corona noise production.

Transformers, inverters, and switchgears are among the primary noise sources of a switchyard or substation. Noise emissions from this equipment have a tonal character that sometimes sounds like a hum or a buzz, that corresponds to the frequency of the alternating current. Transformer or shunt reactor "hum" is the dominant noise source at switchyards or substations if such equipment exists. At switchyards or substations without transformers or shunt reactors, only infrequent noise sources would exist such as the opening and closing of circuit breakers or the operation of an emergency generator. Typical switchyard or substation design is such that noise produced by these sources does not reach beyond the switchyard or substation property. Noise typical from substations blends into background noise levels with increasing distance away from the source without being too intrusive off-site.

Construction noise will be temporary with the main source of noise coming from heavy construction equipment operation and increased vehicle traffic due to construction personnel transporting materials to and from the Power Plant Site and Route. Residents living near the Project may be temporarily affected by noise generated from construction activities. Construction noise levels will be minimized by ensuring that construction equipment is equipped with mufflers that are in good working order. Construction activities will mostly occur during daytime hours. If helicopters are used during construction, their use would be limited to conductor installation for the transmission line. The Applicants will coordinate with nearby landowners to address potential concerns regarding impacts to residences or livestock related to helicopter noise.

14.0 Water Quality (ARSD 20:10:22:20)

The following sections describe the existing water quality in the vicinity of the Project, the potential effects of the proposed Project on water quality, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

14.1 Existing Water Quality

The existing water quality for groundwater and surface water resources are discussed in Section 10.0.

14.2 Water Quality Impacts and Avoidance, Minimization, and Mitigation Measures

Construction of the Project will require coverage under the SDDANR General Permit for Stormwater Discharges Associated with Construction Activities, which requires preparation of an SWPPP. The SWPPP will identify potential sources of stormwater pollution and specify BMPs to control erosion and sedimentation. The SWPPP will be prepared before the start of construction. The Applicants will implement BMPs during construction of the Project to protect topsoil and adjacent water resources and minimize soil erosion. Construction practices will be completed in accordance with the National Pollutant Discharge Elimination System (NPDES) permit requirements. BMPs may include:

- Containment of stockpiled material away from stream banks and shorelines, as required by the NPDES permit.
- Stockpiling and respreading topsoil at laydown areas and/or permitted areas.
- Reseeding and revegetating disturbed areas, as required by the NPDES permit.
- Implementing erosion and sediment controls, as required by the NPDES permit, such as use of silt fencing, straw wattles, erosion control blankets, revegetation, or other features and methods designed to control stormwater runoff and mitigate erosion and sedimentation.
- Minimizing stormwater generated by construction by following BMPs.

Because erosion and sediment controls will be in place for construction of the Project, impacts on water quality are expected to be negligible.

15.0 Air Quality (ARSD 20:10:22:21)

The following sections describe the existing air quality conditions in the vicinity of the Project, the potential effects of the Project on air quality, and measures that have been or will be utilized to avoid, minimize, and/or mitigate potential impacts.

15.1 Existing Air Quality

Under the Clean Air Act, USEPA is required to set National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants, including particulate matter, ozone, sulfur dioxide (SO_2), nitrogen dioxide, carbon monoxide (CO), and lead. USEPA designates areas as meeting NAAQS (attainment) or not meeting standards (nonattainment), while states are required to develop plans to attain and maintain standards or to design specific plans to attain standards for designated nonattainment areas (42 United States Code §7401). The entire area of South Dakota is in attainment for the NAAQS (USEPA 2024). The nearest ambient air quality monitoring site is located in Watertown, South Dakota, approximately 37 miles northwest of the Project, which monitors for particulate matter and ozone. The primary emission sources that exist in the vicinity of the Project include agricultural-related equipment and vehicles traveling along roads and other industrial uses, such as the Astoria Station Power Plant and Tatanka Wind Farm.

15.2 Air Quality Impacts and Avoidance, Minimization, and Mitigation Measures

During construction, fugitive dust emissions will temporarily increase due to equipment vehicle traffic in the vicinity of the Project as well as transmission line ROW clearing activities. Additionally, there will be short-term emissions from construction vehicles and equipment on-site. The concentration of pollutants during construction will be greatest near the proposed Power Plant Site and the Route but will decrease rapidly with distance from the proposed Power Plant Site and the Route. Increased air quality effects caused by dust or vehicle emissions will be short-term, limited to the time of construction, and will not result in any NAAQS exceedances for criteria pollutants.

General mitigation measures will include the implementation of BMPs throughout construction to suppress fugitive dust emissions. BMPs used during construction may include watering unpaved roads and loose gravel areas, implementing spray-on amendments (e.g., calcium chloride), staging construction activities to limit soil disturbance, limiting construction traffic speeds, and other applicable measures as necessary. Upon completion of construction activities, measures will be taken to revegetate disturbed areas (outside of areas that will return to active cultivation) to permanently stabilize soil and prevent further fugitive dust emissions.

The operation of the Project will result in air emissions of particulate matter smaller than 10 microns (PM10), particulate matter smaller than 2.5 microns (PM2.5), nitrogen oxides (NO_x), CO, SO_2, volatile organic compounds (VOC), greenhouse gases, and hazardous air pollutants (HAPs). The operation of the Project is not expected to negatively impact the NAAQS attainment status of Deuel County. An air construction permit will be submitted for the Project per the requirements of ARSD Ch. 74:36:20. Air pollution control through limiting the hours of operation and equipment selection will keep emissions of regulated air pollutants below the major source threshold of the SDDANR Prevention of Significant Deterioration (PSD) program. The proposed facility will comply with all air quality standards and USEPA and SDDANR regulations.

16.0 Time Schedule (ARSD 20:10:22:22)

A preliminary permitting and construction schedule for the Project is provided in Table 12

Table 12. Estimated Permitting and Construction Schedule

Milestone	Estimated Start Date	Estimated End Date
Commission Notice of Intent	Q2 2024	Q2 2024
Commission Facility Permit Process	Q3 2025	Q3 2026
Acquisition of Land Rights	Q3 2024	Q4 2026
Contract for Combustion Turbine-Generator Sets	Q3 2025	Q3 2028
Detailed Power Plant and Transmission Line Design	Q4 2025	Q2 2027
Other Federal, State and Local Permits	Q3 2025	Q2 2027
Construction	Q2 2027	Q4 2029
Combustion Turbine-Generator Set Delivery to Site	Q3 2028	
Project Commercial Operation Date	Q4 2029	

17.0 Community Impact (ARSD 20:10:22:23)

Pursuant to SDCL § 49-41B-6, the Commission designated a Local Review Committee to assess the extent of the social and economic effects of the Project, assess the surrounding area's ability to absorb those effects, and arrive at recommendations and mitigation measures deemed necessary. This local review incorporates the areas of the Power Plant Site and the Route. To evaluate the community impact of the Project and to aid the Local Review Committee, the Applicants retained the First District Association of Local Governments (First District) to conduct a Social and Economic Impact Study. The study analyzes the effects of the Project on the following parameters: Housing Supplies; Educational Facilities; Water Supply and Distribution; Wastewater and Solid Waste Treatment; Law Enforcement; Transportation; Fire protection; Health; and Government. These impacts are described in Section 17.1 through 17.12.

The Toronto Power Plant Social and Economic Impact Study (First District 2025) concluded that the construction and operation of the Project will have no significant impact on the social and economic environment within the Commission-defined 6-mile affected area after informational meetings are held, dust mitigation measures have been adopted, haul road agreements are executed, and all required permits are secured. Refer to Figure 1 for the 6-mile affected area.

The 6-Mile Affected Area, defined by the Commission for the analysis, is a 6-mile radius around the Power Plant Site, as shown in Figure 1**Error! Reference source not found.**, and is referred to as the Affected Area for the remainder of this application. The Affected Area also encompasses the proposed transmission line and OTP substation.

17.1 Community Resources Impacts and Avoidance, Minimization, and Mitigation Measures

The Project is expected to create both short- and long-term positive impacts on the local economy. The Project will provide benefits to the region by providing additional generation capacity, improving electric system reliability, and increasing access to low-cost energy. Impacts on social and economic resources from construction activities will be short-term during the construction phase. Local businesses, such as restaurants, grocery stores, hotels, and gas stations, may see increased business during this phase from construction-related workers. Local industrial businesses, including aggregate and cement suppliers, may also benefit from the construction of the Project.

17.1.1 Housing Supplies

There are three municipalities within the Affected Area: Astoria, Brandt, and Toronto. The Affected Area for housing supplies was expanded to include Deuel County and Brookings County, since it is not likely that all the estimated 200 construction workers needed during peak construction and four to six operational employees will seek housing only within a 6-mile radius. The cities of Brookings (2020 population of 22,056) and Watertown (2020 population of 21,482) will be within commuting distance of the Project site. The City of Brookings is located approximately 29 miles to the southeast, and the City of Watertown is located approximately 39 miles northwest of the Project site. There are 21 vacant housing units within 6 miles of the Power Plant Site, and 4,245 vacant housing units within a 50-mile commuting distance from the Power Plant Site. This existing supply of available housing is more than sufficient to meet the needs of the Project workforce (First District 2025).

Camper hook-ups in the vicinity include:

- Crooks Family Site (north of Astoria) – 7 hook-ups

- Hulsebus Family Site (south of Astoria) – 6 hook-ups
- Clear Lake (in town) – 18 sites
- Clear Lake (at the lake) – 24 sites
- Estelline (in town) – 6 sites
- Toronto (in town) – 4 sites

The recent construction of the Astoria Sation Power Plant, completed in 2021, was utilized as a similar project to estimate impacts from the Project. One of the only noticeable impacts associated with the construction of the Astoria Station Power Plant was a temporary increase in the demand for camper hook-ups. Many of the Astoria Station Power Plant construction workers used campers for housing during Project construction, which resulted in camper hook-up sites within commuting distance of the construction site being occupied for extended periods.

A portion of the Project's construction workers are likely to occupy camper hook-up sites for the duration of construction, creating a short-term increase in the demand for camper hook-up sites during the anticipated 24-month construction timeframe.

17.1.2 Land Values

The land value of the Power Plant Site will increase substantially. Land values outside of the Power Plant Site are not expected to increase or decrease noticeably. Adjacent properties are agricultural in nature and use and are located within an agricultural zoning district. Land values of properties located near the Astoria Station Power Plant, a similar development approximately 3 miles to the southeast and completed in 2021, have not been adversely impacted as a result of the construction and operation of that project (First District 2025).

17.1.3 Labor Market

The labor force was analyzed within five counties: Deuel, Brookings, Codington, Grant, and Hamlin. The combined August 2024 labor force in those five counties was 46,606 workers, including 2,265 construction, extraction, and maintenance workers. Unemployment rates were relatively low, ranging from 1.5 percent in Hamlin County to 2.4 percent in Brookings County (First District 2025). Given that a portion of the workforce will be hired from outside the Affected Area, including specialists and supervisory personnel, the number of workers in the area is sufficient to meet the Project needs during construction and operation.

17.1.4 Health Facilities

No healthcare facilities are located within the Affected Area (First District 2025). Operational or construction workers needing medical attention will be able to seek assistance from one of the following nearby medical facilities (First District 2025):

- Hendricks Community Hospital Association in Hendricks, MN
    - Located approximately 16 miles southeast of the Power Plant Site
- Sanford Clear Lake Community Health in Clear Lake, SD
    - Located approximately 13 miles northwest of the Power Plant Site

- Brookings Health System in Brookings, SD
    - Located approximately 28 miles southwest of the Power Plant Site

The following ambulance services could provide emergency medical attention to operational or construction workers requiring emergency medical attention (First District 2025):

- Deuel County Ambulance in Clear Lake, SD
- Hendricks Ambulance in Hendricks, MN

17.1.5 Energy

Energy use was analyzed using data from the U.S. Energy Information Administration (First District 2025). The Project will increase the area's capacity to generate electricity while not producing emissions in quantities that would negatively impact on the environment. The Power Plant Site was chosen for the location of the existing natural gas pipeline and the location of electrical transmission infrastructure. Finding a more ideal site for the development of a natural-gas-fired power plant would be difficult.

17.1.6 Sewage and Water

As discussed in Section 10.2.1, potable water will come from a Brookings-Deuel Rural Water System connection and process water for operation of the Power Plant will be sourced from two permanent wells within the Power Plant Site. Both water sources are anticipated to have sufficient water supply and distributional capacities to meet the projected water usage needs.

The cities of Brookings and Watertown are both within commuting distance of the Project. A conservative estimate of 200 planned construction workers will move into one of these areas along with their families. Using an average family size of 2.53 persons and an estimate of 100 gallons of water used per person per day (USGS 2019), an increase of 506 new inhabitants will temporarily increase water usage by about 1,518,000 gallons per month. Increases in residential water usage will result in corresponding increases in wastewater volumes. These increases will not adversely affect municipal wastewater collection or treatment systems in Brookings (2020 Census Population 23,377) or Watertown (2020 Census Population 22,655).

During operation of the Project, wastewater generated from process and potable water is anticipated to be treated entirely on-site. Any off-site disposal of wastewater will be completed in accordance with state law. If needed, the following wastewater treatment and collection permits for the Project may be issued by SDDANR:

- NPDES/Surface Water Discharge
- Stormwater Discharge

No process water is anticipated to be discharged from the site. The on-site wastewater septic system that incorporates a drain field will treat water that originates from sinks, toilets, etc., and no process water will flow into this system. Any process water collected or used in cooling systems would be evaporated or transported and disposed of at a properly permitted facility in accordance with state and federal laws. The Project design includes a stormwater pond to collect rainfall, snowmelt, and other stormwater from the areas that are paved or impacted by the Power Plant. The Applicants will acquire a Stormwater Discharge Permit prior to the construction of the pond. Should stormwater accumulate in the pond, the water will be sampled, analyzed, and discharged

according to the permit's parameters. The Applicants will obtain applicable wastewater permits from SDDANR before construction begins.

17.1.7 Solid Waste Management Facilities

Waste generated during construction activities will be disposed of at a properly permitted municipal solid waste landfill site in accordance with state law and local ordinances. Construction waste disposal will be the responsibility of the prime construction contractor responsible for construction of the Project under the direction of the Applicants.

Waste generated during operational activities will be disposed of at a properly permitted solid waste landfill site in accordance with state law and local ordinances. Arrangements for operational waste collection and disposal will be the responsibility of the Applicants and will likely be handled by a private waste collection and disposal company.

Although there are no properly permitted waste sites within the Affected Area, two municipal solid waste landfill sites are located nearby. The Brookings Landfill and the Watertown Landfill are both within approximately 30 minutes of the Project.

The Project is not anticipated to have impacts on solid waste management facilities.

17.1.8 Fire Protection

Three fire departments, located in Astoria, Brandt and Toronto, provide fire protection services within the Affected Area. All three are staffed exclusively by volunteer firefighters and have a total of 60 volunteer firefighters (First District 2025). All three fire departments have mutual aid agreements that allow neighboring firefighters to respond to events should the need arise.

The South Dakota State Fire Marshal's Office suggested that local fire departments should be contacted by the Applicants prior to the start of construction to provide early education and response training and to determine the capacities of each department to respond to a fire call at the Project site.

Cory Borg, Deuel County Emergency Manager and Sheriff, echoed the recommendations of the State Fire Marshal to provide early education and response training to impacted fire departments and to determine the capacities of each department to respond to a fire call at the Project site. Mr. Borg also expressed the importance of effective communication between the Applicants and the fire departments during planning, construction, and operation of the Project. He noted that none of the area fire departments should experience any significant adverse impacts as a result of the Project.

The Applicants propose to provide annual response training to mitigate potential impacts on fire protection, as recommended by First District. In addition, the Power Plant design includes a water tank on-site for fire suppression. The sizing of the fire protection/water tank will be per NFPA 850 and will include a minimum 2-hour water supply for all the following:

- Largest fixed fire suppression demand
- Hydrant hose stream demand
- Incidental water usage for non-fire protection purposes.

This tank has been purposely sited within the Power Plant Site but outside of the fencing so that the excess water will always be available to local fire departments' usage. for any fire in the area.

17.1.9 Law Enforcement

Two law enforcement agencies, the Brookings County Sheriff Department and the Deuel County Sheriff Department, are located within the Affected Area and were contacted by First District to provide comment on the Project. The Brookings County Sheriff Department employs 17 full- and part-time law enforcement officers, and the Deuel County Sheriff Department employs 6 officers (First District 2025).

Neither law enforcement agency anticipated any significant adverse impacts resulting from the construction or operation of the Project. The Applicants will hold informational meetings with local law enforcement agencies prior to construction. These meetings will familiarize law enforcement personnel with the Project and will facilitate communications between all parties.

17.1.10 Recreational Facilities

Recreational facilities are located in the cities of Astoria, Brandt, Clear Lake, Estelline, and Toronto. These facilities include picnic tables, playground equipment, and restrooms; lighted softball complexes; and tennis courts. The Project will not result in a long-term impact on recreational facilities (First District 2025).

17.1.11 Schools

The Affected Area contains three school districts: Deubrook School District 19-4, Deuel School District 05-6, and Estelline School District 28-2.

The pre-kindergarten through 12th grade enrollment in Deubrook School District 19-4 in Brookings County was 423 students in Fall 2022. Deuel School District 05-6 enrolled 544 students, and Estelline School District 28-2 enrolled 274 students in Fall 2022.

The projected construction labor force peak will include the addition of approximately 200 new workers within the Affected Area. However, many workers do not move their families to the site of temporary jobs. The nearby school districts experienced no significant increase in enrollment during construction of the nearby Astoria Station Power Plant. An operational labor force of 4–6 new workers would result in a maximum addition of approximately 3 new students following the construction phase and at the beginning of the operational phase. The projected addition of new students to the surrounding educational facilities is based on the assumed parameter of 0.53 children per household.

The Project is not anticipated to have impacts on schools in the Affected Area.

17.1.12 Other Community and Government Facilities or Services

The Power Plant Site is located outside of any municipal boundaries. The Applicants will obtain applicable permits from Deuel County and townships. Construction of the Project will comply with local ordinances. The Applicants will execute a haul road agreement with Deuel County and townships to ensure that the roads impacted by Project construction are returned to a condition that meets or exceeds the condition of the impacted roads before the start of construction. In addition, the Applicants will execute haul road agreements, including oversize and overweight permits, with Brookings County and Deuel County if any of the construction materials needed to construct the Project that are offloaded from rail and trucked to the Project site meet or exceed the requirements of the impacted counties.

17.2 Property and Other Taxes

17.2.1 Existing Conditions

According to the Toronto Power Plant Social and Economic Impact Study, land values within the platted property improved by the Project will increase, while land values outside of the Power Plant Site are not expected to increase or decrease noticeably (First District 2025). Prior studies found that transmission lines do not substantially affect the value of adjoining or abutting property. Jackson and Pitts (2010) prepared a literature review of empirical studies conducted between 1964 and 2009. Based on the studies reviewed, while having some inconsistencies in their detailed results, there were generally small effects (2 to 9 percent reduction in property value) or no effect on sales price due to the presence of electric transmission lines. Where an effect was detected, this effect generally dissipated with time and distance.

17.2.2 Property and Other Taxes Impacts and Avoidance, Minimization, and Mitigation Measures

Long-term beneficial impacts from the Project will include beneficial impacts on the local tax base in the form of revenues from property taxes paid by the Applicants. The amount of property taxes generated from the Project will be based on the cost of the Project. Based on a total capital cost of around $378 million, the Project is estimated to generate more than $1 million in direct economic benefits annually to taxing authorities in South Dakota. The proposed construction and operational phases of the Project will add to the tax base. The incremental costs to governments in the area, which can be associated with the construction and operation of the Power Plant and transmission line, will be more than offset by the revenues generated.

The construction of the Project will result in an increased total taxable valuation, and tax rates automatically adjust to prevent exceeding the increase defined in state law. This will result in property tax rates stabilizing for other landowners within the taxable boundaries of the Project (First District 2025).

17.3 Agricultural Production and Uses

17.3.1 Existing Conditions

The land surrounding the Power Plant Site and the Route consists of an agricultural dominated landscape with several smaller communities. To the south of the Power Plant Site is Toronto, South Dakota; to the southeast is the Astoria Station Power Plant; and to the north are Brandt and Clear Lake, South Dakota. The Project is located in Deuel County and is entirely outside of any municipal limits.

Land use in Deuel County, South Dakota, is approximately 72 percent agricultural land, 22 percent grassland/pasture, and the remaining percentage is composed of developed land, wetlands, forest, and open water areas (USDA 2022). There are 253,106 acres of farmland within Deuel County. The top producing products in 2022 were soybeans and corn, with additional crops of forage (hay/haylage), corn for silage, and wheat. Cattle, for beef and milk production purposes, are the predominant livestock (USDA 2022). Total market value of farm products sold in Deuel County in 2022 was $232,408,000 (USDA 2022).

17.3.2 Agricultural Production and Use Impacts and Avoidance, Minimization, and Mitigation Measures

Construction of the Power Plant will permanently remove approximately 20 acres of land from agricultural production and use. A small area totaling less than 1 acre, including the foundation of each transmission structure, will also be permanently taken out of agricultural production.

After reviewing the impacts of the Project, NRCS replied on February 11, 2025, that the Project will have no impact on prime farmland or farmland of statewide importance.

For the transmission line, the Project will temporarily use cropland and grassland/pasture within the Project ROW and adjacent areas to facilitate equipment movement (construction access roads) and structure laydown pads. These activities will remove land from productivity during the duration of construction, displace livestock (if present), or result in a delay or loss of crop production. Landowners will be compensated for any crop damage that occurs during construction. The Applicants will also work with landowners once a route is finalized to coordinate the need for early crop harvest and compensate landowners for any crop losses. If livestock are present in the Project construction areas, fencing or cattle guards will be placed where necessary to prevent livestock from entering the construction area. Once construction is completed, agricultural activities may resume within the proposed transmission ROW between structures.

Areas disturbed during construction will be repaired and restored to preconstruction contours, to the extent practicable, so that surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation (outside of cultivated areas, provide for proper drainage, and prevent erosion). Construction laydown areas and temporary transmission line travel paths will be restored per the landowner agreement.

17.4 Population, Income, Occupational Distribution and Community Cohesion

17.4.1 Existing Conditions

Population, income, and unemployment data for Deuel County, South Dakota, are provided in Table 13.

Table 13. Socioeconomic Characteristics of Deuel County

	Deuel County	South Dakota
2023 Population	4,354	919,318
2023 Median Household Income ($)	79,556	72,421
Population Below Poverty Level (%)	9.2	11.8
Percent Minority (%)	3.4	15.8
Language other than English spoken at home, percent of persons age 5 years+, 2019-2023	4.9	6.7
Unemployment Rate, November 2024 (%)	1.6	1.7

Source: U.S. Census Bureau 2024a, South Dakota Department of Labor and Regulation 2024.

The distribution of industries in which the civilian employed population 16 years and over in Deuel County worked in 2023 was (U.S. Census Bureau 2024b):

- Manufacturing: 19.7 percent
- Educational service, and health care and social assistance: 17.7 percent
- Farming, forestry, fishing and hunting, and mining: 15.6 percent
- Retail trade: 8.4 percent
- Construction: 7.4 percent

- Transportation and warehousing and utilities: 6.4 percent
- All others: 24.8 percent

The occupations of the civilian employed population 16 years and over in Deuel County in 2023 were (U.S. Census Bureau 2024b):

- Management, business, science, and arts occupations: 811
- Production, transportation, and material moving occupations: 435
- Sales and office occupations: 323
- Service occupations: 276
- Natural resources, construction, and maintenance occupations: 274

One measure of community cohesion is home ownership. The 2023 homeownership rate in Deuel County was 80.6 percent, higher than the rate of 69.8 percent for the state of South Dakota (U.S. Census Bureau 2024c). Another measure of community cohesion is the length of time residents have occupied their current housing unit. In 2023, 7.4 percent of Deuel County householders had moved into their housing unit in Deuel County in 2021 or later, whereas 26.5 percent of South Dakota householders had moved into their housing unit in 2021 or later (U.S. Census Bureau 2024c).

17.4.2 Population, Income, Occupational Distribution, and Community Cohesion Impacts and Avoidance, Minimization, and Mitigation Measures

Construction and operation of the Project will not result in a long-term change in the population size or demographics of Deuel County. A brief decrease in the unemployment rates in the Project area and increase in incomes are anticipated due to the Applicants hiring local workers for construction and increased demand for local goods and services. Due to the relatively small size of the construction workforce (200 workers at peak) compared to the existing population and workforce, impacts on population and employment during construction of the Project will be short-term and minor. Construction and operation of the Project is not anticipated to affect the local distribution of jobs or occupations in the community. The arrival of construction personnel to the area will likely result in a short-term increase in the need for temporary housing, but any effects on community cohesion will be short-term and minor. The operation of the Toronto Power Plant may result in long-term or permanent relocation of four to six individuals and their families to the area.

17.5 Transportation Facilities

A Transportation Study was completed in October 2024 to identify the existing transportation resources in the vicinity and the effects of the Project (Appendix F). The Toronto Power Plant Social and Economic Impact Study utilized the transportation study for further discussion of Project effects (First District 2025).

17.5.1 Existing Conditions

The Power Plant Site and the proposed Route ROW are readily accessible from existing roads. The transportation study concluded that construction- and operational-related traffic will travel to the

site primarily using SD Highway 28, gravel roads maintained by Scandinavia Township, and Deuel County roads. No roads maintained by Brookings County are likely to be affected by the Project (Appendix F).

17.5.1.1 SD Highway 28

Approximately 12 miles of SD Highway 28, from just west of the intersection of SD Highway 15 and SD Highway 28 to the border of South Dakota and Minnesota, falls within the Affected Area. Shipments trucked to the Project site are expected to travel on SD Highway 28 prior to entering the road network maintained by Scandinavia Township.

SD Highway 28 is 26 feet in width, except for approximately 0.5 mile of surface that is 54 feet wide, located within the corporate boundaries of Toronto. SD Highway 28 is surfaced with 6--inch--thick bituminous asphalt. There is one bridge with no restricted weight on SD Highway 28 within the Affected Area.

17.5.1.2 SD Highway 15

Approximately 7 miles of SD Highway 15, from the intersection of SD Highway 15 and SD Highway 28 then north 2 miles, falls within the Affected Area. No construction shipments trucked to the Power Plant Site and Route are anticipated to travel over SD Highway 15. Construction and operational workers may utilize SD Highway 15 to access the Power Plant Site and Route.

SD Highway 15 is 24 feet wide with a 6.8-inch-thick bituminous surface. There are no bridges on SD Highway 15 within the Affected Area.

17.5.1.3 Deuel County Roads

Approximately 2.5 miles of the Deuel County road system may see the greatest increase in usage because of the Project. The county road on 479th Avenue from SD Highway 28 north approximately 2.5 miles is likely to be used as the primary route for construction and operational workers to access the Project site. There are no bridges on this Deuel County road.

17.5.1.4 Scandinavia Township Roads

Approximately 3 miles of the township road system may see an increase in usage because of the Project. 192nd Street from SD Highway 15 east to 479th Avenue may be used by construction workers as a route to get to and from the Power Plant Site and the Route. This stretch of 192nd Street includes 2 miles located in Blom Township and 1 mile located in Scandinavia Township. There are no bridges on these township roads.

17.5.1.5 Airports

The closest commercial airport, the Brookings Regional Airport, is approximately 22 miles from the Project. No known private airstrips are located near the Power Plant Site.

17.5.2 Transportation Facilities Impacts and Avoidance, Minimization, and Mitigation Measures

The Toronto Power Plant Social and Economic Impact Study concluded that the impact of construction traffic will be addressed in permits issued by the South Dakota Department of Transportation (SDDOT) and by haul road agreements issued by Deuel County and Scandinavia Township (Appendices F and G). The greatest impact from construction traffic will be experienced on Deuel County roads because they are not designed for transporting the heavy construction equipment that will occur during the construction of the Project. This issue will be addressed in

the haul road agreements and will require pre- and post-construction inspections to be completed to determine what must be done to improve haul roads prior to construction and what must be done to return haul roads to preconstruction conditions.

The Toronto Power Plant Social and Economic Impact Study concluded that the impact of operational traffic from the expected four to six operational employees will be minimal. The Applicants and their contractor will execute haul road agreements with Deuel County and Scandinavia Township prior to beginning construction. The haul road agreements will identify haul roads, determine the condition of haul roads prior to construction, and set forth the responsibilities to make or compensate the County or Township for road-related improvements or to restore roadbeds and appurtenances to the condition they were in prior to the start of construction.

During the public meeting, residents noted their children play within their yards and expressed concerns for safety during construction due to the increased traffic on these rural roadways. To make the residents aware of the times that construction traffic will increase, the Applicants will send out letters notifying residences of the start of construction and the timeline of the construction.

The Applicants will take appropriate action to prevent dust concerns during construction on the township and County roads by implementing measures that include applying water, calcium chloride, magnesium chloride, or another type of dust suppressant.

The Applicants will obtain FAA Determinations of No Hazard (Form 7460-1, Notices of Proposed Construction or Alteration) prior to construction of structures, as needed. The Applicants will also comply with any applicable requirements for pre- and post-construction FAA submittals (Form 7460-2).

17.6 Landmarks and Cultural Resources

SDCL § 1-19A-11.1 requires that state agencies or political subdivisions of the State, or any instrumentality thereof (i.e., county, municipality) may not undertake any project that will encroach upon, damage, or destroy any historic property included in the National Register of Historic Places (NRHP) or state registers until the SDSHPO has been given notice and an opportunity to investigate and comment on the proposed Project. Any permits required by the state, county, or municipalities, including a Facility Permit, will invoke this law.

ARSD 20:10:22:23 states that an application for a Facility Permit shall include a forecast of the impact on landmarks and cultural resources of historic, religious, archaeological, scenic, natural, or other cultural significance.

17.6.1 Existing Conditions

A record search was completed on August 23, 2024, through a request to the State Archeological Research Center. The results identified the previously completed surveys within the Power Plant Site and Transmission Line Study Area. Figure 18 displays the areas that have been previously surveyed.

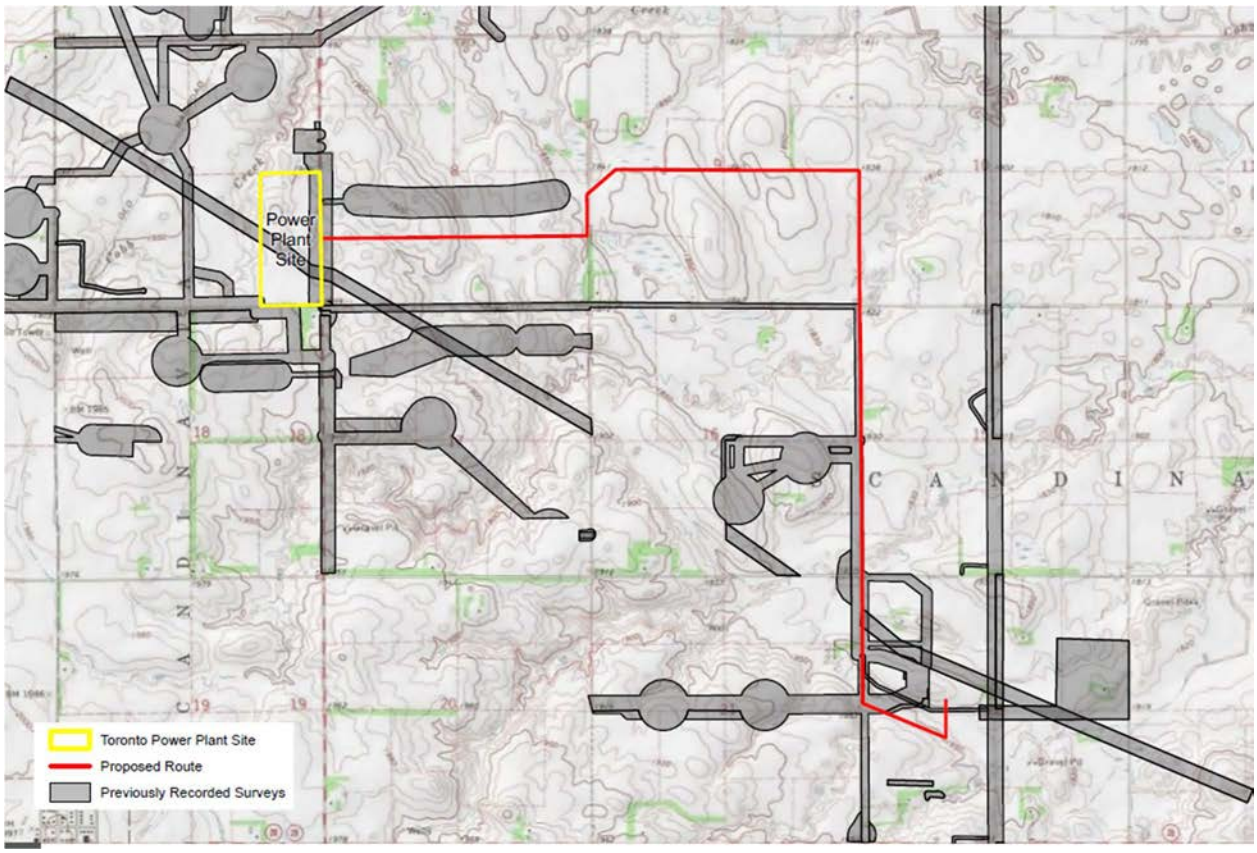


Figure 18. Previously Recorded Sites and Surveys

No National Historic Landmarks have been designated in Deuel County (National Park Service 2025). A Level III Cultural Resources Survey was completed at the Power Plant Site on November 21 and 22, 2024 and on April 14, 2025, by Augustana Archeological Laboratory (Augustana). This survey identified two potential cultural sites. Augustana also conducted a viewshed analysis within a one-mile-radius of the Project area. Within this range, two unevaluated Native American lithic scatter sites fall within the viewshed.

Initial coordination for the Project occurred with the Tribes. The list of Tribes to coordinate with was identified through coordination with SDSHPO. Letters and emails were sent to the identified Tribes on May 31, 2024. Flandreau Santee Sioux Tribe and Northern Arapaho Tribe both responded with interest in providing information and consulting on the Project (refer to Appendix B). For the completion of the Level III Cultural Resources Survey, MRES invited both tribes to join. Flandreau Santee Sioux Tribe completed a Traditional Cultural Property Survey concurrently with the Level III survey and determined that the Project site has "no cultural, material, and/or human remains in this area that will be affected by the proposed Project. At this time no historic properties were identified by us in this area" (Appendix B).

17.6.2 Landmarks and Cultural Resources Impact and Avoidance, Minimization, and Mitigation Measures

After evaluating the two potential cultural sites, Augustana recommends that both sites be considered not eligible for the National Register of Historic Places (NRHP)-listing. Further coordination of these sites will occur with SDSHPO to determine next steps, if any. The Native American lithic scatters within the viewshed have not undergone formal evaluation for NRHP eligibility. Aboveground infrastructure associated with the proposed Project has the potential to affect the viewshed of the Native American lithic scatters.

A Level III Cultural Resources Survey will be completed for the transmission line Route and access roads once the final Route has been determined and right of entry has been obtained. Project infrastructure will be sited to avoid sites determined eligible for the NRHP during final design of the Power Plant and Route. If a site is not able to be avoided, further coordination will occur with SDSHPO to determine next steps.

An unanticipated discovery plan will be developed, which will be followed during construction if potential cultural resources or human remains are encountered. Once prepared, the plan will be submitted to SDSHPO for review.

18.0 Employment Estimates (ARSD 20:10:22:24)

Construction of the Project is estimated to take approximately 24 months, starting in Spring of 2027. Commercial operation is expected to begin before the end of 2029. Employment estimates show that construction of the Project will employ approximately 200 construction workers. Most positions needed during construction of the Project will be contracted and are expected to include, but are not limited to: project management, project assistant, safety, structure hauling, structure framing and setting, linemen, civil foundation installation, quality assurance/quality control, construction project management, inspections, design, concrete truck drivers, and an environmental manager. Additional positions expected to be involved in the construction related to the Power Plant are anticipated to be more of a balanced blend of Applicants' employees and contracted positions that include but are not limited to project management, electrical technicians, inspections, construction, design, construction management, and safety.

Most of the positions will require specialized skills and expertise. Specialized labor may need to come from other areas of South Dakota or from other states, as the relatively short duration of construction makes special training of local or regional labor impracticable. The contractor, who will be responsible for determining employment needs for the construction, may develop plans for utilizing and training the existing South Dakota labor market for the specialized positions depending on the adequacy of the local manpower to meet the temporary labor positions arising from construction of the Project.

The estimated number of construction jobs by classification and annual employment expenditures during construction are included in Table 14. Operational staff are anticipated to include four to six full-time employees to operate the Power Plant and potentially serve as a regional hub to support other WMMPA assets in the region.

Table 14. Anticipated Construction Jobs and Employment Expenditures for the Project

Job Classification	Number of Employees	Estimated Annual Salary
Applicants		
Project Manager	1	$130,000
Project Assistant/Safety Coordinator	1	$95,000
Contracted		
Construction Project Manager	1	$130,000
Safety Professional	2	$110,000
Hauling Structure Workers	4	$110,000
Frame Structure Workers	6	$110,000

Job Classification		Number of Employees	Estimated Annual Salary
Structure Setting Workers	6	$115,000	
Linemen Workers	18	$125,000	
Civil Foundations Workers	24	$120,000	
On-site Civil Workers	6	$105,000	
Off Site Roadway Workers	4	$95,000	
QA/QC Manager	1	$125,000	
QA/QC Inspector	3	$120,000	
Project Assistant	1	$65,000	
Crane Operators	4	$120,000	
Concrete Truck Drivers	10	$80,000	
Environmental Manager	1	$110,000	

19.0 Future Additions and Modifications (ARSD 20:10:22:25)

The Applicants have laid out the Power Plant Site to allow room to mirror the building containing the four turbine-generator sets to be located on the other side of the office facilities for future development. This would effectively double the generation capability of the Project. Additional permitting would be required if future generation equipment were to be added.

20.0 Nature of the Proposed Energy Conversion Facility (ARSD 20:10:22:26)

A general description of the major components of the proposed Project is provided in Section 1.1 above. The proposed life of the combustion turbines is approximately 30 years, and the life of the facilities is anticipated to be approximately 60 years. The Project will operate the four combustion turbines in a simple cycle configuration to provide peaking capacity for the MISO transmission system. The Project is expected to operate 20 to 40 percent of the time, with an estimated 10 to 20 percent of its total energy capability being generated.

Simple-cycle combustion turbines range in design and power output, as well as being classified into three different groups: aero-derivative, frame, and industrial turbines. Aero-derivative turbines are adapted from the aviation industry, they are generally smaller, have quick starting capabilities, and a modular construction. These units are typically smaller than frame units in terms of physical size and power generation. Frame machines are typically large units and utilize lower pressure ratios to generate large amounts of power. Industrial turbines have similarities to the aero-derivative and frame units. They balance efficiency, weight, and durability to maintain operational flexibility and durability. The Project proposes to use industrial units to reach 145 MW.

The power output from CTs typically decreases with increasing temperature and increases with decreasing temperature. To alleviate this problem, an inlet chilling system can be used to reduce ambient air down to a lower temperature. This will allow the CT to operate over a wide range of temperatures without being severely curtailed. The inlet chilling system utilized by the Project will decrease the inlet temperature to 45-50°F resulting in a maximum output of 36.25 MW per

CT or 145 MW for the Power Plant allowing for the full range of power output regardless of ambient conditions.

Major components for the CT will include the inlet air system (inlet filters, chilling coils, and a silencer), the air compressor section, a dry-low NOx combustor, a gas producer turbine, a power turbine, an exhaust transition duct and stack, and a totally enclosed water air cooled generator (TEWAC). Ambient air is pulled through the air inlet system, which consists of the inlet filters, inlet chillers, and a silencer, before entering the compressor section of the CT. The air is compressed via the air compressor section, a multi-stage axial compressor, before being directed to the dry-low NOx combustor. The combustor utilizes lean air-fuel mixtures to maintain stable combustion while minimizing NOx formation temperatures. The hot gas then passes through the gas producer turbine which drives the air compressor section. The gas then passes to the power turbine, which drives the generator through a gearbox. The gas then passes through the exhaust system, which includes a silencer, and a gas duct transition before exiting the stack to the atmosphere.

Additional major equipment for the Power Plant will include three generator step-up transformers (GSU), two high-voltage circuit breakers, and a mechanical chiller system. Each GSU will be tied to two CTs, which will step up the 13.8kV generator voltage to the 345-kV transmission voltage. Each GSU will connect to the switchyard via a high-voltage circuit breaker, capable of isolating the GSU in the case of a fault on the transmission system. The mechanical chiller system will produce the chilled water used by the inlet chilling coils of the CT. The chilled water is produced via refrigeration cycle, which removes the heat from the chilled water stream and transfers it to a condenser water loop that will flow through a cooling system to transfer the heat to the atmosphere.

The materials flowing into the Power Plant will be water, air, natural gas, and fuel oil. Water use for the facility is discussed in Section 10.2.1. The use of natural gas and fuel oil is discussed in Section 20.2 below. The CTs will include an inlet air filter system that will remove airborne dust and an exhaust stack.

The materials flowing out of the Power Plant include stormwater runoff and wastewater generated from process and potable water (discussed further in Sections 10.1.1, 14.2, and 17.1.6 above).

The procedures proposed by the Applicants to avoid or ameliorate the possibility that discharges, emissions, or solid waste would constitute a public nuisance or endanger public health and safety; human, animal, or plant life; or recreational facilities, are described throughout this application. A summary of avoidance, minimization, and mitigation measures is provided in Section 24.1 below.

The following sections further discuss the nature of the proposed Power Plant.

20.1 Products to be Produced (ARSD 20:10:22:27)

The Power Plant will produce electricity that will be provided to the regional energy market. The Power Plant is expected to generate approximately 145 MW of power during periods of high energy demand, typically when regional wind and solar generation are not available. The average annual generation will be highly dependent upon the regional renewable energy generation and the development of local transmission facilities to move the energy in and out of the region. The maximum annual generation will be limited to a plant capacity factor of 40%, or around 520,000 MWh of energy. No by-products are expected to be produced by the Power Plant.

20.2 Fuel Type Used (ARSD 20:10:22:28), Proposed Primary and Secondary Fuel Sources and Transportation (ARSD 20:10:22:29)

The Power Plant will use natural gas from a pipe connection (less than 450 feet of new piping) to the NBP, located along the southwest side of the Power Plant Site (Figure 2).

NBP has a gas flow capacity of around 2.5 billion cubic feet (BCF) per day. During the off season (April through October), the flow is around 1.3 BCF per day. During the winter months (November through March), the average flow is around 1.9 BCF per day. The NBP currently is not short of capacity and has adequate capability to provide natural gas for the Project. NBP has a long history of dependable supply and has had only a few interruptions over the past few decades. Thus, it is expected that the Project will very rarely have a need to operate on the backup fuel oil. If a need arises where the Project will have to use the backup fuel oil, it will typically be during the winter months during extreme cold weather (i.e., during January or February).

Fuel oil will be used as a backup fuel source when natural gas is not available. Fuel oil will be brought in by truck from Watertown, South Dakota, or potentially Sioux Falls, South Dakota. The fuel oil will be trucked to the Power Plant Site at a rate of approximately one tanker truck (8,800 gallons) per hour while the plant is operating at full load on fuel oil.

20.3 Alternate Energy Resources (ARSD 20:10:22:30)

MRES considered several different energy resource types in its most recent IRP. Resource options included various thermal generation, renewable generation, and battery storage resources. The Applicants believe that natural gas generation is the most cost-effective option to meet their generation needs. As discussed in Section 3.0, adding more natural gas generation to the Applicants' energy mix furthers MRES's ability to provide reliable, cost-effective, and long-term energy services to its members and their electric consumers.

20.4 Solid or Radioactive Waste (ARSD 20:10:22:31)

Coordination with SDDANR Waste Management Program occurred with an overview meeting held on July 11, 2024, to discuss the potential solid waste permits needed for the Project. SDDANR noted the topics that follow for consideration, and these will be further coordinated as the Project moves into further design phases.

Waste generated during construction activities will be disposed of at a properly permitted waste site in accordance with state law and local ordinances. Construction waste disposal will be the responsibility of the prime construction contractor, under the direction of the Applicants.

Waste generated during operational activities will be disposed of at a properly permitted waste site in accordance with state law and local ordinances. Operational waste disposal will be the responsibility of the Applicants and will likely be handled by a private waste collection and disposal company. The use of natural gas to create electricity does not produce substantial amounts of solid waste. The Power Plant will not produce substantial amounts of solid waste since it will primarily use natural gas during operation (First District 2025).

Two municipal solid waste landfill sites are located nearby. The Brookings Landfill and Watertown Landfill are both within approximately 30 minutes of the Project.

No radioactive waste will be produced from the construction or operation of the Project.

20.5 Estimate of Expected Efficiency (ARSD 20:10:22:32)

Expected efficiency is based on the manufacturer's specifications for the energy conversion facility equipment. Plant efficiency is a measure of electrical power generated per unit of fuel heat input, as compared with the theoretical maximum energy conversion. Data used to calculate efficiency included the natural gas supply lower heating value (LHV), the power output of the gensets, and the fuel flow rate. Expected Net Efficiency is based on assumed plant auxiliary loads and power losses estimated at 5 percent of gross output, which accounts for the gensets and the plant auxiliary systems, as well as GSU and transmission losses. Based on these assumptions, Table 15 presents an estimated average of expected efficiencies from combustion turbine suppliers.

Table 15. Estimate of Expected Efficiency

Expected Net Efficiency	Supplier Average
Net Heat Rate, LHV, 59°F, PF=1.0 (Btu/kWh)	8,656
Net Efficiency, LHV 59°F, PF=1.0 (%)	39.4

Based on Annual Average Ambient Conditions

20.6 Decommissioning (ARSD 20:10:22:33)

At the time of decommissioning, all aspects of the Project will be evaluated for other site compatible beneficial uses. In the absence of such uses, all or parts of the Project will be decommissioned based on applicable regulatory requirements that are in effect at that time. The following decommissioning measures describe what is expected to be done should portions of the Project be rendered unusable for future purposes.

- **Equipment and Building** – All equipment and buildings will be removed from the Power Plant Site and along the Route, either offered for recycling or disposed of in accordance with applicable regulations. All structures will be cleared below the finished intended ground level. Concrete elements will be buried on-site, as allowed.

- **Fuel Tanks and Fuel Pipelines** – A Phase 1 Environmental Site Assessment will be conducted prior to the demolition of fuel tanks and pipelines to determine whether any fuel-related spills or leakage has occurred on the site. If required, soil sampling may occur to determine whether any levels exceed the action level for cleanup in accordance with applicable regulations at the time of decommissioning. The underground gas and water pipelines will be capped below grade and abandoned in place.

- **Other Miscellaneous Materials** – As appropriate, buildings will be inventoried, and all hazardous and non-hazardous materials will be removed to other operating facilities for use, disposed of in landfills permitted to accept such waste, or destroyed in permitted facilities.

The ground surface will return to its original quality and usage, to the extent practicable. The estimated cost of decommissioning is $8 million (2024-dollar estimate).

21.0 Transmission Facility Layout and Construction (ARSD 20:10:22:34)

21.1 Route Clearing

During the land rights process, individual property owners will be advised as to the construction schedule, needed access to the Route ROW, and any vegetation clearing required for the Project. To maintain compliance with North American Electric Reliability Corporation (NERC) reliability

standards, the Route ROW will be cleared of vegetation as necessary to construct, operate, and maintain the Project. Clear cutting (the removal of trees, brush, and other low-growing vegetation) will occur within the Route ROW, along temporary construction access roads, and at structure erection sites. Trees that could present a danger to the safe operation of the Project will also be removed or pruned to ensure safety and maximize reliability, including trees outside of the Route ROW that could hit the transmission line should they fall. Disposal of timber, treetops, limbs, and slash will comply with state law and local ordinances. Wood from the clearing operation will be offered to the landowner or removed from the site.

21.2 Transmission Construction Procedures

Construction will begin after necessary federal, state, and local approvals are obtained and land rights are acquired for the areas where construction will take place. Construction timing will depend on permit conditions, environmental timing restrictions, material deliveries, weather conditions, and available workforce. If temporary removal or relocation of fences is necessary, installation of temporary or permanent gates will be coordinated with the landowner. The Applicants will work with landowners to minimize disruptions during construction to the extent possible. Transmission line structure sites are typically selected in areas that will require minimal grading. Therefore, structure sites with slopes of 10 percent or less will typically not be graded or leveled, unless it is necessary to provide a reasonably level area for construction access and activities. At sites with more than 10 percent slope, working areas may require grading or fill to develop a suitable work area. Following construction, the site will be graded as close as possible to its original condition; all imported fill, temporary culverts, and road approaches will be removed from the site; and disturbed areas will be returned to pre-disturbance conditions, to the extent practicable and in accordance with landowner agreements. Typical construction equipment consists of tree removal equipment, mowers, cranes, backhoes, digger-derrick line trucks, track-mounted drill rigs, dump trucks, front end loaders, bucket trucks, bulldozers, flatbed trucks, pickup trucks, concrete trucks, helicopters, and various construction trailers. Many types of excavation equipment are set on wheel- or track-driven vehicles. Structures are transported on tractor-trailer trucks, usually in three sections before they are assembled at each structure location.

The Applicants will employ standard construction and mitigation practices that have been developed from experience as well as using industry-specific BMPs. For the concrete foundations, concrete will be delivered to the structure site with a concrete truck. Foundations are typically allowed to cure for approximately three weeks prior to erecting the structures. Applicants will work with landowners to dispose of desirable soil spoils or it will be hauled offsite to an approved area. An SWPPP will be prepared to identify potential sources of stormwater pollution and specify BMPs to control erosion and sedimentation and minimize negative impacts caused by stormwater discharges from the Project. The steel structures and associated components are transported from the construction staging areas to the structure assembly areas by truck. The structure assembly areas are typically located within the Project ROW adjacent to the structure site. At each structure assembly area, the steel structure sections are assembled, the davit arms are attached, and insulators and other hardware are attached while the steel structure is on the ground. The fully assembled structure is then set on top of the concrete foundation by use of a crane. Sufficient rights to use temporary laydown areas that are outside of the Project ROW that are needed for construction will be secured from affected landowners through lease and/or easement agreements. After the structures have been erected, conductors are installed by establishing pulling/tensioning setup areas. Conductor stringing operations require access to each structure to secure the conductor to the insulators or optical ground wire (OPGW) or shield wire clamps to OPGW or overhead ground wire (OHGW) once final sag is established. Temporary guard or clearance structures are installed as needed over existing distribution or communication lines, roads and highways, railways, or other obstructions to ensure that construction operations do not obstruct traffic, prevent the conductors from contacting existing energized conductors or other cables, and ensure public safety.

21.3 Temporary Use Areas

The transmission line construction process will include the following temporary use areas that will be restored following construction, unless the landowner requests for them to remain after construction is complete:

- Pulling/tensioning sites will be required to facilitate conductor installation. These sites require a flattened area approximately 75-feet by 300 -feet. It is expected there will be up to eight of these locations required for the Project.

- Temporary access to the structures will be required to enable foundation installation, structure assembly and erection, conductor and OPGW or OHGW installation. This access will consist of temporary roads extending from existing roads to the structure sites within the proposed utility easement area. Temporary access roads may be bladed, if needed, to provide a level area. To prevent rutting, and as otherwise determined necessary by the contractor, temporary mats will be installed to facilitate equipment travel to the structure sites. Each structure site will require approximately 150-foot by 150-foot temporary workspace to facilitate foundation construction, structure assembly, and erection.

The final locations of these temporary use areas are dependent upon final micro-siting of structure locations. The Applicants commit to the following with respect to the temporary use areas:

- All necessary land rights will be secured.

- Cultural resource field surveys and wetland delineations will be conducted, if not in an area previously surveyed.

- Cultural resource impacts will be avoided or mitigated in consultation with SDSHPO.

- Wetland impacts will be avoided or will be in compliance with applicable USACE and state regulations.

- Potentially undisturbed grasslands (as depicted in Figure 16) will be avoided to the extent possible.

21.4 BMPs During Construction

The Applicants employ standard construction and mitigation practices that have been developed from experience with past projects as well as industry-specific BMPs. These BMPs address ROW clearing, erecting transmission line structures, stringing transmission lines, and minimizing environmental impacts. BMPs for each specific construction task are based on permit requirements, environmental constraints, terrain and land use characteristics, maintenance guidelines, inspection procedures, and other practices. Resource-specific avoidance, minimization, and mitigation measures and BMPs are discussed further in Sections 9.0 to 17.0. A noxious weed control plan will be developed to identify and establish procedures to limit the introduction and spread of noxious and invasive weeds during construction and ongoing operations.

21.5 Restoration Procedures

During construction, ground disturbance at the structure sites and structure assembly areas will occur. Following the completion of construction, disturbed areas, including staging areas, structure assembly areas, and pulling/tensioning areas, will be restored according to the

agreement negotiated with the landowner and applicable permitting requirements. All construction materials and debris will be removed from the site once construction is complete. Post-construction reclamation activities also include dismantling all temporary facilities (including staging areas), employing appropriate erosion control measures, and reseeding areas disturbed by construction activities, unless otherwise directed by the landowner. The Applicants will work to ensure that restoration activities are completed in accordance with easement agreements and applicable permitting requirements. As discussed further in Section 17.5, the Applicants will meet with Deuel County and townships to discuss road use and will continue that coordination during construction.

21.6 Maintenance Procedures

Once the Project is operational, access to the Route ROW is required periodically to perform inspections, conduct maintenance, and repair damage. Regular maintenance and inspections will be performed during the life of the Project to ensure it continues to provide safe and reliable performance. The Applicants will perform maintenance of the Project in compliance with the applicable reliability standards established by NERC. Generally, the Applicants inspect the transmission lines at least once per year. Inspections are typically limited to the immediate Project ROW and pre-determined access points. If concerns or problems are found during inspections, repairs will be performed and the landowners and agencies will be notified, as needed.

The Route ROW will be managed to remove trees and vegetation that interfere with the safe and reliable operation of the transmission line. ROW clearing practices include a combination of mechanical and hand clearing and may include application of herbicides, where allowed, to remove or control vegetation and weed growth. A noxious weed control plan will be developed to identify and establish procedures to limit the introduction and spread of noxious and invasive weeds during construction and ongoing operations. If any damage or concerns are identified during inspections or testing, repairs or equipment replacements will be performed, as needed.

22.0 Information Concerning Transmission Facility (ARSD 20:10:22:35)

The transmission line will be above ground; no underground lines are proposed as part of this Project. Transmission lines are designed to operate for decades and require only moderate maintenance, particularly in the first years of operation. Transmission infrastructure has very few mechanical elements, which results in reliability. It is built to withstand weather extremes that are normally encountered, except for outages due to severe weather, such as tornadoes and heavy ice storms.

Transmission lines are automatically taken out of service by the operation of protective relaying equipment when a fault is detected in the system. Such interruptions are usually only momentary. Scheduled maintenance outages are also infrequent on high-voltage transmission lines. As a result, the average annual availability of transmission infrastructure is very high, more than 99 percent.

22.1 Proposed Transmission Facility and Layout

The transmission line design selected for the Project will be a single-circuit, 345-kV transmission line that is anticipated to be constructed on steel-monopole structures. The circuit of the line will consist of a single conductor per phase, one for each of the three phases, hung vertically from insulators attached to davit arms or post insulators on each side of the monopole structure. Each phase will have a total of two conductor bundles with 18-inch vertical spacing.

The phase conductors are expected to be twisted pair (TP), 636 ACSR "Grosbeak." TP conductors consist of two conductors placed side by side and twisted at a predefined distance by the manufacturer. This type of conductor provides motion resistance to wind-induced events on transmission lines (e.g., conductor galloping or vibration). Each phase will consist of two of these TP conductors providing optimal current carrying capacity at 345 -kV.

The associated communication lines proposed for the Project with the installation of the single circuit are expected to be OPGW. OPGW is a fiber optic cable with a designated set of fibers surrounded by steel wires that serve a dual purpose at the top of each structure: (1) to protect the phases from lightning strikes; and (2) to exchange information (i.e. communicate) between the endpoint substations and other locations on the transmission system.

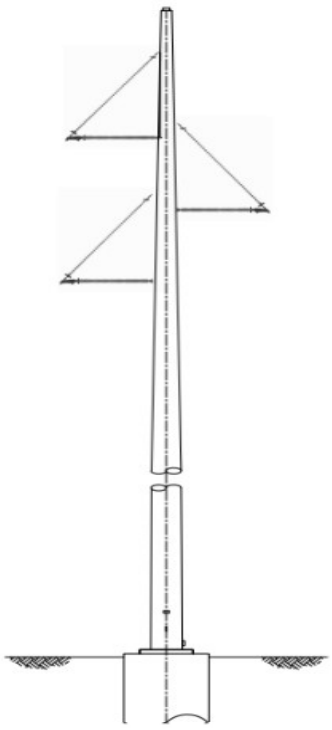


Diagram 1. Proposed Structure

The Project is expected to require up to 30 transmission structures with spans ranging from 400 to 1,500 feet, but this may vary depending on geological, environmental, or engineering constraints identified during micro-siting. Configuration details are provided in Table 16, and a proposed design is shown in Diagram 1. The structures will be bolted to concrete, drilled pier foundations embedded in the ground. Foundation sizes vary generally from 8 to 15 feet in diameter and from 20 to 40 feet in depth. Specialty structures may be used where unique features are encountered along the Route. The Applicants will know where specialty structures must be installed after all required federal, state and local permits are obtained, land rights are secured, and final engineering is complete. In the rare event that specialty structures are required, the Applicants expect that they would be comprised of either two pole H-frame structures or 3-pole monopole structures. These types of specialty structures would require a larger footprint than the proposed monopole structures. Specialty structures may involve pole spacing that utilizes up to a total of 25 to 30 feet of land as opposed to the anticipated steel monopole with concrete foundation design of 8 to 15 feet. The need for specialty structures would be communicated with landowners as soon as the Applicants become aware of the need for such a structure. Through the course of landowner discussions, the Applicants will work with the affected landowner to incorporate landowner preferences into the design or location of the structure to the extent possible.

Table 16. Project Configuration Summary

Type	Material	ROW Width	Approx. Height	Approx. Foundation Diameter	Typical Span
Monopole Structure w/ Davit Arms	Corten Steel	150 feet	130–175 feet	8–15 feet	400–1,500 feet

22.2 Safety

22.2.1 Project Safety

The Project will be designed according to local, state, and National Electric Safety Code (NESC) standards regarding ground clearance, crossing utilities clearance, building clearance, strength of materials, and ROW widths. Construction crews and/or contract crews will comply with local, state, and NESC standards regarding facility installation and standard construction practices. The

Applicant will establish safety-compliant industry procedures to be followed during and after installation of the transmission line, including clear signage during all construction activities.

The proposed transmission line will be equipped with protective devices (circuit breakers and relays located at the Project's switchyard and OTP Substation) to safeguard the public in the event of an accident or if the structure or conductor falls to the ground. Protective equipment will de-energize the transmission line should such an event occur. In addition, the Power Plant Site facilities will be properly fenced, have proper signage, and will be accessible only by authorized personnel.

22.2.2 Electric and Magnetic Fields

Electric and magnetic fields (EMF) are invisible areas of energy associated with the use of electrical power. For the lower frequencies associated with power lines (referred to as Extremely Low Frequency [ELF]), electric fields and magnetic fields, measured in kilovolt per meter (kV/m) and milliGauss (mG), respectively, should be considered separately. Electric fields are dependent on the voltage of a transmission line, and magnetic fields are dependent on the current carried by a transmission line. The strength of the electric field is proportional to the voltage of the line, and the intensity of the magnetic field is proportional to the current flow through the conductors. Transmission lines operate at a power frequency of 60 Hertz (cycles per second).

22.2.2.1 Electric Fields

The Applicants are not aware of any federal, state, or local standards for transmission line electric fields. The strength of electric fields diminishes rapidly as the distance from the conductor increases.

22.2.2.2 Magnetic Fields

The Applicants are not aware of any federal, state, or local regulations pertaining to magnetic field exposure. Magnetic field levels decrease rapidly as the distance from the centerline increases (proportional to the inverse square of the distance from source). In addition, since the magnetic field produced by the transmission line is dependent on the current flow, the actual magnetic fields when the Project is placed in service will vary as the current flow on the line changes throughout the day and time of year.

22.2.2.3 EMF Research

Considerable research has been conducted since the 1970s to determine whether exposure to power-frequency (60 hertz) magnetic fields causes biological responses and health effects. Public health professionals have also investigated the possible impact of exposure to EMF on human health for the past several decades. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields can cause biological responses or health effects continues to be debated.

Since the 1970s, a large amount of scientific research has been conducted on EMF and health. This large body of research has been reviewed by many leading public health agencies, such as the U.S. National Cancer Institute, the U.S. National Institute of Environmental Health Sciences, and the World Health Organization, among others. These reviews show that exposure to electric power EMF neither causes nor contributes to adverse health effects.

For example, in 2016, the U.S. National Cancer Institute (2016) summarized the research as follows:

> Numerous epidemiologic studies and comprehensive reviews of the scientific literature have evaluated possible associations between exposure to non-ionizing EMFs and risk of cancer in children (13–15). (Magnetic fields are the component of non-ionizing EMFs that are usually studied in relation to their possible health effects.) Most of the research has focused on leukemia and brain tumors, the two most common cancers in children. Studies have examined associations of these cancers with living near power lines, with magnetic fields in the home, and with exposure of parents to high levels of magnetic fields in the workplace. No consistent evidence for an association between any source of non-ionizing EMF and cancer has been found.

Other agencies have also found that there is insufficient evidence to demonstrate a causal relationship between EMF exposure and any adverse human health effects.[1]

22.2.3 Stray and Induced Voltage

"Stray voltage" is a condition that can potentially occur on a property or on the electric service entrances to buildings from distribution lines serving these buildings—not transmission lines as proposed here. The term generally describes the current of electricity between two objects where no voltage difference should exist. More precisely, stray voltage is an electrical current that exists between the neutral wire of either the service entrance or of premise wiring and grounded objects in buildings, such as barns and milking parlors.

Transmission lines do not, by themselves, create stray voltage because they do not connect directly to businesses or residences. The proposed transmission line will not run parallel to any existing transmission lines, and during design running parallel would be avoided.

23.0 List of Potential Permits and Approvals (ARSD 20:10:22:05)

The Applicants must comply with applicable federal, state, and local laws and regulations and obtain permits/approvals from a variety of federal, state, and local agencies for the Project. Table 17 identifies permits and approvals that may be needed for the Project. This list of permits/approvals is subject to change as Project development continues.

Table 17. List of Potentially Applicable Permits and Approvals

Agency	Type of permit or approval	Trigger	Status
Federal			
Federal Aviation Administration (FAA)	Notice of Proposed Construction and Actual Construction or Alteration (FAA Form 7460) (Determinations of No Hazard)	Required for construction or alteration of structures higher than 200 feet Above Ground Level, structures near airports, or siting within line of sight of radar of an air defense facility.	To be obtained, as needed.

[1] *See, e.g.*, The Minnesota State IntraAgency Working Group on EMF Issues, *A White Paper on Electric and Magnetic Fields Policy and Mitigation Options* (Sept. 2002); *In the Matter of the Application of Xcel Energy for a Route Permit for the Lake Yankton to Marshall Transmission Line Project in Lyon County*, MPUC Docket No. E002/TL-07-1407, Findings of Fact, Conclusions of Law and Order Issuing a Route Permit to Xcel Energy for the Lake Yankton to Marshall Transmission Project at 7-8 (Aug. 29, 2008); *In the Matter of the Application for a HVTL Route Permit for the Tower Transmission Line Project*, Docket No. ET2, E015/TL-06-1624, Findings of Fact, Conclusions of Law and Order Issuing a Route Permit to Minnesota Power and Great River Energy for the Tower Transmission Line Project and Associated Facilities at 23 (Aug. 1, 2007).

Agency	Type of permit or approval	Trigger	Status
U.S. Army Corps of Engineers (USACE)	Clean Water Act, Section 404 Permit	Required for dredging or filling of waters of the U.S.	To be obtained, as needed.
U.S. Fish and Wildlife Service (USFWS)	Migratory Bird Treaty Act compliance	Consultation regarding potential impacts on migratory birds.	Ongoing.
	Bald and Golden Eagle Protection Act compliance	Consultation regarding potential impacts on bald and golden eagles.	Ongoing.
	Threatened and Endangered Species, Endangered Species Act consultation	Consultation regarding potential impacts to listed species or designated critical habitat protected under the Endangered Species Act.	Ongoing.
U.S. Environmental Protection Agency (USEPA)	Spill Prevention, Control, and Countermeasure (SPCC) Plan	Aboveground oil storage with 1,320 gallons or more capacity or below ground oil storage with 42,000 gallons or more capacity.	To be obtained prior to operation.
State of South Dakota			
South Dakota Public Utilities Commission (SDPUC)	Facility Permit	Construction of an energy conversion facility and associated facilities.	In progress.
SDSHPO / South Dakota State Historical Society	Cultural Resources consultation	Consultation required in connection with other agency permitting requirements, such as the Commission.	Level I and III surveys have been completed for the Power Plant Site. The Level III Cultural Resource Survey report was submitted to SDSHPO for review on June 20, 2025. Additional cultural resource field surveys will be done for the Route once right of entry has been obtained. An addendum Level III Cultural Resource Survey report will be prepared for the Route and submitted to SDSHPO for review.
South Dakota Department of Agriculture and Natural Resources	Section 401 Water Quality Certification	Required in conjunction with Section 404 permit for filling jurisdictional waters of the U.S.	Incorporated into USACE Section 404 permit.
	National Pollutant Discharge Elimination System (NPDES) Permit – Construction Stormwater Permit (includes Stormwater Pollution Prevention Plan (SWPPP))	Required for land disturbance from construction activities that disturb 1.0 acre or more of land. Must prepare a SWPPP.	To be obtained prior to operation.

Agency	Type of permit or approval	Trigger	Status
	Temporary Discharge Permit(s)	Required to discharge water to surface waters of the state for one year or less.	To be obtained, as needed.
	Water Right Permit(s) for Non-irrigation uses	Required for appropriation of water for all water uses in South Dakota except for certain domestic uses of water.	To be obtained prior to operation.
	Temporary Water Use Permit	May be required for the use of public water for construction, testing, or drilling purposes.	To be obtained, as needed.
	Air Quality Permit	Required if equipment associated with the facility will emit pollutants into ambient air.	To be obtained prior to operation.
	Water Resource Enhancement or Restoration Approval	Required for projects designed to enhance or restore the water quality, habitat, fish life propagation uses, and recreational uses of a waterbody.	To be obtained, as needed.
South Dakota Aeronautics Commission	Submit FAA Determinations of No Hazard, if obtained	If an FAA Determination of No Hazard is obtained, the final Determination of No Hazard must be filed with the South Dakota Aeronautics Commission.	To be submitted, as needed.
South Dakota Department of Transportation	Highway Access Permit(s)	Required for any access road abutting a state road.	To be obtained, as needed.
	Oversize/overweight Permit(s)	Required for transport of oversized/overweight loads on state roads.	To be obtained, as needed.
	Permit(s) To Occupy Right of Way	Required to occupy a state road right-of-way.	To be obtained, as needed.
	Utility Crossing Permit(s)	Required to install electrical lines (transmission line) across/within state road right-of-way.	To be obtained, as needed.
South Dakota Game, Fish and Parks	State-listed Threatened/Endangered Species Review	Consultation regarding effects on state-listed species.	Ongoing.
Local County or Township			
Deuel County	Conditional Use Permit	Required for an energy conversion facility and transmission line.	To be obtained, as needed.
Deuel County	Building Permit	Required for the installation of the Project.	To be obtained, as needed.
Deuel County	Floodplain Development Permit(s)	May be required for installation of structures within a floodplain.	To be obtained, as needed.
Deuel County	Building Permit	Required whenever a structure is moved into the county, erected, added to, or structurally altered.	To be obtained prior to activity subject to permit, if required.
Deuel County	Driveway or Approach Permit(s)	Required for the installation of approaches/driveways abutting road rights-of-way over which Deuel County has asserted road jurisdiction.	To be obtained prior to activity subject to permit, if required.
Deuel County	Haul Road Agreement	May be required for construction or transportation activities	To be obtained, as needed.

Agency	Type of permit or approval	Trigger	Status
		affecting roads under Deuel County jurisdiction.	
Deuel County	Oversize/overweight Permit(s)	May be required to transport oversize/overweight loads on roads under Deuel County jurisdiction.	To be obtained prior to use of local roads for construction, if required.
Deuel County	Utility Crossing Permit(s)	May be required for utility crossing(s) of roads under Deuel County jurisdiction.	To be obtained prior to activity subject to permit, if required.
Deuel County Weed Board	Weed Supervisor Approval	May be required for noxious weed management plan.	To be obtained prior to implementation of noxious weed plan, if required.
Organized Township(s)	Haul Road Agreement(s)	May be required for construction or transportation activities affecting township roadways.	To be obtained prior to use of local roads for construction, if required.
Organized Township(s)	Utility Permit(s)	May be required for the installation of transmission line facilities on, over, across, or adjacent to township rights-of-way.	To be obtained prior to activity subject to permit, if required.
Organized Township(s)	Road Approach Permit(s)	Required for the installation of approaches/driveways abutting road rights-of-way over which township has asserted road jurisdiction.	To be obtained prior to activity subject to permit, if required.
Organized Township(s)	Oversize/overweight Permit(s)	May be required to transport oversize/overweight loads on roads over which township has asserted road jurisdiction.	To be obtained prior to activity subject to permit, if required.
Organized Township(s)	Temporary Approach, Road/Right-of-way Modification, Improvement, and/or Utility Crossing Permit(s)	May be required for temporary facilities/modifications affecting roads over which township has asserted road jurisdiction.	To be obtained prior to activity subject to permit, if required.
Existing Infrastructure Owner(s)	Crossing Agreements/ Licenses/Permits	May be required to cross existing easements (e.g., pipelines, drainage easements, electric lines, telecommunications cables, oil and gas gathering lines).	If needed, to be obtained prior to crossing existing infrastructure and easements.

24.0 Additional Information in Application (ARSD 20:10:22:36)

24.1 Summary List of Mitigation and Measures Required

- The Applicants will analyze structure placement for the Power Plant and transmission line during final design to determine if permanent wetland impacts can be further minimized or avoided. A complete delineation of the three potential unnamed tributary crossings by the generator transmission lead line will be necessary to avoid impacts to the extent possible. BMPs will be developed and utilized during construction to protect topsoil and adjacent wetland resources and minimize soil erosion.

- The Applicants will repair and restore areas temporarily disturbed by construction or maintenance of the Project. Except as otherwise agreed to by the landowner, restoration will include replacement of original pre-construction topsoil or equivalent quality topsoil to its original elevation, contour, and compaction and re-establishment of original vegetation as close thereto as reasonably practicable.

- Geotechnical soil borings will be conducted at the Power Plant Site and transmission line structure locations to determine the soil suitability to support the structure foundations.

- In the event of a spill, drainage of the contaminated water will be captured by the berms or containments and processed through an oil-water separator for the various storage tanks and unloading facilities. In the event of an accidental spill, SDDANR will be contacted, and MRES will work with the agency to determine the remediation needed.

- The Applicants will implement the SWPPP to the Commission when the Applicants have a final design for the Project. The SWPPP will outline the water and soil conservation practices that will be used during construction to prevent or minimize erosion and sedimentation. The SWPPP will be completed before submittal of an application for a NPDES general permit for construction activities. All contractors will be given a copy of the SWPPP and requirements will be reviewed with them prior to the start of construction.

- Construction will comply with applicable Deuel County floodplain administration ordinance and permit requirements. Applicants will coordinate with the Deuel County Floodplain Administrator to review structure locations and obtain floodplain development permits, as needed.

- Water use during construction will be restricted to dust control and foundation construction. This water will be pumped from local surface waters following consultation with SDDANR.

- A Water Permit for Non-irrigation Uses will be obtained through SDDANR for two permanent wells proposed for the operation of the Power Plant. The water will be utilized for cooling tower make-up and filling the fire suppression tank.

- The transmission line will be sited, to the extent possible, within previously disturbed lands. During final design, the undisturbed grasslands will be field verified and avoided if possible.

- Temporary impacts on vegetation will be mitigated through BMPs, such as employing appropriate erosion control measures and reseeding areas disturbed by construction activities, unless otherwise directed by the landowner.

- Effects on terrestrial habitats will be minimized by not altering stream channels or drainage patterns, minimizing placement of fill in wetlands, restoring temporary disturbance areas, and replanting disturbed areas, if necessary, using a seed mix that is recommended by NRCS or USFWS, unless otherwise agreed to with the landowner. Temporary impacts will also be minimized by utilizing erosion and sedimentation BMPs that minimize or prevent sediment from reaching adjacent waterways and protect topsoil.

- The APLIC considerations for overhead powerlines will be incorporated into final design and construction of the transmission line. The transmission line will be designed in

accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006*.

- In accordance with ARSD Ch. 74:51:01, a Water Restoration or Enhancement permit application will be coordinated with SDDANR during final design of the Project.

- The Applicants will compensate landowners for impacts on crops resulting from the construction, operation, and maintenance of the Project that might result from these activities. Construction will be conducted before crops are planted, or following harvest, if possible.

- The Applicants will work with landowners to identify drain tile systems, and if impacted, will continue to coordinate with landowners on final structure locations to minimize potential impacts on existing farming and other agricultural uses. If livestock are present in the Project construction areas, fencing or cattle guards will be placed where necessary to prevent livestock from entering the construction area.

- During operation, the Project will meet Deuel County's noise ordinance requirements, which were adopted in 2024. The ordinance states that noise levels for residences shall not exceed 45 dBA. The noise level is to be measured at the perimeter of existing residences. During final design, noise mitigation measures will be implemented at the Power Plant Site and modeled to ensure the Power Plant Site does not exceed 45 dBA at residences.

- Air quality mitigation measures will include the implementation of BMPs throughout construction to suppress fugitive dust emissions. Upon completion of construction activities, measures will be taken to revegetate disturbed areas (outside of areas that will return to active cultivation) to permanently stabilize soil and prevent further production of fugitive dust emissions.

- An air quality construction permit will be submitted for the Project per the requirements of ARSD Ch. 74:36:20. Air pollution control through limiting the hours of operation and equipment selection will keep emissions below the Prevention of Significant Deterioration emission thresholds during operation. The proposed facility will comply with all air quality standards and regulations of USEPA and SDDANR.

- Impacts on local roads due to construction traffic will be addressed in haul road agreements with Deuel County and Scandinavia Township and will require pre- and post-construction inspections to be completed to determine what must be done to improve haul roads prior to construction and return haul roads to preconstruction conditions.

- The Applicants will obtain FAA Determinations of No Hazard (Form 7460-1, Notices of Proposed Construction or Alteration) prior to construction of structures, as needed. The Applicants will also comply with any applicable requirements for pre- and post-construction FAA submittals (Form 7460-2).

- To the extent possible, the design of the Power Plant will avoid any eligible cultural sites. After evaluating the two potential cultural sites, Augustana recommended the two sites be considered not eligible for National Register of Historic Places (NRHP)-listing. Further coordination of these sites will occur with SDSHPO to determine next steps, if any.

- An unanticipated discovery plan will be developed, which will be followed during construction if potential cultural resources or human remains are encountered. Once prepared, the plan will be submitted to SHPO for review.

25.0 Statement Required Describing Gas or Liquid Transmission Line Standards of Construction and Gas or Liquid Transmission Line Description (ARSD 20:10:22:37; ARSD 20:10:22:38)

The Project will connect to the existing NBP interstate pipeline at a new approximate 0.5-acre gas yard. From the gas yard, approximately 350 feet of new piping will be needed to connect to the combustion turbines. The new gas yard and any new piping will be on existing property owned by WMMPA.

25.1 Design Capacity

The design inlet flow capacity to the plant will be approximately 2,800 Million Btu/hr. The pipe will have a design pressure of approximately 1,440 psig. Delivery to the gas turbines will be approximately 600 psig. Table 18 summarizes the pipe parameters.

Table 18. Summary of Pipe Design Parameters

Parameter	Characteristic	Measurement
Flow Rates	NBP Inlet Capacity	2,800 MMBtu/hr
	Turbine Delivery Capacity	1,400 MMBtu/hr
	Future Capacity	1,400 MMBtu/hr
Pressure	Inlet Pressure	1,435 psig
	Turbine Delivery Pressure	600 psig

25.2 Changes in Flow

The Project will be connected to the NBP transmission facilities. Flow characteristics of the NBP system are dynamic and cannot be generally determined with respect to a pipe interconnection intended to operate on a demand basis. The Project is a normal use associated with the NBP system and is not expected to change the flow.

25.3 Technical Specifications of Pipeline

The pipeline installed by NBP will be designed per B31.8 - Gas Transmission and distribution piping and 49 CFR part 192. The gas piping after the NBPL meter set assembly will be designed and tested per B31.1 – Power Piping.

25.4 Other Facilities

One gas regulator station will be located at the new 1-acre gas yard on the southwest end of the Project site. No compressor stations or storage facilities will be constructed for this proposed Project. All components other than the pipe material, including valves, fittings, flanges, regulators, and other components, will be designed and purchased for an American National Standards Institute (ANSI) 600 minimum rating. A cathodic protection system will be designed for the pipeline.

26.0 Testimony and Exhibits (ARSD 20:10:22:39)

The Applicants are submitting testimony and exhibits in support of this Application. The individuals identified in Table 19 are providing testimony in support of the Application. The

Applicants reserve the right to provide supplemental and/or rebuttal testimony, as required by the Commission, to further support this Application.

Table 19. List of Individuals Providing Testimony

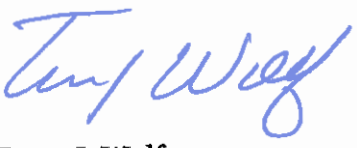
Individual	Title and Organization	Subject Matter
Brent Moeller	Director of Generation Resources, Missouri River Energy Services	Project development and engineering related technical questions
Becky Baker	Senior Environmental Project Manager, HDR Engineering	Environmental related questions

27.0 Applicants' Verification

Terry Wolf, being duly sworn, deposes and states that he is the Authorized Representative of Western Minnesota Municipal Power Agency and Missouri River Energy Services and is authorized to sign this Application on behalf of the Applicants.

He further states that he does not have personal knowledge of all the facts recited in the Application and Exhibits and Attachments attached hereto, but the information has been gathered from employees and agents of the Applicants, and the information is verified by him as being true and correct on behalf of the Applicants.

Dated this 7th day of August 2025.



Terry J. Wolf
Second Assistant Secretary of Western Minnesota Municipal Power Agency and
Vice President and Chief Operating Officer of Missouri River Energy Services

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