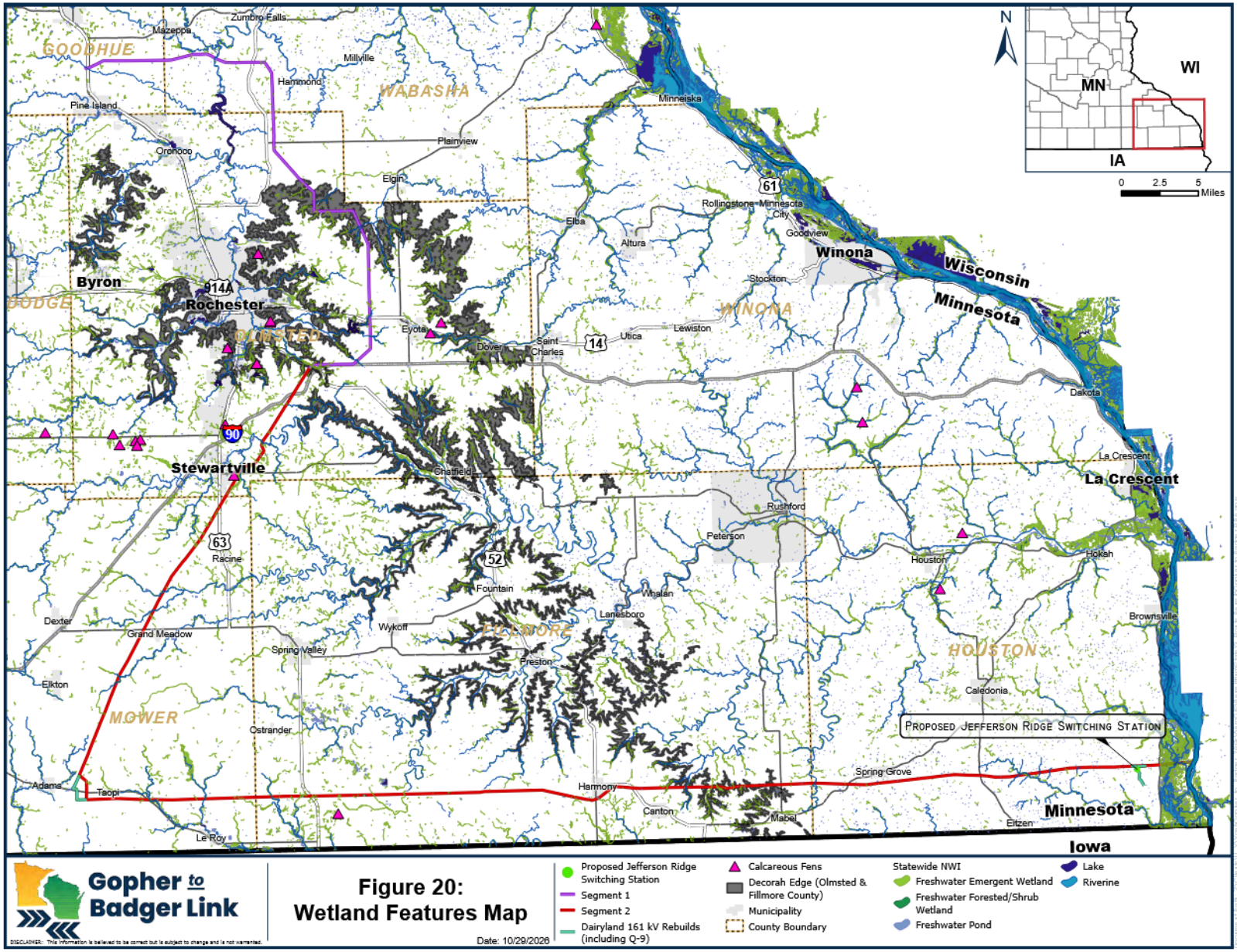

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Oronoco
Plainview
Elgin
Minneiska
Rollingstone
Minnesota City
Goodview
Winona
Elba
Altura
Stockton
Lewiston
Utica
Saint Charles
Dover
Eyota
Byron
Rochester
Stewartville
Chatfield
Wisconsin
Minnesota
Dakota
La Crescent
Rushford
Peterson
Houston
Hokah
Brownsville
Fountain
Wykoff
Lanesboro
Whalan
Preston
Spring Valley
Dexter
Grand Meadow
Elkton
Ostrander
Racine
Adams
Taopi
Le Roy
Harmony
Canton
Mabel
Spring Grove
Elizen
Caledonia
Proposed Jefferson Ridge Switching Station
Minnesota
Iowa
Gopher to Badger Link
Figure 20:
Wetland Features Map
Date: 10/29/2026
Proposed Jefferson Ridge Switching Station
Segment 1
Segment 2
Dairyland 161 kV Rebuilds (including Q-9)
Calcareous Fens
Decorah Edge (Olmsted & Fillmore County)
Municipality
County Boundary
Statewide NWI
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Riverine

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Calcareous fens are a rare wetland type characterized by constant upwelling of calcium-rich groundwater resulting in the development of low oxygen, low nutrient ability, and peat. This unique habitat supports rare plant species that are specifically adapted to the conditions.[185] Fens are protected under Minn. Stat. § 103G.223, which provides that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by an activity, unless approved by the MDNR through a management plan. There are no calcareous fens located within the Proposed Routes (see **Section 7.2.4**). There are 6 fens within 5 miles of Segment 1 and 6 fens within 5 miles of Segment 2, as described in **Table 6.8.7-9**. There are no fens located within 5 miles of Q-9. These features are shown on **Figure 20**.

TABLE 6.8.7-9

Calcareous Fens within 5 Miles of the Proposed Right-of-Way

Segment 1		Segment 2	
Fen Name	Distance from Proposed Right-of-Way (miles)	Fen Name	Distance from Proposed Right-of-Way (miles)
Marion 30	3.41	High Forest 35	0.23
Dover 13	3.86	Chester Fen	1.12
Joyce Park Fen	3.91	High Forest 15	2.69
Marion 8	3.98	Marion 30	3.06
Haverhill 19	4.50	Joyce Park Fen	3.93
Dover 7	4.58	Marion 8	4.00

The Decorah Edge formation also supports unique wetland functions due to the ability of the confining layer to hold water. Segment 1 of the Proposed Route crosses approximately 1,235 acres of designated Decorah Edge areas, primarily located northeast of Rochester. The Segment 2 of the Proposed Route crosses approximately 495 acres of designated Decorah Edge areas, primarily on the northern end of the segment, located southeast of Rochester. The Q-9 Proposed Route does not cross this feature (see **Figure 16**). Olmsted County has implemented additional wetland conservation ordinances regulating impacts to wetlands located on the Decorah Edge formation to protect their function as filtration for high value groundwater recharge areas.[186] Additional discussion of the Decorah Edge formation and locations can be found in **Section 6.8.4**.

6.8.7.2 Potential Impacts

The ROI for analysis of impacts to surface waters, floodplains, and wetlands is the Proposed Rights-of-Way. Potential impacts are expected to be localized and primarily associated with construction activities, including vegetation clearing, equipment access, temporary workspaces, and installation of transmission structures. The Project has been designed to span surface water features where practicable and avoid direct impacts to stream beds, banks, and open water resources.

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185 MDNR. 2026. Calcareous Fens. Available online at: https://www.dnr.state.mn.us/wetlands/calcareous-fens.html. Accessed June 2026.

186 Olmsted County. 2010. *Olmsted County Code of Ordinances: Chapter 3700 – Wetland Conservation Ordinance.* Available online at: https://www.olmstedcounty.gov/sites/default/files/2020-10/Chapter%203700%20Wetland%20Conservation%20Ordinance.pdf. Accessed June 2026.

Watersheds

No impacts to the overall function of watersheds are expected. Any impacts that may occur from installation of structure foundations would be minimal and localized and would not affect the overall watersheds.

Surface Waters

The Proposed Rights-of-Way would cross approximately 203 streams, rivers, and drainage ditches (**Table 6.8.7-10**) and approximately 2.1 acres of lake and pond features (1.1 acres on Segment 1, 1 acre on Segment 2). The Q-9 Proposed Right-of-Way does not cross any lake or pond features. Waterbody crossings are concentrated within Segment 2, which traverses the Mississippi River, Root River, Upper Iowa River, and numerous tributary systems.

Table 6.8.7-10 identifies the number of perennial and intermittent streams and ditches crossed by the Proposed Rights-of-Way.

TABLE 6.8.7-10

Watercourse Flow Regimes Crossed by Proposed Rights-of-Way

Waterbody Feature	Segment 1	Segment 2	Q-9	TOTAL
Perennial Stream	6	15	0	**21**
Perennial Drainage Ditch	0	1	0	**1**
Intermittent Stream	58	111	1	**170**
Intermittent Drainage Ditch	1	7	0	**8**
Underground/Karst	0	0	0	**0**
Connector	0	0	0	**0**
Unknown Stream/Drainage Ditch	0	3	0	**3**
TOTAL	**65**	**137**	**1**	**203**

During construction, temporary impacts could occur where vegetation clearing, equipment operation, or temporary access is required adjacent to water resources. Disturbance of exposed soils could result in localized erosion and sedimentation if not properly controlled. Temporary bridge crossings, matting, or culverts may be required at select locations to facilitate access to structure sites.

The Project has been designed so that transmission line conductors span waterbodies and structures are located outside stream channels and ordinary high-water marks. Consequently, no permanent impacts to stream beds, stream banks, lake bottoms, or channel morphology are anticipated. The Jefferson Ridge Switching Station has been sited to avoid lakes, rivers, streams, and ditches.

As shown in **Table 6.8.7-4**, the Proposed Right-of-Way cross approximately eight Public Watercourses in Segment 1 and 19 Public Watercourses and one Public Water Basin in Segment 2. Segment 2 also crosses the Mississippi River, which is a designated Public Water, Section 10 Navigable Water, and Wild Rice Water, with a network of designated shallow lakes associated with the Mississippi River floodplain fringe. While temporary construction activities may occur near these resources, long-term impacts are expected to be minimal because transmission facilities are designed to span the identified water features.

The Segment 2 Proposed Right-of-Way would also cross 15 designated trout streams. Temporary construction-related erosion or sedimentation could adversely affect coldwater aquatic habitat if not properly controlled; however, impacts are expected to be short-term and localized because waterbody crossings would be spanned and erosion-control measures would be implemented.

Clearing of woody riparian vegetation could reduce stream shading and increase solar radiation reaching surface waters, potentially resulting in localized increases in water temperature. Potential effects on stream temperature would depend in part on the extent to which Project construction and operation remove existing woody vegetation that provides stream shading. **Table 6.8.7-11** identifies perennial stream crossings where removal of woody riparian vegetation is anticipated along the Proposed Rights-of-Way and summarizes the approximate extent of clearing relative to the approximated full length of the watercourse. It is important to note that the riparian vegetation of these watercourses generally consist of a diversity of community types, including herbaceous and low-growing shrub vegetation. As evident from review of aerial photography, the riparian areas are not forested along the entire length of the watercourse. There are no perennial streams crossed by the Q-9 Proposed Right-of-Way.

The extent of clearing related to the Project is presented as both the approximate length of affected riparian corridor and acreage of woody vegetation removal based on a 50-foot buffer on both sides of the waterway within forested riparian communities to characterize the potential reduction in stream shading. On Segment 2, woody vegetation clearing has already occurred along portions of the existing 80-foot-wide transmission line corridor; but would be expanded to accommodate the 765 kV / 161 kV transmission line.

TABLE 6.8.7-11

Estimated Woody Riparian Vegetation Clearing along Perennial Watercourses Crossed by the Proposed Rights-of-Way

Kittle No.	Watercourse Name	Approximate Watercourse Length (miles) [1]	Trout Stream (Y/N) [2]	Woody Riparian Vegetation Clearing (acres) [3]	Woody Riparian Vegetation Clearing Length - Bank 1 (feet) [3]	Woody Vegetation Riparian Clearing Length - Bank 2 (feet) [3]
Segment 1						
M-034	Zumbro River	121.3	No	0.48	250	250
M-034-073	Bear Creek	2.8	No	0.35	50	250
M-034-073-005	Unnamed Creek	2.0	No	0.85	332	366
Segment 2						
M	Mississippi River	245.6	No	0.04	86	NA
M-001	Winnebago Creek	20.9	Yes	0.89	379	379
M-009	Root River	119.0	No	0.13	167	0
M-009-010-005	Riceford Creek	26.9	Yes	0.30	87	210
M-009-033-008	Bear Creek	6.5	No	0.45	235	273
M-009-033-008-007	Bear Creek, North Fork	6.6	No	0.29	110	124
MAJ-0706348	Unnamed Stream	2.3	No	0.00	25	0
I-023	Iowa River, Upper	13.2	No	0.28	190	301
I-023	Iowa River, Upper	13.2	No	0.49	180	230

Sources:

[1] MDNR. 2026. DNR Rivers and Streams. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/water_dnr_hydrography/FeatureServer/0. Accessed October 2026.

TABLE 6.8.7-11

Estimated Woody Riparian Vegetation Clearing along Perennial Watercourses Crossed by the Proposed Rights-of-Way

Kittle No.	Watercourse Name	Approximate Watercourse Length (miles) [1]	Trout Stream (Y/N) [2]	Woody Riparian Vegetation Clearing (acres) [3]	Woody Riparian Vegetation Clearing Length - Bank 1 (feet) [3]	Woody Vegetation Riparian Clearing Length - Bank 2 (feet) [3]

[2] MDNR. 2026. Trout Stream dataset. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/env_trout_stream_designations/FeatureServer/0. Accessed October 2026.

[3] Woody riparian vegetation digitized using Minnesota Geospatial Information Office. 2025. Composite Image Service for Minnesota [Web map service]. Available online at: https://mn.gov/mngeo/gis-data-and-maps/web-map-services/composite-image-service/. Accessed October 2026.

Because woody vegetation clearing would generally be limited to the width necessary to construct and safely operate the transmission line, the Project is not anticipated to materially alter stream temperatures. Where tall-growing woody vegetation cannot be reestablished within the maintained right-of-way, low-growing native vegetation will be allowed or established where practicable to maintain bank stability and reduce long-term effects on riparian functions.

Impaired Waters

Table 6.8.7-6 identifies the MPCA-designated impaired waters crossed by the Proposed Rights-of-Way. Impairments include aquatic macroinvertebrate bioassessments, E. coli, turbidity, sulfate, Hg in fish tissue, and PCBs in fish tissue.

Because transmission structures are designed to span waterbodies, the primary impact mechanism would be temporary sedimentation associated with nearby ground disturbance, including the installation of temporary bridges and culverts. Soil mobilized during precipitation events could temporarily increase turbidity in adjacent water resources if exposed soils are not stabilized. Such impacts would be temporary and localized and are not expected to result in measurable changes in water quality, designated uses, or existing impairment conditions.

Floodplains

The Proposed Right-of-Way would cross approximately 110 acres of FEMA-designated 100-year floodplains, including approximately 21 acres within Segment 1 and 89 acres within Segment 2 (**Table 6.8.7-12**). Floodplain crossings are primarily associated with the Mississippi River, Root River, Upper Iowa River, Zumbro River, and their tributaries.

TABLE 6.8.7-12

FEMA Designated 100-Year Floodplain Areas Crossed by the Proposed Right-of-Way

Proposed Right-of-Way	Floodplain Designation	Acreage
Segment 1	100-year - Zone A and AE*	21
Segment 2	100-year - Zone A and AE*	89
	TOTAL	**110**

* Zone A indicates the 100-year floodplain or areas with a 1% chance of annual flooding. Zone AE indicates areas within 100-year floodplain for which the base flood elevation has been determined.

Source: FEMA. 2024. National Flood Hazard Layer. Available online at: https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed June 2026.

Permanent impacts within floodplains would be limited to the footprint of transmission structures where structures cannot be located outside flood-prone areas. Individual structure footprints generally occupy a very small area relative to the overall floodplain and are not anticipated to measurably affect flood storage capacity, flood conveyance, or flood elevations. The Jefferson Ridge Switching Station is not sited within a floodplain.

Temporary impacts may occur from equipment access and construction activities within floodplain areas. Disturbed areas would be restored following construction, and long-term adverse effects on floodplain functions are not anticipated.

Wetlands

The Proposed Right-of-Way would cross approximately 155 acres of NWI wetlands, consisting primarily of PEM wetlands, followed by PFO and PSS wetlands (**Table 6.8.7-13**). The Q-9 Proposed Right-of-Way would not cross any NWI wetlands.

TABLE 6.8.7-13

Wetlands Crossed by the Proposed Rights-of-Way

Wetland Feature	Segment 1 (acres)	Segment 2 (acres)	Q-9 (acres)	TOTAL
PEM Wetland Community*	20	102	0	**122**
PSS Wetland Community*	<1	5	0	**5**
PFO Wetland Community*	17	7	0	**24**
Shallow Open Water/Non-vegetated Aquatic Community*	<1	4	0	**4**
TOTAL	**39**	**118**	**0**	**155**

* Source: Cowardin et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Available online at: https://www.epa.gov/sites/default/files/2017-05/documents/cowardin_1979.pdf. Accessed June 2026

Temporary impacts could result from vegetation clearing, equipment operation, installation of construction matting, temporary grading, and structure installation activities within wetlands. These activities may temporarily disturb wetland vegetation, soils, and hydrology. Construction-related sedimentation could also affect wetland function if erosion-control measures are not properly implemented.

Permanent impacts to wetlands would be limited primarily to the footprint of transmission structures where placement within a wetland cannot be avoided. Permanent wetland impacts are expected to represent a small proportion of the total wetland acreage crossed by the Proposed Right-of-Way. Forested wetland communities may also experience long-term vegetation conversion within maintained transmission line rights-of-way, resulting in localized conversion from forested wetland conditions to scrub-shrub or emergent wetland communities.

No direct impacts to calcareous fens are anticipated because no calcareous fens occur within the Proposed Routes or Proposed Rights-of-Way. However, calcareous fens are groundwater-dependent ecosystems sustained by continuous discharge of calcium-rich groundwater. Installation of transmission structures typically involves excavation for foundations and, in some locations, temporary dewatering or groundwater management measures may be required during construction. In karst landscapes, localized alterations to groundwater flow paths, groundwater levels, or groundwater recharge characteristics have the potential to indirectly affect groundwater-fed resources, including calcareous fens. Given the distances between the Proposed Right-of-

Way and known calcareous fens, the limited footprint of individual structure foundations, and the absence of identified fens within the Proposed Rights-of-Way, the potential for indirect impacts to calcareous fen hydrology could occur.

On June 16, 2026, the Applicants met with the MDNR Calcareous Fen Program Coordinator (**Appendix C**). The MDNR indicated that they are mainly concerned with the two closest fens, High Forest 35 (fen number 8276) and the Chester Fen (fen number 9628). Further information is required by the MDNR before they can evaluate the potential for the Project to affect fen hydrology, which includes conducting geotechnical investigations. The MDNR recommendations outlined in the June 16, 2026 meeting describe the data that should be collected during the geotechnical investigations in proximity to the two closest fens. The Applicants will provide the requested information to the MDNR for the route designated by the MPUC to allow the MDNR to assess the potential for impacts and to inform Project design, including structure locations.

6.8.7.3 Mitigation Measures

Surface Waters and Water Quality

The Applicants will avoid and minimize impacts to lakes, rivers, streams, drainage ditches, Public Waters, impaired waters, trout streams, wild rice waters, navigable waters, floodplains, and associated riparian areas through Project design, structure placement, construction planning, and implementation of BMPs. To the extent practicable, transmission structures will be sited outside waterbodies, lakes, stream channels, and ordinary high-water marks, and conductor spans will be designed to cross water resources without placing permanent facilities within the bed or bank of the feature.

To minimize the potential for direct and indirect impacts to surface waters, the Applicants will:

- design transmission line crossings to span rivers, streams, ditches, and other water features wherever practicable;
- locate structures outside waterbodies and flood-prone areas where feasible and limit the number of structures required within floodplains;
- site temporary workspaces, material storage areas, fueling areas, equipment maintenance areas, and spoil stockpiles outside waterbodies, wetlands, and floodplains where practicable;
- avoid direct disturbance to stream beds, banks, and shorelines except where temporary access crossings are necessary and specifically authorized;
- minimize vegetation clearing within riparian areas and retain root structures where tree removal is required to maintain bank stability and reduce erosion potential; and
- restore disturbed riparian and upland areas following construction in accordance with permit requirements and landowner agreements.

The Applicants will obtain coverage under the General Permit and prepare a SWPPP prior to construction. The SWPPP will identify resource-specific BMPs and inspection requirements intended to minimize erosion, sedimentation, and stormwater-related impacts.

BMPs will include:

- silt fence, sediment logs, compost logs, sediment traps, ditch checks, erosion-control blankets, temporary mulch, temporary seeding, and other perimeter controls;
- stabilization of exposed soils as soon as practicable following construction;
- inspection and maintenance of erosion and sediment control measures throughout construction;
- prompt repair of erosion features identified during construction or restoration monitoring;
- temporary stabilization of slopes, stream approaches, and other erosion-prone areas;
- management of stormwater runoff to reduce transport of sediment to adjacent waters; and
- management of dewatering activities to reduce transport of sediment to adjacent waters.

Where temporary access across a stream, river, ditch, or drainage feature is necessary, appropriately sized temporary bridges, culverts, timber mats, or other crossing methods may be used, consistent with applicable permit requirements. Temporary crossing structures will be designed, installed, inspected, maintained, and removed to preserve drainage patterns and minimize impacts to stream banks, stream beds, aquatic habitat, and water quality. Temporary crossings will be removed following completion of construction, and disturbed areas will be restored in accordance with permit requirements.

Special precautions will be implemented for crossings of sensitive resources, including trout streams, impaired waters, Public Waters, and the Mississippi River, in accordance with the General Permit and other applicable permits and authorizations. Construction activities adjacent to these resources will be planned to minimize the duration and extent of disturbance, and additional erosion-control and stabilization measures may be implemented as warranted by site conditions or permit requirements.

The Project has minimized the removal of woody riparian vegetation by using perpendicular crossings of waterways wherever possible, and co-locating with existing transportation and utility corridors. Where practicable, the Project will minimize removal of woody riparian vegetation at stream crossings and retain low-growing vegetation to maintain streambank stability and shading. Disturbed riparian areas will be stabilized and revegetated following construction, thereby minimizing the potential for long-term changes in stream temperature and associated effects on aquatic communities.

Hazardous materials management procedures will also be implemented throughout construction and operation. Fuel, lubricants, hydraulic fluids, paints, solvents, and other regulated materials will be stored and handled in accordance with applicable regulations. Refueling and routine equipment maintenance will occur away from water resources whenever practicable. Spill prevention and response procedures will be implemented, and any spills will be immediately contained, reported as required, and remediated in accordance with the General Permit.

No permanent impacts to stream channels, stream banks, lake bottoms, or the hydraulic function of surface water resources are anticipated.

Floodplains

Floodplain impacts would be minimized through route selection, engineering design, and implementation of construction BMPs. Transmission structures would be located outside floodplains where practicable, and floodplains and watercourses would be spanned where feasible to reduce the need for structure placement within flood-prone areas. Structures located within floodplains would be engineered to withstand anticipated flood, scour, and erosion conditions. Construction activities would maintain existing drainage patterns, avoid permanent fill to the extent practicable, implement erosion and sediment control measures, and restore temporarily disturbed areas following construction. As discussed in the climate resiliency section, the Project has been designed to maintain safe and reliable operation under projected increases in extreme precipitation and flooding throughout the life of the Project.

As further discussed in **Section 7.2.8**, Mazeppa Township provided a map created by Rochester Public Utilities (RPU) depicting the probable maximum flooding in failure scenarios associated with the Lake Zumbro Dam (see **Appendix C**). The Applicants are working with RPU to gather more details regarding the potential inundation extent and will coordinate with RPU on structure placement and design.

Wetlands

Wetland impacts will be avoided and minimized through final engineering design, construction timing, and implementation of specialized wetland construction practices. Permanent wetland impacts will be minimized through structure placement and spanning of wetland complexes where feasible.

Where wetland construction activities cannot be avoided, mitigation measures may include:

- conducting construction during frozen or dry ground conditions when practicable;
- use of timber mats, composite mats, or other low-ground-pressure construction techniques;
- use of low-ground pressure equipment designed to minimize rutting and soil disturbance;
- limiting equipment travel within wetlands to the shortest practical access route;
- segregating and stabilizing excavated material to prevent sedimentation of wetland areas; and
- restoring temporarily disturbed wetlands in accordance with permit requirements.

Temporary wetland impacts resulting from construction activities will be restored following construction. Permanent wetland impacts associated with transmission structure foundations will be mitigated as required by applicable federal, state, and local permitting authorities. The Applicants will coordinate with the USACE, MDNR, BWSR, and applicable local government units regarding mitigation requirements, as further discussed in **Section 7**.

To further protect groundwater-dependent wetlands and calcareous fens, structure siting and final engineering design will consider local hydrogeologic conditions, including the presence of karst features, shallow bedrock, and identified groundwater resources. If geotechnical investigations

identify the potential for groundwater interception or dewatering during construction, the Applicants will evaluate measures to avoid or minimize changes to groundwater flow patterns that could affect nearby groundwater-dependent natural resources. Construction dewatering, if required, will be conducted in accordance with applicable permit requirements and agency recommendations. The Applicants have initiated and will continue to coordinate with the MDNR regarding the potential to affect calcareous fens or other groundwater-dependent resources (see **Appendix C**).

Long-term vegetation management within the transmission line right-of-way will maintain compatible vegetation communities and may result in localized conversion of forested wetlands to scrub-shrub or emergent wetland communities. Additional mitigation for wetland community conversion, if required, will be determined during permitting and agency consultation.

The Applicants will obtain all necessary permits and approvals for activities affecting wetlands, surface waters, floodplains, and other regulated aquatic resources prior to construction.

6.8.7.4 Typical Route Permit Conditions

Route permits issued by the Commission typically contain the avoidance and minimization measures relevant to wetlands and water resources, including:

- Section 5.3.8 is a standard condition that requires the permittee to implement erosion prevention and sediment control practices recommended by the MPCA Construction Stormwater Program and obtain coverage under the General Permit, which requires the development of a SWPPP that describes methods to control erosion and runoff.

- Section 5.3.9 requires the permittee to develop wetland impact avoidance measures and implement them during construction of the HVTL.

- Section 5.3.10 is a standard condition that requires the permittee to minimize the number of trees removed from the right-of-way and preserve to the maximum extent practicable vegetation in areas such as stream crossings.

6.8.8 Vegetation

6.8.8.1 Existing Conditions

Vegetation communities within the Proposed Routes reflect the ecological setting of southeastern Minnesota and the ECS Subsections described in **Section 6.3**. The Proposed Routes cross portions of the Rochester Plateau, Blufflands, and Oak Savanna ECS Subsections, each of which historically supported varying combinations of prairie, oak savanna, and deciduous forest communities. Today, the landscape reflects a combination of agricultural use, rural development, and remaining native vegetation communities.

Existing vegetation conditions are strongly influenced by land use and land cover patterns discussed in **Section 6.4.2**. Agricultural land is the predominant land cover throughout the Proposed Routes and Proposed Rights-of-Way, with cultivated cropland representing the largest land cover category. Forest cover is concentrated along stream and river corridors, blufflands, wooded slopes, and rural woodlots. Additional vegetation communities include pasture, grasslands, wetlands, and developed lands. NLCD land cover acreages and distributions for the

Proposed Routes and Proposed Rights-of-Way are provided in **Section 6.4.2** and summarized in **Table 6.4.2-1** and **Table 6.4.2-2**.

Native vegetation communities occur throughout the Project area, particularly within public lands, conservation lands, riparian corridors, bluffland habitats, native prairie remnants, wetlands, and other undisturbed areas. Resources supporting native vegetation include NPCs, SNAs, SBS, conservation easements, and other protected lands discussed in **Sections 6.4.6**, **6.8.9** and **6.8.10** and shown in **Figures 14, 21** and **22**. There are no designated old-growth forests within the Proposed Routes (see **Section 6.6.2**). Wetland and aquatic vegetation communities are discussed in **Section 6.8.7**.

6.8.8.2 Potential Impacts

The ROI for vegetation is the Proposed Rights-of-Way. Potential impacts to vegetation would occur primarily through vegetation clearing, grubbing, equipment access, construction matting, structure installation, conductor stringing, and operation and maintenance of the Project. Vegetation impacts may be temporary or permanent depending on the type of vegetation affected and long-term transmission line clearance requirements.

Temporary impacts would result from removal of vegetation within the right-of-way, disturbance associated with construction access routes, structure work areas, conductor pulling and tensioning sites, temporary laydown areas, and areas where existing facilities are removed or modified. Disturbed areas may experience temporary loss of vegetation cover, soil compaction, rutting, or trampling. Temporary impacts would be restored following construction in accordance with the AIMP (**Appendix H**), VMP (**Appendix I**), permit requirements, and landowner agreements.

Permanent impacts would occur primarily because the Proposed Rights-of-Way will be maintained free of trees or tall-growing woody vegetation to maintain transmission line safety, reliability, and required electrical clearances. As discussed in **Section 6.4.2.1**, the Proposed Rights-of-Way would permanently affect approximately 423 acres of forested vegetation. Forested areas within the maintained right-of-way may be converted to compatible low-growing vegetation communities and would be maintained in an early successional condition through ongoing vegetation management.

Permanent vegetation impacts would also occur from the installation of transmission structures, which would occupy individual footprints ranging from approximately 45 feet by 45 feet (0.05 acres) to 60 feet by 60 feet (0.08), resulting in localized and permanent conversion of existing vegetation at structure locations. Additional permanent impacts would occur from construction of the Jefferson Ridge Switching Station and permanent access roads, where existing vegetation would be removed and replaced with maintained gravel, equipment, or other operational surfaces. The Jefferson Ridge Switching Station is proposed within cultivated cropland and would permanently convert agricultural vegetation within the facility footprint to utility infrastructure uses (see **Section 6.6.1**).

The extent of vegetation impacts has been minimized through route selection and design. The Applicants avoided forested areas and other sensitive vegetation resources to the extent practicable and, in Segment 2, have co-located much of the proposed 765 kV transmission line adjacent to or within an existing transmission right-of-way. Co-location reduces the need for new right-of-way establishment, limits additional vegetation fragmentation, and concentrates long-term vegetation management within areas already influenced by utility infrastructure.

The movement of construction equipment to, from, and between various work sites may introduce and/or spread invasive species. Terrestrial plant invasive and noxious species in Minnesota are regulated by the MDA,[187] and aquatic invasive and noxious species are regulated by the MDNR.[188] The MDNR also manages terrestrial plant invasive and noxious species on public lands and at public waters. Without appropriate prevention and control measures, invasive species may become established within disturbed areas and compete with desirable native and agricultural vegetation. Invasive species prevention and management measures are described in the VMP and are summarized in **Section 6.8.8.3**.

6.8.8.3 Mitigation Measures

The Applicants will avoid, minimize, and restore vegetation impacts through route design, construction planning, restoration activities, and implementation of the AIMP (**Appendix H**) and VMP (**Appendix I**). These plans establish procedures for vegetation protection, restoration, monitoring, and invasive species management during construction, operation, and maintenance of the Project and are reviewed by state resource agencies, such as MDA.

Vegetation impacts will be minimized through careful siting of structures, use of existing roads and access routes where practicable, co-location with existing utility rights-of-way where feasible, and avoidance of forested areas and other sensitive vegetation resources to the extent practicable. Clearing limits will be established prior to construction and vegetation disturbance will be limited to the areas necessary for construction, operation, and maintenance of Project facilities.

Temporarily disturbed areas will be stabilized and restored following construction. Restoration and revegetation measures may include soil stabilization, temporary erosion-control measures, temporary seeding, and permanent revegetation with approved seed mixes appropriate for the surrounding vegetation communities and land use. Where appropriate, permanent seed mixes will incorporate native species commonly occurring within the Project area or commercially available from regional seed sources.

The Applicants will manage documented occurrences of terrestrial plant invasive and noxious species that are listed as “eradicate”[189] or “control”[190] under the “Prohibited Noxious Weed” category by the MDA. Further, the Applicants will adhere to the requirements set forth by the USFWS and MDNR for public lands and waters crossed, and the MDNR Natural Heritage Review consultation process. The Applicants propose to implement the following BMPs during construction to minimize the potential for the introduction or spread of terrestrial plant invasive and noxious species, which are further described in the VMP:

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187 Minn. Stat. § 18.75-18.913

188 MDNR. Undated. Invasive Species in Minnesota. Available online at: https://www.dnr.state.mn.us/invasives/index.html. Accessed July 2026.

189 Prohibited noxious weeds placed on the noxious weed eradicate list are plants that are not currently known to be present in Minnesota or are not widely established. These species must be eradicated (Minn. Stat. §18.771 (b)(1)). This list is available at: https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list.

190 Prohibited noxious weeds placed on the noxious weed control list are plants that are already established throughout Minnesota or regions of the state. Species on this list must be controlled (Minn. Stat. §18.771 (b)(1)). This list is available at: https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list.

- limiting grading and excavation to areas surrounding pole structure foundations, and only as needed along access roads and workspace areas for a level and safe working area;

- utilizing construction mats to minimize ground disturbance;

- all disturbed areas will be revegetated using seed mixes labelled “Noxious Weeds; None Found” in accordance with regulations and will utilize yellow tag seed when available;

- complying with General Permit, including stabilization requirements, and inspection, maintenance and repair of erosion and sediment control BMPs. Certified weed-free straw or weed-free hay will be used for erosion and sediment control BMPs;

- cleaning and inspecting construction equipment prior to entering the site to prevent the introduction and spread of invasive species;

- manual, mechanical, or chemical management of invasive and noxious weed infestations; and

- the Construction Field Representative will oversee BMP installation and effectiveness.

Following construction, vegetation management activities will focus on maintaining compatible low-growing vegetation within the rights-of-way while minimizing unnecessary disturbance. Existing low-growing vegetation will be retained wherever practicable, and vegetation management activities will be conducted in a manner consistent with safety, reliability, permit requirements, and applicable agency guidance.

With implementation of these avoidance, minimization, restoration, and management measures, most vegetation impacts are expected to be temporary and localized. Permanent impacts would be limited primarily to the conversion and maintenance of forested or woody vegetation within the maintained transmission line right-of-way, which cannot be entirely avoided because of transmission line clearance, safety, and reliability requirements. Additional resource-specific mitigation measures, if necessary, will be developed through agency consultation and environmental permitting.

6.8.8.4 Typical Route Permit Conditions

Route permits issued by the Commission typically contain the avoidance and minimization measures relevant to vegetation, including:

- 5.3.5 requires the Permittee to limit temporary easements to special construction access needs and additional staging or lay-down areas required outside of the authorized right-of-way. Temporary space shall be selected to limit the removal and impacts to vegetation.

- Section 5.3.8 requires the permittee to implement erosion prevent and sediment control practices recommended by the MPCA Construction Stormwater Program and obtain coverage under the General Permit, which requires the development of a SWPPP that describes methods to control erosion and runoff.

- Section 5.3.9 requires the permittee to develop wetland impact avoidance measures and implement them during construction of the HVTL.

- Section 5.3.10 requires the permittee to minimize the number of trees removed in selecting the right-of-way specifically preserving to the maximum extent practicable vegetation in areas such as trails and stream crossings. The permittee must also develop a VMP, in coordination with the VMP Working Group.

- Section 5.3.12 requires the permittee to employ BMPs to avoid the potential introduction and spread of invasive species caused by the Project on lands disturbed by construction activities.

- Section 5.3.18 is a standard condition that requires the permittee to restore the right-of-way, temporary workspaces, access roads, abandoned right-of-way, and other public or private lands affected by construction.

6.8.9 Wildlife and Habitat

6.8.9.1 Existing Conditions

Species Present

The Proposed Routes' landscape, characterized by steep bluffs, oak woodlands, cold-water streams, wetlands, riparian corridors, rural farmsteads, agricultural lands, and preserved or managed wildlife lands, provides habitat for a diversity of resident and migratory wildlife species. Representative species include white-tailed deer, wild turkey, trout, small mammals, reptiles, amphibians, waterfowl, raptors, grassland birds, forest birds, pollinators, and aquatic species.[191] Unique bluff prairies and deciduous forests may provide habitat for specialized species such as timber rattlesnake, Blanding's turtle, Louisiana waterthrush, Cerulean warbler, and other species associated with bluffland, riparian, and woodland habitats. These species may use the Proposed Routes for foraging, shelter, breeding, movement, or migratory stopover habitat.

Several rivers, streams, lakes, wetlands, and riparian corridors occur within or adjacent to the Proposed Routes (see **Section 6.8.7**). These aquatic and riparian resources provide habitat for a variety of fish, freshwater mussels, aquatic invertebrates, amphibians, reptiles, waterfowl, wading birds, furbearers, and other wildlife. Representative species include brook trout, brown trout, and rainbow trout in suitable coldwater streams; smallmouth bass and other riverine fish; freshwater mussels; northern leopard frogs; painted turtles, snapping turtles and wood turtles; great blue herons; bald eagles; beavers; and river otters. Southeastern Minnesota's coldwater streams support important trout fisheries, including native brook trout populations in suitable headwater habitats. Wood turtles, a state-threatened species, are associated with rivers and streams and adjacent terrestrial habitats in southeastern Minnesota. Twenty streams crossed by the Proposed Route are designated trout streams, as discussed in **Section 6.8.7** and shown in **Table 6.8.7-4**. Trout streams are shown on **Figure 18**.

Sensitive or Managed Wildlife Habitat

Section 6.4.6 and **Table 6.4.6-1** identify the federal and state-managed lands that are within 1 mile of the Project and crossed by the Proposed Routes and Proposed Rights-of-Way. In addition, to these properties, **Table 6.8.9-1** identifies conservation easements that occur within Segment 2

[191] MDNR. 2026. Minnesota's Wildlife Action Plan 2025 – 2035. Available at: https://www.dnr.state.mn.us/mnwap/index.html. Last accessed June 2026.

of the Proposed Route and Right-of-Way. Segment 1 and Q-9 do not cross known conservation easements. Conservation easements are areas designated by a legal instrument (i.e., contract, easement, regulation) that limits or conditions certain uses of the land to fulfill the respective conservation purpose. These features are shown on **Figure 21**.

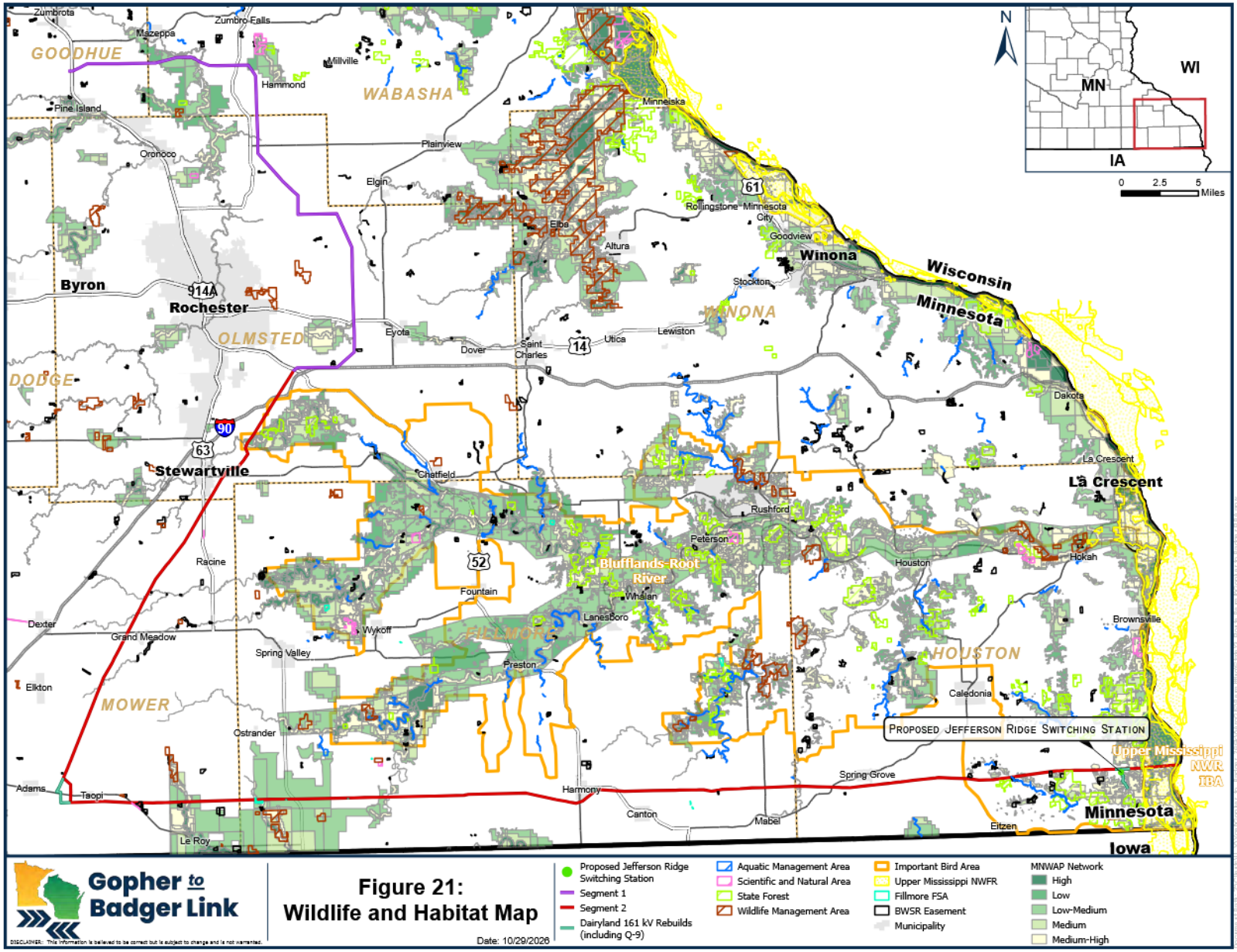
TABLE 6.8.9-1

Conservation Easements Crossed by the Project

Managing Agency	Easement Type	County	Proposed Route (acres)	Right-of-Way (acres)*	Easement No.
Segment 2					
BWSR	CREP II – HEL	Fillmore	1.7	0.0	23-11-07-01
BWSR	RIM A - Marginal Cropland - Perpetual	Houston	11.9	1.4	28-03-09-06
BWSR	RIM D - Other - Perpetual	Houston	4.4	0.0	28-03-91-01
BWSR	PWP	Houston	16.2	3.3	28-03-93-03-B
BWSR	RIM A - Marginal Cropland - Perpetual	Mower	4.6	0.0	50-02-91-01
BWSR	RIM 4 – Wetland Restoration	Mower	32.3	4.8	50-02-94-01
BWSR	RIM C – Riparian Lands – Perpetual	Mower	17.8	0.0	50-04-25-09
BWSR	RIM C – Riparian Lands – Perpetual	Mower	2.8	0.0	50-09-91-01
BWSR	CREP II – Riparian	Mower	0.2	0.0	50-12-07-01
NRCS	Fillmore Farm Service Agency (FSA)	Fillmore	13.7	1.3	NA
		TOTAL	**105.6**	**10.8**	

* Gray shading indicates that the easement is crossed by the Proposed Right-of-Way

There are approximately 106 acres of conservation easements located along the Proposed Route, all located within Segment 2.


Zumbrota
Zumbro Falls
Mazeppa
GOODHUE
Millville
Hammond
WABASHA
Pine Island
Minneiska
Plainview
Oronoco
Elgin
61
Rollingstone
Minnesota City
Elba
Goodview
Winona
Altura
Stockton
Wisconsin
Minnesota
Byron
914A
Rochester
WINONA
OLMSTED
Eyota
Dover
Saint Charles
14
Utica
Lewiston
DODGE
Dakota
90
63
Stewartville
Chatfield
La Crescent
Rushford
Peterson
Houston
Hokah
Racine
52
Bluffdale-Root River
Fountain
Whalan
Lanesboro
Brownsville
Dexter
Grand Meadow
Wykoff
Spring Valley
Preston
HOUSTON
Elkton
MOWER
Caledonia
Ostrander
Proposed Jefferson Ridge Switching Station
Upper Mississippi NWR IBA
Adams
Taopi
Harmony
Spring Grove
Canton
Mabel
Minnesota
Eitzen
Le Roy
Iowa
N
WI
MN
IA
0 2.5 5 Miles
Gopher to Badger Link
Figure 21:
Wildlife and Habitat Map
Date: 10/29/2026
Proposed Jefferson Ridge Switching Station
Segment 1
Segment 2
Dairyland 161 kV Rebuilds (including Q-9)
Aquatic Management Area
Scientific and Natural Area
State Forest
Wildlife Management Area
Important Bird Area
Upper Mississippi NWFR
Fillmore FSA
BWSR Easement
Municipality
MNWAP Network
High
Low
Low-Medium
Medium
Medium-High

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The Conservation Reserve Enhancement Program (CREP), administered by the Farm Service Agency (FSA), protects more than 20 million acres of American topsoil from erosion and is designed to safeguard the nation's natural resources. In Minnesota, BWSR helps administer this program, in coordination with the Reinvest in Minnesota (RIM) program, through partnerships with local Soil and Water Conservation Districts. By reducing water runoff and sedimentation, CREP protects groundwater; helps improve the condition of lakes, rivers, ponds, and streams; and is a major contributor to increased wildlife populations in many parts of the country.

The RIM Reserve Partnership Easement[192] is a land conservation program established to pay farmers a yearly rental fee for agreeing to take environmentally sensitive land out of agricultural production with the intent of improving environmental health and quality.[193]

The RIM Wetlands Reserve program[194] is a state and federal conservation partnership, managed by BWSR, that compensates private landowners for restoring previously drained wetlands and adjacent native grasslands via permanent conservation easements.

The Permanent Wetland Preserves (PWP) program[195] is a state conservation easement program that aims to permanently protect at-risk wetlands on private land. PWP enrolls eligible wetlands (types 1, 2, 3, and 6) in a permanent conservation easement, providing landowners with rental payments based on a percentage of the land's assessed value.

Depending on the governing conservation program, specific restrictions may be applied that could limit or restrict development of a transmission line. As Project routing progresses, the Applicants will work with federal, state, and county agencies and landowners to identify conservation easements that may be affected by the Project. If a conservation easement cannot be avoided through modifications in Project routing, the Applicants will work with the owner and managing agency to develop mitigation measures.

Wildlife Action Network and Large Block Habitats

The Minnesota State Wildlife Action Plan identifies Species in Greatest Conservation Need (SGCN), which are native fish, wildlife, and invertebrate species that are rare, declining, vulnerable to habitat loss, or otherwise at risk of becoming threatened or endangered in the future. Many state-listed and federally listed species that may occur within the Project area are also designated as SGCN. Conservation of SGCN focuses on protecting and maintaining the habitat features necessary to support these species and prevent further population declines.[196]

To support conservation planning, the MDNR developed the Wildlife Action Network (WAN), a statewide geospatial dataset that identifies habitats and landscape features important to

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192 BWSR. 2018. *RIM Handbook*. Available online at: https://bwsr.state.mn.us/sites/default/files/2019-05/RIM_Handbook.pdf. Last accessed June 2026.

193 BWSR. 2026. MN CREP for Landowners. Available online at: https://bwsr.state.mn.us/mn-crep-landowners. Last accessed June 2026.

194 BWSR. 2026. RIM Wetlands and Peatlands. Available online at: https://bwsr.state.mn.us/rim-wetlands. Last accessed June 2026.

195 BWSR. 2026. Conservation Easement Program. Available online at: https://bwsr.state.mn.us/conservation-easements. Last accessed June 2026.

196 MDNR. 2026. Minnesota's Wildlife Action Plan 2025-2035. Available online: https://www.dnr.state.mn.us/mnwap/index.html. Accessed June 2026.

SGCN.[197] WAN mapping includes areas such as lakes of biological significance, rivers and streams with high biological integrity, high-value forests, grasslands, wetlands, and large habitat complexes that provide breeding, foraging, migration, and dispersal habitat for wildlife populations.

Several WAN-mapped features occur within the Proposed Routes, which are ranked by the MDNR for their relative conservation value of habitat for SGCN (**Table 6.8.9-2** and **Figure 21**). These resources are concentrated within the bluffland, floodplain, forest, prairie, and river corridor landscapes of southeastern Minnesota and contribute to regional habitat connectivity and ecological function.

TABLE 6.8.9-2

Wildlife Action Network Crossed by Proposed Routes

Proposed Route	Low	Low-Medium	Medium	Medium-High	High	TOTAL
Segment 1	423	1,151	34	49	0	**1,657**
Segment 2	251	4,754	451	1,389	351	**7,196**
Q-9	0	3	186	242	0	**431**
TOTAL	**674**	**5,908**	**670**	**1,680**	**351**	**9,284**

The MDNR recognizes large habitat blocks as extensive areas of relatively contiguous natural land cover that provide important habitat for wildlife species sensitive to fragmentation and human disturbance. These landscapes support movement, breeding, foraging, and sheltering opportunities and help maintain ecological connectivity across the region. Large habitat blocks identified within the Proposed Routes include portions of the Upper Mississippi River NWFR, RJD Memorial Hardwood State Forest, Shooting Star Prairie SNA, Rustic Creek WMA, and several AMAs. These resources are discussed further in **Section 6.4.6**.

Important Bird Areas

The Proposed Routes intersect sensitive areas for migratory birds, including the Blufflands-Root River IBA and the Upper Mississippi NWFR IBA. Segment 2 of the Proposed Route crosses approximately 5,160 acres of the Blufflands-Root IBA and 335 acres of the Upper Mississippi NWFR IBA. The Q-9 Proposed Route crosses approximately 700 acres of the Blufflands-Root IBA. Segment 1 does not cross either IBA. These features are shown on **Figure 21**.

Blufflands-Root River IBA is located primarily in Houston and Fillmore Counties and also extends into Winona and Olmsted Counties. This area provides a mix of wooded valleys, coulees, agricultural areas, riparian corridors, and floodplain habitats that support breeding and migratory bird species.[198] The Blufflands-Root River IBA is marked by deep river valleys, steep river banks, floodplain forests and upland deciduous forests. This mix of habitats is important to both breeding and migrating species and is located in an area otherwise dominated by agriculture. The river valleys and upland deciduous forests are home to several species of special concern in

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197 MDNR. 2026. MNWAP Wildlife Action Network. Available online at: https://gisdata.mn.gov/dataset/env-mnwap-wildlife-action-netwrk. Accessed June 2026.

198 Audubon Society. 2024. Blufflands-Root River. Available online at: https://gis.audubon.org/portal/apps/dashboards/ab402cba1acc461d924783cf0f5e181c#site=3973. Accessed December 2025.

Minnesota, including the Louisiana Waterthrush, Cerulean Warbler, and Acadian Flycatcher, which all nest within the boundaries of this IBA. The deciduous forests and floodplain areas provide prime habitat for Red-shouldered Hawk, Barred Owl, Yellow-bellied Sapsucker, Tufted Titmouse, Wood Thrush, Blue-winged Warbler, Prothonotary Warbler, and Scarlet Tanager. The open grassland areas provide prime habitat for several sparrow species as well as Bobolink, and Eastern Meadowlark.

Segment 2 of Proposed Route crosses the Upper Mississippi NWFR IBA on the far eastern portion of the Route, adjacent to the Wisconsin border. Habitat types include bottomland hardwood forest, river, open pools, cliff, and backwater habitats. These habitats support a diverse assemblage of resident and migratory birds, including bald eagles, American white pelicans, tundra swans, canvasback ducks, wood ducks, great blue herons, great egrets, prothonotary warblers, and other waterfowl, wading birds, and forest-dwelling songbirds. The whole Upper Mississippi River NWFR is also a Global IBA spanning 240,000 acres along 261 river miles from Wabasha, Minnesota to Rock Island, Illinois. It supports over 300 bird species and serves as a major breeding, resting, and feeding corridor along the Mississippi River Flyway.

6.8.9.2 Potential Impacts

The ROI for wildlife is the Proposed Rights-of-Way. Wildlife impacts are anticipated to be moderate and would primarily result from habitat disturbance, vegetation clearing, temporary displacement during construction, and long-term maintenance of compatible vegetation within the transmission line right-of-way.

Construction activities may temporarily disturb wildlife through increased human presence, equipment operation, noise, lighting, and vegetation removal. Mobile wildlife species, such as deer, wild turkey, waterfowl, and most birds, typically avoid active construction areas and recolonize adjacent habitats following construction. Smaller or less-mobile species, including amphibians, reptiles, and small mammals, may be more susceptible to direct impacts because they are less able to avoid construction activities.

Temporary habitat impacts may occur within agricultural lands, grasslands, forests, wetlands, riparian corridors, conservation easements, and managed wildlife lands crossed by the Proposed Rights-of-Way. Disturbance may occur due to temporary vegetation removal, soil disturbance, habitat fragmentation, edge effects, disruption of movement corridors, and displacement during breeding, nesting, migration, or other sensitive life stages.

Aquatic wildlife impacts are expected to be minimal. Aquatic resources crossed by the Proposed Rights-of-Way include rivers, streams, lakes, wetlands, riparian corridors, and designated trout streams discussed in **Section 6.8.7**. Temporary impacts to aquatic wildlife could occur from construction activity near waterways, including vegetation clearing, equipment operation, soil disturbance, and the installation and removal of temporary bridges or culverts. These activities could temporarily increase erosion, sedimentation, and turbidity and could disturb or displace fish and other aquatic organisms from the immediate work area.

Clearing of riparian vegetation could also reduce streamside cover and, where woody vegetation is removed, result in longer-term changes to aquatic habitat through reduced shading, potential changes in water temperature, and reduced inputs of terrestrial vegetation and insects that contribute to aquatic food webs. The extent and duration of these effects would depend on the amount and type of vegetation removed and the characteristics of the affected water resource.

Impacts would generally be localized and minimized through implementation of the water resource protection measures described in **Section 6.8.7.**

Permanent habitat impacts would primarily result from vegetation management and maintenance within the transmission line right-of-way and the permanent conversion of 3.4 acres of agricultural land to the Jefferson Ridge Switching Station. As discussed in **Section 6.8.8**, approximately 423 acres of forested vegetation would be converted to compatible low-growing vegetation communities within the maintained right-of-way. This conversion may alter habitat structure and wildlife use patterns in localized areas. However, early successional vegetation established within the maintained right-of-way may provide habitat and foraging opportunities for some species, including pollinators, small mammals, certain reptiles and amphibians, and grassland-associated wildlife.

The Proposed Rights-of-Way also cross approximately 10.6 acres of conservation easements and occur within or adjacent to federal, state, and locally managed conservation lands described in **Section 6.4.6**. Potential impacts on these areas would be similar to those described above and may include temporary construction disturbance, vegetation clearing, habitat fragmentation, edge effects, and long-term maintenance of compatible low-growing vegetation within the right-of-way. Because much of Segment 2 would be co-located with an existing transmission right-of-way, Project-related impacts generally would occur adjacent to existing utility infrastructure rather than creating entirely new rights-of-way through wildlife habitat.

Potential impacts to WAN habitats would vary depending on the conservation value of the habitat crossed by the Proposed Rights-of-Way. Approximately 389 acres of WAN-mapped habitat occur within the Proposed Rights-of-Way, categorized as follows (see **Table 6.8.9-3** and **Figure 21**):

- 261 acres of low and low-medium conservation value;
- 18 acres of medium-rated conservation value;
- 84 acres of medium-high conservation value; and
- 26 acres of high-rated conservation value.

Construction activities, including vegetation clearing, access road installation, structure placement, and increased human activity, could result in temporary habitat disturbance and localized habitat loss. In forested and other contiguous habitat areas, construction and operation of the Project could contribute to habitat fragmentation and edge effects that may reduce habitat suitability for some SGCN and other wildlife species. Because higher-rated WAN areas are associated with concentrations of important wildlife habitats and ecological features, impacts within these areas have a greater potential to affect habitat connectivity and wildlife use than impacts within lower-rated WAN areas.

TABLE 6.8.9-3

Wildlife Action Network Crossed by Proposed Rights-of-Way

Proposed Route	Low	Low-Medium	Medium	Medium-High	High	TOTAL
Segment 1	24	54	1	<1	0	**80**
Segment 2	13	170	15	83	26	**307**
Q-9	0	0	1	0	0	**1**
TOTAL	**37**	**224**	**18**	**84**	**26**	**389**

The Segment 2 and Q-9 Proposed Rights-of-Way cross 373 and 15 acres, respectively of the Blufflands-Root River IBA and Segment 2 crosses approximately 43 acres of the Upper Mississippi River NWFR IBA. Construction activities may temporarily disturb migratory birds using these habitats for nesting, foraging, or migration. During operation, transmission lines may present a collision risk for some bird species, particularly near wetlands, rivers, riparian corridors, floodplain habitats, and other movement corridors. Waterfowl, raptors, shorebirds, and other large-bodied birds are generally more susceptible to collision risk than smaller bird species. Project design will be done in accordance with Avian Power Line Interaction Committee (APLIC) guidelines.

Bald eagles and other raptors may use the Project area for nesting, foraging, roosting, and migration. Suitable raptor habitat occurs throughout the Proposed Routes, particularly within forested river corridors, blufflands, riparian areas, and the Mississippi River corridor. Construction activities could result in temporary disturbance to nesting or roosting raptors if active nests occur near construction areas. During operation, raptors may be susceptible to collision with conductors or shield wires, particularly in areas with concentrated flight activity near river valleys, wetlands, and other major movement corridors. However, raptors are generally considered less vulnerable to collision than waterfowl and some migratory bird species because of their flight behavior and visual acuity.

6.8.9.3 Mitigation Measures

The Applicants will avoid and minimize impacts to wildlife through Project design, routing, construction planning, habitat restoration, and implementation of the AIMP (**Appendix H**), VMP (**Appendix I**), and applicable permit conditions.

Wildlife habitat impacts have been minimized through route selection and co-location with existing infrastructure where practicable. In Segment 2, a substantial portion of the proposed 765-kV transmission line will utilize an existing transmission right-of-way, reducing the need for new habitat fragmentation and concentrating long-term vegetation management within an already disturbed landscape.

Additional wildlife protection measures include:

- limiting vegetation clearing and ground disturbance to the minimum area necessary for construction and operation;
- using existing roads and access routes where practicable;

- avoiding or minimizing disturbance to wetlands, streams, riparian corridors, and other sensitive habitats;
- restoring temporarily disturbed areas following construction using site-appropriate vegetation;
- implementing invasive and noxious species management described in the VMP;
- limiting construction access and staging activities within sensitive habitats where practicable; and
- coordinating with federal, state, and local agencies, land managers, and conservation easement holders regarding access, restoration, and habitat protection measures.

To protect aquatic wildlife, waterbodies will be spanned wherever practicable and transmission structures will be located outside stream channels and lake basins where feasible. Temporary bridges, culverts, matting, or other crossing methods will be designed, installed, maintained, and removed in accordance with applicable permit requirements. Erosion and sediment control BMPs will be implemented to minimize effects on fish, mussels, aquatic invertebrates, amphibians, reptiles, and other aquatic species.

The Applicants will coordinate with USFWS and MDNR regarding wildlife protection measures and construction timing recommendations. The USFWS provided comments to the Applicants on August 20, 2026 regarding potential conservation measures that included minimizing habitat fragmentation by adhering to existing developed rights-of-way to the greatest extent possible and enhancing native plant communities by using native and local seed mixes, cleaning vehicles to manage the spread of invasive and noxious species (see **Appendix C**). Where appropriate and consistent with agency guidance, vegetation clearing and construction activities may be scheduled to avoid sensitive breeding, nesting, migration, or other seasonal wildlife use periods.

As further summarized in **Section 7.2.7** and documented in **Appendix C**, the Applicants have met with BWSR regarding the Proposed Rights-of-Way crossings of conservation easements. BWSR staff indicated additional evaluation would be required at the time of permitting based on the route designated by the Commission to assess compatibility of the Project with each easement. The Applicants will continue to coordinate with BWSR during the permitting process.

To reduce avian impacts, Project design will be done in accordance with APLIC guidelines.

With implementation of these avoidance, minimization, restoration, and habitat protection measures, wildlife impacts are expected to be moderate and primarily localized to the maintained right-of-way. Aquatic wildlife impacts are expected to be minimal, and no significant long-term effects on regional wildlife populations are anticipated.

6.8.9.4 Typical Route Permit Conditions

The typical route permit requirements discussed in **Section 6.8.8.4** with respect to vegetation would also avoid and minimize impacts on wildlife. In addition, the Commission typically includes several route permit conditions to mitigate impacts to wildlife and wildlife habitat, including:

- Section 5.3.7 is a standard condition that requires the permittee to minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the vicinity of the transmission facility during construction and maintenance.

- Section 5.3.8 is a standard condition that requires the permittee to implement erosion prevention and sediment control practices recommended by the MPCA Construction Stormwater Program and obtain coverage under the General Permit, which requires the development of a SWPPP that describes methods to control erosion and runoff.

- Section 5.3.9 is a standard condition that requires the permittee to develop wetland impact avoidance measures and implement them during construction.

- Section 5.3.12 requires the permittee to employ BMPs to avoid the potential introduction and spread of invasive species due to the Project on lands disturbed by construction activities.

- Section 5.3.16 requires the permittee to coordinate with the MDNR to identify areas of the transmission line where avian flight diverters will be incorporated.

- Section 5.3.18 requires the permittee to restore the right-of-way, temporary workspaces, access roads, abandoned right-of-way, and other public or private lands affected by construction.

- Section 5.3.22 requires the permittee to use shielded and downward facing lighting and LED lighting that minimizes blue hue.

- Section 5.3.24 requires the permittee to use only “bio-netting” or “natural netting” types of erosion control materials and mulch products without synthetic (plastic) fiber additive or malachite green dye.

6.8.10 Rare and Unique Natural Resources

This section describes the rare and unique natural resources identified within and adjacent to the Proposed Routes and Proposed Rights-of-Way, evaluates potential impacts associated with construction and operation of the Project, and outlines measures to avoid, minimize, and mitigate those impacts. The assessment is based on a review of the MDNR Minnesota Conservation Explorer (MCE), Natural Heritage Information System (NHIS) data, MBS data, the USFWS Information for Planning and Consultation (IPaC) system, available field observations, and agency coordination. Detailed agency correspondence and database review results are provided in **Appendix C**.

6.8.10.1 Existing Conditions

MDNR Ecologically Significant Areas

The Applicants used the MDNR MCE and NHIS to identify ecologically significant areas and known occurrences of state-listed species within and adjacent to the Proposed Routes.[199] These

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[170] MDNR. 2026. Minnesota Conservation Explorer. Available online at: https://mce.dnr.state.mn.us/home. Accessed June 2026.

resources include NPCs, SBS, native prairie, wildlife habitat conservation areas, and other ecologically significant features that support rare species and high-quality native habitats. A Natural Heritage Review Request (No. 2026-00499) was submitted to the MDNR on June 11, 2026. The Applicants also reviewed available NHIS records within 1 mile of the Project to support route evaluation, impact assessment, and development of avoidance and minimization measures. A formal review from MDNR was received on October 2, 2026, confirming the initial results found by Merjent (**Appendix C**).

MDNR ecologically significant areas include NPCs, SBS, and Rare Natural Communities (RNCs). These areas are described in the sections that follow and are shown on **Figure 22**.

Wetlands, floodplains, and PWI wetlands, basins and watercourses are discussed in **Section 6.8.7**. Minnesota Wildlife Action Plan Species and WAN are discussed in **Section 6.8.8**. Public conservation and recreational lands, which also serve as large blocks and other important habitats are discussed in **Section 6.4.6**.

Native Plant Communities, Sites of Biodiversity Significance, and Rare Natural Communities

NPCs and SBS that occur within the Proposed Routes are presented in **Table 6.8.10-1** and **Table 6.8.10-2**, respectively.

TABLE 6.8.10-1

Minnesota Biological Survey Native Plant Communities within Proposed Routes

NPC Type[a]	Acres within Proposed Routes
Segment 1	**9.1**
Ups13c – Dry Bedrock Bluff Prairie (Southern)	9.1
Segment 2	**913.7**
A_CTV – Cultivated	43.6
CTs12 – Southern Dry Cliff	3.4
CTs43a1 – Maderate Cliff, Limestone Subtype	13.4
FDs38a – Oak – Shagbark Hickory Woodland	24.1
FFs59b – Swamp White Oak Terrace Forest	27.3
FFs59c – Elm – Ash – Basswood Terrace Forest	87.3
FFs59c-d – Elm – Ash – Basswood Terrace Forest - disturbed	45.5
FFs68a – Silver Maple – (Virgina Creeper) Floodplain Forest	189.8
MHs37 – Southern Dry – Mesic Oak Forest	92.3
MHs37-d – Southern Dry – Mesic Oak Forest - disturbed	28.4
MHs37a – Red Oak – White Oak Forest	18.0
MHs37b – Red Oak – White Oak – (Sugar Maple) Forest	106.4
MHs38a – White Pine – Oak – Sugar Maple Forest	43.4
MHs38a-d – White Pine – Oak – Sugar Maple Forest - disturbed	2.5
MHs38c – Red Oak – Sugar Maple – Basswood (Bitternut Hickory) Forest	12.0
MHs39a – Sugar Maple – Basswood – (Bitternut Hickory) Forest	118.8
MHs39b – Sugar Maple – Basswood – Red Oak – (Blue Beech) Forest	2.4
MHs39a-d – Sugar Maple – Basswood – Red Oak – (Blue Beech) Forest	12.6
MHs49a-d – Elm – Basswood – Black Ash – (Hackberry) Forest – disturbed	8.2
MRn93 – Northern Bulrush – Spikerush Marsh	13.4
Ups13c – Dry Bedrock Bluff Prairie (Southeastern)	11.9
Ups23a – Mesic Prairie (Southern)	6.3
WMs83a – Seepage Meadow/Carr	2.7

TABLE 6.8.10-1

Minnesota Biological Survey Native Plant Communities within Proposed Routes

NPC Type[a]	Acres within Proposed Routes
Q-9	**50.6**
FDs38a – Oak – Shagbark Hickory Woodland	4.4
MHs39b – Sugar Maple – Basswood – Red Oak – (Blue Beech) Forest	41.4
Ups13c – Dry Bedrock Bluff Prairie (Southeastern)	4.7

[a] MDNR. 2026. MNDNR Native Plant Communities. Available online at: https://gis.data.mn.gov/maps/minnesota::mndnr-native-plant-communities-1/about. Accessed July 2026.

[b] Does not include NPC categorized as disturbed

TABLE 6.8.10-2

Minnesota Biological Survey Sites of Biodiversity Significance within the Proposed Routes

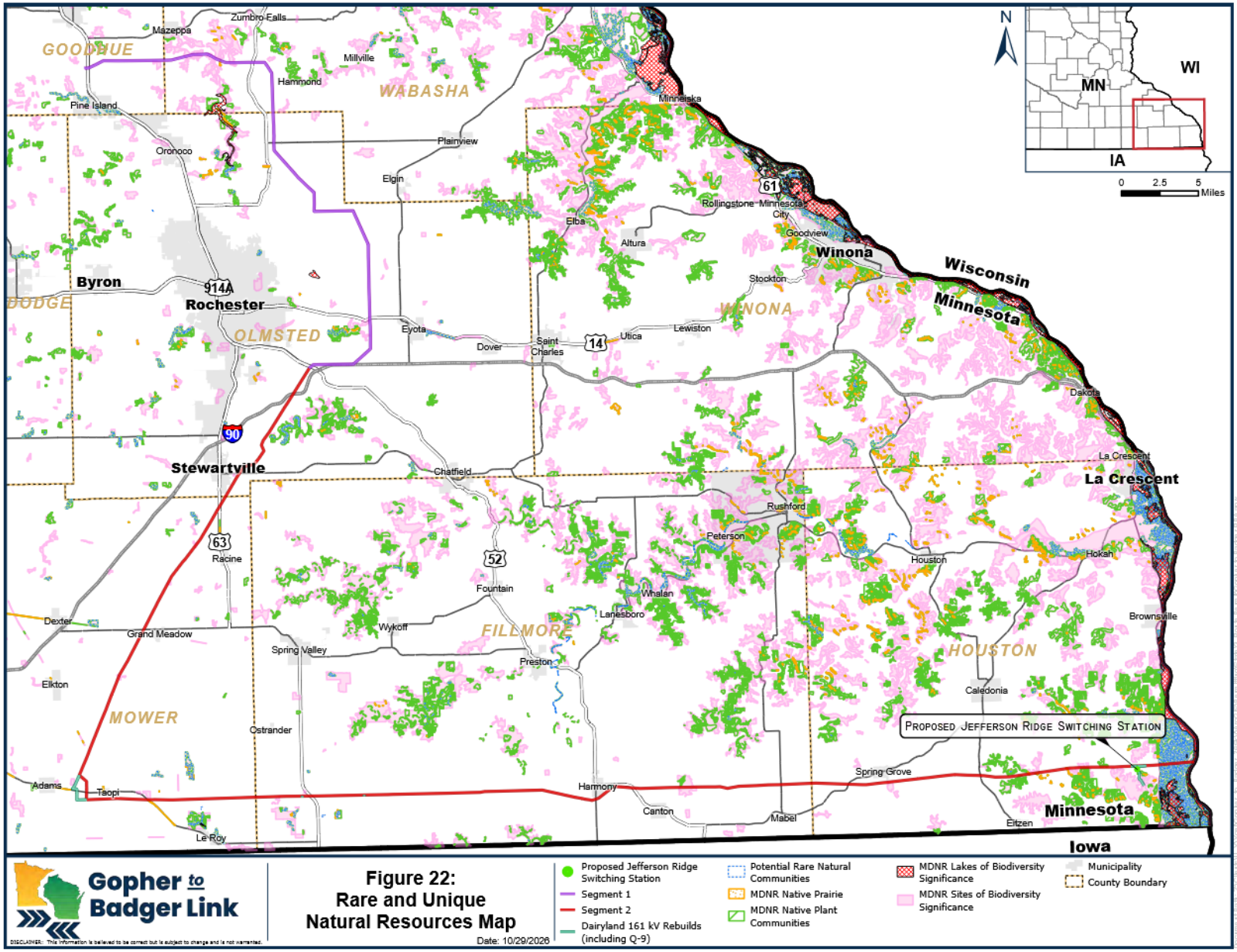
Site Name	Ranking	Status	Acres within Proposed Route
Segment 1			**751.1**
Chester Woods – East	Moderate	Final	13.9
Mazeppa 10	Moderate	Final	20.7
Zumbro 11	Moderate	Final	94.4
Zumbro River – Woodville	Moderate	Final	44.7
Mazeppa 17	Below	Final	294.8
Mazeppa 22	Below	Final	233.5
Pine Island 13	Below	Final	22.3
Viola 28 NE	Below	Final	18.7
Viola 28 SW	Below	Final	8.1
Segment 2			**1,728.6**
Beaver Creek	Outstanding	Final	15.6
Lodi 24	Outstanding	Final	4.6
Simpson Maderitic Cliffs	Outstanding	Final	344.9
Fugle's Mill	High	Final	98.1
Pickerel Slough	High	Final	65.1
Pleasant Grove 16	High	Final	115.7
Reno Bottoms (Running Slough)	High	Final	208.6
Table Rock	High	Final	0.2
Winnebago 18	High	Final	2.3
Cabbage Ridge North	Moderate	Final	37.0
Canton Township 15	Moderate	Final	181.7
Clayton 30	Moderate	Final	2.3
Hayshore Lake	Moderate	Final	140.6
Jefferson 21	Moderate	Final	14.3
Lodi 13 Northeast	Moderate	Final	0.8
Mayville 36	Moderate	Final	32.4
Racine Highway 63	Moderate	Final	3.6
Winnebago 9	Moderate	Final	72.4
Winnebago 13	Moderate	Final	133.8
Clayton 3	Below	Final	40.3
Frankford 6	Below	Final	14.5
Le Roy 7	Below	Final	8.8

TABLE 6.8.10-2

Minnesota Biological Survey Sites of Biodiversity Significance within the Proposed Routes

Site Name	Ranking	Status	Acres within Proposed Route
Lodi 7	Below	Final	36.4
Lodi 13	Below	Final	84.0
Lodi 14	Below	Final	15.7
Racine 28	Below	Final	19.1
Spring Grove 13	Below	Final	35.8
Q-9			**166.4**
Jefferson 21	Moderate	Final	7.2
Twin Peaks Bluffs	Moderate	Final	159.2

Source: MDNR. 2026. MBS SBS. Available online at: https://www.arcgis.com/home/item.html?id=cfb2da4b8adb4fa88654cd6e7b604b9b#overview. Accessed July 2026.


N
WI
MN
IA
0 2.5 5 Miles
GOODHUE
WABASHA
DODGE
OLMSTED
WINONA
FILLMORE
HOUSTON
MOWER
Zumbro Falls
Mazeppa
Millville
Hammond
Pine Island
Oronoco
Plainview
Elgin
Minneiska
Rollingstone
Minnesota City
Elba
Altura
Goodview
Winona
Stockton
Wisconsin
Minnesota
Byron
Rochester
914A
Eyota
Dover
Saint Charles
14
Utica
Lewiston
Dakota
La Crescent
Stewartville
Chatfield
Rushford
Peterson
Houston
Hokah
Brownsville
63
Racine
52
Fountain
Whalan
Lanesboro
Dexter
Grand Meadow
Wykoff
Spring Valley
Preston
Elkton
Caledonia
Ostrander
PROPOSED JEFFERSON RIDGE SWITCHING STATION
Spring Grove
Adams
Taopi
Harmony
Canton
Mabel
Elizen
Le Roy
Minnesota
Iowa
Gopher to Badger Link
Figure 22:
Rare and Unique
Natural Resources Map
Date: 10/29/2026
Proposed Jefferson Ridge Switching Station
Segment 1
Segment 2
Dairyland 161 kV Rebuilds (including Q-9)
Potential Rare Natural Communities
MDNR Native Prairie
MDNR Native Plant Communities
MDNR Lakes of Biodiversity Significance
MDNR Sites of Biodiversity Significance
Municipality
County Boundary

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NPCs are groups of native plants not significantly altered by human activities or by introduced species. NPCs are classified into units which take into consideration the vegetation, hydrology, landforms, soils, and natural disturbance regimes.[200] NPC classifications are used throughout Minnesota for vegetation management, conservation, and land-use planning. The classification is based on plant species composition and was developed through field data collected from sample plots. The classification system is hierarchical with units described at levels ranging from landscape scale systems to local communities. NPCs within the Proposed Routes include floodplain forest, maple-basswood forest, oak woodland, oak forest, marsh, seepage meadow, native prairie, cliff, and bluff prairie communities. These communities represent some of the highest-quality native vegetation remaining in southeastern Minnesota and provide habitat for numerous SGCN and state-listed plant and wildlife species. NPCs are not legally protected and development within NPCs is not prohibited.

The MBS documents SBS that are ranked based on several factors, including the quality (e.g., size and condition) of NPC within the site, the presence and numbers of rare species populations, and the site's context within the landscape (e.g., whether the site is isolated in a landscape dominated by cropland or developed land, or whether it is contiguous with or close to other areas with intact NPCs). These sites are ranked by grouping and rated within each of the state's ECS Subsections.[201] There are four ranks of SBS: Outstanding (having the best occurrences of the rarest species, NPCs, and most ecologically intact/functional landscape), High, Moderate, and Below. The rankings of the SBS crossed by the Proposed Routes are provided in **Table 6.8.10-2**.

The majority of mapped NPCs and SBS crossed by the Proposed Routes occur within Segment 2, reflecting the concentration of high-quality forest, bluffland, floodplain, prairie, and river corridor habitats in southeastern Minnesota's Driftless Area. Several Outstanding- and High-ranked SBS occur within the Proposed Routes, including Beaver Creek, Lodi 24, Simpson Maderitic Cliffs, Fugle's Mill, and Reno Bottoms.

In Minnesota, wetlands are also protected under the Wetland Conservation Act (WCA). The WCA places special preservation requirements on wetlands that qualify as RNCs. RNCs may include wetlands NPCs with high conservation status rank, or MBS sites with an Outstanding or High ranking; however, the MDNR ultimately determines whether a plant community constitutes an RNC.[202] There are no RNCs mapped by the MDNR that occur within the Proposed Routes; however, Segment 2 of the Proposed Route intersects potential RNCs, presented in **Table 6.8.10-3**.

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200 MDNR. 2026. Minnesota's Native Plant Communities. Available online at https://www.dnr.state.mn.us/npc/index.html. Accessed June 2026.

201 MDNR. 2026. MBS Site Biodiversity Significance Ranks. Available online at https://www.dnr.state.mn.us/eco/mbs/biodiversity_guidelines.html. Last accessed June 2026.

202 BWSR and MDNR. 2017. *Wetland Conservation Act Technical Guidance on "Rare Natural Communities".* Available online at: https://bwsr.state.mn.us/sites/default/files/2019-01/Wetland_WCA_Rare_Nat_Comm_Tech_Guidance.pdf. Accessed July 2026.

TABLE 6.8.10-3

Potential Rare Natural Communities within the Proposed Route

Name	Acres within Proposed Route
Segment 2	**366.7**
FFs59b – Swamp White Oak Terrace Forest	27.3
FFs59c – Elm-Ash-Basswood Terrace Forest	133.5
FFs68a – Silver Maple-(Virginia Creeper) Floodplain Forest	189.8
MRn93 – Northern Bulrush-Spikerush Marsh	13.4
WMs83a – Seepage Meadow/Carr	2.7

Source: MDNR. 2026. Potential Rare Natural Communities. Available online at: https://gis.data.mn.gov/datasets/potential-rare-natural-communities-1/explore?location=46.435000%2C-93.380000%2C7&showTable=true. Accessed July 2026.

Native Prairie

Native prairie means land that has never been plowed where native prairie vegetation originating from the site currently predominates or, if disturbed, is predominantly covered with native prairie vegetation that originated from the site. Unbroken pastureland used for livestock grazing can be considered native prairie if it has predominantly native vegetation originating from the site and conservation practices have maintained biological diversity (Minn. Stat. § 84.02 Subd. 5).[203] Native prairie is a particularly sensitive resource because it represents remnant vegetation that has never been cultivated and supports numerous rare plant and wildlife species. Native prairie has experienced substantial decline throughout Minnesota, with only a small percentage of the state's original prairie remaining.

There are two MDNR-mapped native prairie NPCs crossed by the Proposed Routes identified in **Table 6.8.10-4**, including UPs23a – Mesic Prairie (Southern) and UPs13c – Dry Bedrock Bluff Prairie (Southern).

TABLE 6.8.10-4

Native Prairie within the Proposed Routes

Name	Type	Ecological Significance	Acres within Proposed Routes
Segment 1			
UPs13c- Dry Bedrock Bluff Prairie (Southern)	Native Plant Community	Native Prairie	9.1
Segment 2			
UPs13c- Dry Bedrock Bluff Prairie (Southern)	Native Plant Community	Native Prairie	11.9
UPs23a - Mesic Prairie (Southern)	Native Plant Community	Native Prairie	6.3
Q-9			
UPs13c- Dry Bedrock Bluff Prairie (Southern)	Native Plant Community	Native Prairie	4.7

Source: MDNR. 2026. MNDNR Native Plant Communities. Available online at: https://gis.data.mn.gov/maps/minnesota::mndnr-native-plant-communities-1/about

[203] MDNR. 2026. Native Prairie Defined. Available online at: https://www.dnr.state.mn.us/prairie/restore/native-prairie-defined.html. Accessed June 2026.

A review of available MDNR mapping identified no Native Prairie Bank easements occur within the Proposed Routes.[204] If additional information becomes available during final design, the Applicants will coordinate with the MDNR regarding avoidance and protection measures.

Calcareous Fens

Calcareous fens are rare wetlands dependent on a persistent source of calcium-rich groundwater. These areas support unique plant communities that are highly sensitive to changes in both groundwater quality and quantity. Reductions in groundwater upwelling rates and changes in surface water can damage fen condition and/or extent, in some cases irreparably.[205] **Table 6.8.7-9** identified calcareous fens within 5 miles of the Proposed Rights-of-Way and provides further discussion of fen communities. There are no calcareous fens located within the Proposed Routes.

Protected Avian Species

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) which protects most native migratory bird species, nests, eggs, and occupied nest sites (see **Section 7.1.1.4**). Bald and golden eagles are afforded additional protection under the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. §§ 668–668d) as amended, which prohibits unauthorized take, disturbance, or destruction of eagles, nests, and eggs (see **Section 7.1.1.4**). The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald or golden eagles, including their parts, nests, or eggs.

Construction activities conducted within 660 feet of an active eagle nest during the nesting season may disturb nesting eagles to such a degree that adults abandon the nest, resulting in take of eggs and/or chicks. An active nest is one where eggs or chicks are present. In Minnesota, the bald eagle nesting season is generally January 15 to August 15. The Applicants reviewed aerial imagery and determined that suitable habitat for bald eagle activity, nesting, foraging, and winter roosts are present within the Proposed Routes. Large forested areas, river corridors, floodplain forests, and open water associated with the Mississippi River, Root River, Zumbro River, and their tributaries provide potentially suitable nesting, roosting, and foraging habitat for bald eagles.

Although the MBTA and the BGEPA provide protection for all migratory birds, the USFWS has also developed lists of Birds of Conservation Concern (BCC), which includes MBTA species and some non-MBTA protected species, to foster proactive conservation actions by federal and state agencies and private parties by focusing first on species of concern.[206,207,208]

The Project traverses a variety of habitats used by migratory birds, including native prairie remnants, agricultural lands, wetlands, floodplain forests, upland forests, blufflands, and major

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204 MDNR. Undated. *Minnesota Native Prairie Bank*. Available online at: https://files.dnr.state.mn.us/destinations/snas/NPBstatemap.pdf. Accessed July 2026.

205 MDNR. 2026. Calcareous Fens. Available online: https://www.dnr.state.mn.us/wetlands/calcareous-fens.html. Accessed June 2026.

206 USFWS. 2021. Birds of Conservation Concern. Available online at: https://www.fws.gov/media/birds-conservation-concern-2021. Accessed June 2026.

207 USFWS. 2024. Bird Species of Concern. Available online at: https://www.fws.gov/media/usfws-bird-species-concern. Accessed June 2026.

208 Bird Studies Canada and North American Bird Conservation Initiative (NABCI). 2014. Bird Conservation Regions. Published by Bird Studies Canada on behalf of the NABCI. Available online at: https://www.birdscanada.org/bird-science/nabci-bird-conservation-regions. Accessed June 2026.

river corridors (see **Section 6.4.2**). These habitats provide nesting, migration, stopover, and foraging opportunities for numerous migratory bird species, including species designated by the USFWS as BCC. The Project is located within the Prairie Hardwood Transition Bird Conservation Region (BCR) 23. The USFWS's IPaC tool identified 27 species considered BCC within BCR 23 that are most likely to be present in the Project Area, as shown in **Table 6.8.10-5**.

TABLE 6.8.10-5

Birds of Conservation Concern Most Likely Present in Project Area

BCR	Common Name	Scientific Name
23 (Prairie Hardwood Transition)	American Golden-plover (nb)*	*Pluvialis dominica*
	Black Tern	*Chlidonias niger surinamensis*
	Black-billed Cuckoo	*Coccyzus erythropthalmus*
	Bobolink	*Dolichonyx oryzivorus*
	Canada Warbler	*Cardellina canadensis*
	Cerulean Warbler	*Setophaga cerulea*
	Chimney Swift	*Chaetura pelagica*
	Eastern Whip-poor-will	*Antrostomus vociferus*
	Golden-winged Warbler	*Vermivora chrysoptera*
	Grasshopper Sparrow	*Ammodramus savannarum*
	Henslow's Sparrow	*Centronyx henslowii*
	Hudsonian Godwit (nb)	*Limosa haemastica*
	Le Conte's Sparrow	*Ammospiza leconteii*
	Lesser Yellowlegs (nb)	*Tringa flavipes*
	Long-eared Owl	*Asio otus*
	Marbled Godwit	*Limosa fedoa*
	Pectoral Sandpiper (nb)	*Calidris melanotos*
	Prairie Loggerhead Shrike	*Lanius ludovicianus excubitorides*
	Prothonotary Warbler	*Protonotaria citrea*
	Red-headed Woodpecker	*Melanerpes erythrocephalus*
	Ruddy Turnstone (nb)	*Arenaria interpres morinella*
	Rusty Blackbird (nb)	*Euphagus carolinus*
	Semipalmated Sandpiper (nb)	*Calidrus pusilla*
	Short-billed Dowitcher (nb)	*Limnodromus griseus*
	Upland Sandpiper	*Bartramia longicauda*
	Western Grebe	*Aechmophorus occidentalis*
	Wood Thrush	*Hylocichla mustelina*

* Note: (nb) = non-breeding in this BCR. The listed birds are a subset of birds within BCR 23 that are most likely present in the Project Area according to USFWS's IPaC review. Habitat suitability varies by species and location. within the Proposed Routes and includes a combination of agriculture, wetland, prairie, forest, floodplain and river corridor habitats (refer to **Section 6.4.2**).

Source: Listed birds are derived from the USFWS's IPaC tool receipt generated on 06/17/2026 (refer to **Appendix C**).

For a discussion of IBAs crossed by the Proposed Routes, see **Section 6.8.9**.

Federally Listed Species

The Endangered Species Act (ESA) of 1973 as amended provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 U.S.C. §§ 1531–1544). The ESA defines take to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or to attempt to engage in any such conduct." The ESA Section

7(a)(2) requires consultation with USFWS if a federal agency undertakes, funds, permits, or authorizes any action that may impact endangered or threatened species or designated critical habitat (DCH). This includes issuing a federal permit, such as a Clean Water Act Section 404 permit from USACE.

Merjent, on behalf of the Applicants, reviewed the USFWS's IPaC online tool[209] for a list of federally threatened, endangered, proposed, and candidate species and DCH that may be present within the Project Area on June 17, 2026. The IPaC query (Project Code: 2026-0104431) identified 12 species that may be present within the vicinity of the Project, as described in **Table 6.8.10-6**. No federally DCH is present within the Project area. The Official Species List is provided in **Appendix C**.

TABLE 6.8.10-6

Federally Listed, Proposed, and Candidate Species Potentially Present in Project Area

Common Name	Scientific Name	Federal Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered
Whooping Crane	*Grus americana*	Experimental, non-essential
Higgins Eye	*Lampsilis higginsii*	Endangered
Salamander Mussel	*Simpsonaias ambigua*	Proposed Endangered
Sheepnose Mussel	*Plethobasus cyphyus*	Endangered
Monarch Butterfly	*Danaus plexippus*	Proposed Threatened
Rusty Patched Bumble Bee	*Bombus affinis*	Endangered
Western Regal Fritillary	*Argynnis idalia occidentalis*	Proposed Threatened
Leedy's Roseroot	*Rhodiola integrifolia ssp. leedyi*	Threatened
Prairie Bush-clover	*Lespedeza leptostachya*	Threatened
Western Prairie Fringed Orchid	*Platanthera praeclara*	Threatened

Northern Long-eared Bat

The northern long-eared bat is a medium-sized, migratory bat with a range that stretches across much of the eastern and midwestern U.S. Habitat use changes throughout the year and varies depending on the sex and reproductive status of the species. In winter, the species will hibernate in caves and abandoned mines that have relatively constant, cooler temperatures with high humidity and no strong air currents. The species is found hibernating within deep crevices or cracks of the hibernaculum.

During the summer, reproductive females form maternity colonies that are variable in size, ranging from a few individuals to as many as 60 adults, while males and non-reproductive females roost alone. Suitable summer habitat for northern long-eared bats varies for roosting, foraging, and traveling (e.g., emergent wetlands, field edges); however, the species is predominantly found in intact, interior forested/wooded habitat. This habitat can consist of dense or loose aggregates of trees with varying canopy closure or linear wooded features such as fencerows, riparian forests, or other wooded corridors as long as the sites contain potential roosting areas consisting of live tree or snags that are ≥3 inches diameter at breast height (dbh), have exfoliating bark, cracks, crevices, or cavities, and is found within 1,000 feet of other forested or wooded habitat as the

[209] USFWS. Undated. Information for Planning and Consultation online tool. Available online at: https://ipac.ecosphere.fws.gov/. Accessed June 2026.

species tends to stay close to more densely forested areas while foraging. The species has been documented roosting in a wide variety of tree species, opportunistically utilizing trees with suitable cavities or bark. Less frequently, northern long-eared bats have been observed roosting in man-made structures such as barns, bridges, and buildings.[210]

Suitable summer habitat for foraging, traveling, and roosting (live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities) is present within the Project area (see **Section 6.4.2**). Northern long-eared bat maternity roosts have been documented within five miles of the Project in Fillmore County; however, the maternity roosts are greater than 150 feet from the Project where tree clearing restrictions would apply. Two hibernacula containing northern long-eared bats, also found within Fillmore County, have been documented 5 miles from the Project.

Tricolored Bat

The tricolored bat is one of the smallest bat species native to North America. Habitat use for the tricolored bat changes throughout the year and varies depending on the sex and reproductive status of the species. In winter, the species will hibernate in caves and abandoned mines; however, throughout much of its range in the southern U.S., roadside culverts, tree cavities, and abandoned water wells can also serve as overwintering habitat.

During the summer, reproductive females roost alone, or rarely with other females. Suitable summer habitat for tricolored bats varies by type and region for roosting, foraging, and traveling; however, the species is predominantly found in forested/wooded habitat. This habitat can consist of adjacent and interspersed non-forested habitat used for traveling such as emergent wetlands, shrublands, grasslands, or forest edges of agricultural or fallow fields. Edge habitat serves as an important component for migration and foraging. Roosting habitat is variable and includes forests, woodlots, and linear features such as fencerows, riparian buffers, or other wooded corridors as long as the areas contain live or recently dead deciduous trees with leaf clusters, Spanish moss (*Tillandsia usneoides*) (used in the southern portion of the species' range), and beard lichen (*Usnea trichodea*) (used in the northern portion of the species' range). Oaks (*Quercus spp.*) are often selected as roost trees; however, the species has also been observed in eastern red cedar trees, and clusters of pine needles. Roost trees are usually tall, large-diameter trees; the species is commonly found in the mid to upper canopy. Tricolored bats have also been observed roosting in man-made structures such as human-made buildings, bridges and culverts, and the underside of open-sided shelters.

Suitable summer habitat for foraging, traveling, and roosting is present within the Project area. Two hibernacula containing tricolored bats and found within Fillmore County have been documented 5 miles from the Project.[211]

Whooping Crane

The historic range of the whooping crane extended from the Arctic coast south to central Mexico, and from Utah east to New Jersey, into South Carolina, Georgia, and Florida. There are now only

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210 USFWS. Undated. Northern Long-eared Bat (Myotis septentrionalis). Available online at: https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis. Accessed June 2026.

211 USFWS. Undated. Tricolored Bat (Perimyotis subflavus). Available online at: https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus. Accessed June 2026.

four populations of whooping cranes in North America. One (i.e., the Aransas/Wood Buffalo population) is a self-sustaining, wild population, the second is a non-migratory, captive-raised population in central Florida, and a third is a non-migratory flock introduced to White Lake, Louisiana in 2011. A fourth population consists of captive-raised birds that migrate between Wisconsin and Florida; this population is considered by the USFWS to be an experimental, non-essential population. The intent is to establish a migratory flock which will summer and breed in central Wisconsin and migrate to west-central Florida to over-winter. The USFWS considers the range of this population to include portions of Minnesota.

Experimental, non-essential populations of endangered species are typically treated as species proposed for listing on private land, and proposed species are not afforded legal protection under the ESA. On USFWS National Wildlife Refuge and National Park Service lands, the species is treated as threatened.[212] The Project does not intersect any National Park Service lands; however, Segment 2 of the Proposed Route intersects with the Upper Mississippi River NWFR.

While whooping crane records are not tracked in the state NHIS data, verified records on the citizen-science eBird tool from the Cornell Lab identify whooping cranes as recently as 2019 in the New Albin Big Lake WMA (located approximately 4 miles south from the Project Area and the Upper Mississippi River NWFR) and less recently, in 2007 at the Silver Creek Reservoir near Rochester, Minnesota (located approximately 3.5 miles west of the Project).[213]

The species utilizes several different habitat types during migration, breeding, wintering, and foraging. In the upper Midwest, birds likely forage in marshes, lakes, open ponds, as well as upland swales, wet meadows and rivers, pastures and agricultural fields.[214] Suitable stopover habitat for resting and foraging is present within the Project area at waterbodies and within agricultural fields and it is possible that individual whooping cranes may utilize areas of the Project. Whooping cranes in Minnesota are extremely rare, and if present, would likely be drawn to larger tracts of superior foraging habitat on protected lands.

Higgins' Eye

The Higgins' eye (pearlymussel) is a freshwater mussel of larger rivers where it is typically found in deep water with moderate currents. The species bury themselves in sand and gravel river bottoms with just the edge of their partially opened shells exposed and feeds by siphoning the water for microorganisms. Since 1980, live Higgins' eye (pearlymussels) has been found in parts of the upper Mississippi River north of Lock and Dam 19 at Keokuk, Iowa, and in three tributaries of the Mississippi River: the St. Croix River between Minnesota and Wisconsin, the Wisconsin River in Wisconsin, and the lower Rock River between Illinois and Iowa.[215] Higgins' eye is also a state-listed endangered species in Minnesota.

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212 USFWS. 2018. *Fact Sheet: What is a 10(j) Rule*. Available online at: https://www.fws.gov/sites/default/files/documents/ESA-section10%28j%29-fact-sheet.pdf. Accessed June 2026.

213 eBird. 2026. Whooping Crane. Available online: https://ebird.org/map/whocra?env.minX=-140.474127491651&env.minY=25.6690076264797&env.maxX=-73.1004811826871&env.maxY=64.6555727028188. Accessed June 2026.

214 USFWS. Undated. Whooping Crane. Available online at: https://www.fws.gov/species/whooping-crane-grus-americana. Accessed June 2026.

215 USFWS. Undated. Higgins' Eye. Available online at: https://www.fws.gov/species/higgins-eye-lampsilis-higginsii. Accessed June 2026.

Based on a preliminary desktop analysis, several larger waterbodies, including perennial streams and major river crossings, likely exhibit characteristics potentially suitable for the Higgins' eye, specifically the Mississippi River and its larger tributaries (see **Section 6.8.7**). These waterbodies likely provide permanent flow and relatively stable substrates composed of sand, gravel, and/or cobble to support life history requirements for the Higgins' eye. Smaller ephemeral streams or highly modified channels with the Project area are less likely to provide suitable habitat due to reduced habitat complexity or flow.

Salamander Mussel

Salamander mussels are within the pearlymussel family and are small, elliptical-shaped mussels, reaching only up to 2 inches in length. Suitable habitat includes rivers, streams, and even lakes with suitable amounts of flow. Salamander mussels shelter under slab rocks or within bedrock crevices to gain stability within swift currents. Like all mussels, the larval stage of young salamander mussels is spent developing within the gills of a host aquatic species until they reach the glochidia stage and release into the water column to grow further. Unique to salamander mussels is that the host species for larva is the mudpuppy (*Necturus maculosus*), a species of large salamander. Mudpuppies must be present during the salamander mussel breeding season for the mussels to propagate.[216]

On August 22, 2023, USFWS proposed to list the salamander mussel as federally endangered under the ESA. Proposed species are not protected under the ESA. Based on a preliminary desktop analysis, several large and small waterbodies, including perennial streams and major river crossings, likely exhibit characteristics potentially suitable for the salamander mussel (see **Section 6.8.7**). These waterbodies likely provide permanent flow and relatively stable substrates composed of sand, gravel, and/or cobble to support life history requirements for the species. Smaller ephemeral streams or highly modified channels with the Project area are less likely to provide suitable habitat due to reduced habitat complexity or flow.

Sheepnose Mussel

The sheepnose is a medium-sized mussel that grows to about five inches in length. It lives in larger rivers and streams where it is usually found in shallow areas with moderate to swift currents flowing over coarse sand and gravel. The sheepnose mussel is found across the Midwest and Southeast U.S. but populations have dropped drastically due to habitat fragmentation and water pollution.[217]

Based on a preliminary desktop analysis, several large and small waterbodies, including perennial streams and major river crossings, likely exhibit characteristics potentially suitable for the sheepnose mussel (see **Section 6.8.7**). These waterbodies likely provide permanent flow and relatively stable substrates composed of sand, gravel, and/or cobble to support life history requirements for the species. Smaller ephemeral streams or highly modified channels with the Project area are less likely to provide suitable habitat due to reduced habitat complexity or flow.

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216 USFWS. Undated. Salamander Mussel. Available at: https://www.fws.gov/species/salamander-mussel-simpsonaias-ambigua. Accessed June 2026.

217 USFWS. Undated. Sheepnose Mussel. Available at: https://www.fws.gov/species/sheepnose-plethobasus-cyphyus. Accessed June 2026.

Monarch Butterfly

The monarch butterfly is a large butterfly with an approximate 3- to 4-inch wingspan and characterized by bright orange coloring on the wings with distinctive black borders and veining, serving as a warning sign to predators of their toxicity. In North America, the species is split into two populations (eastern and western), both well known for their long-distance migration. During the fall, both populations begin migrating to their overwintering locations, where they require a specific microclimate with a temperature that prevents excessive lipid depletion but also prevents freezing. At overwintering sites, monarchs undergo reproductive diapause until the spring when males and females begin mating before dispersing north again. The eastern population migrates from Mexico to Canada, reproducing two to three generations while migrating. The western population migrates north and east from coastal California toward the Rockies and Pacific Northwest, also reproducing into multiple generations.

Throughout the migration corridor and during the breeding cycles, monarchs can be found in a wide variety of habitats including prairies, grasslands, urban gardens, road ditches, and agricultural fields if there is a healthy and abundant supply of nectar resources for foraging that are diverse and of sufficient quality. Milkweed must also be of sufficient quality and quantity as it is the sole host plant for oviposition and for the larvae to feed until the larvae pupate into a butterfly.[218]

On December 12, 2024, the USFWS published a proposed rule to the federal register to list the monarch butterfly as threatened with a 4(d) rule. The USFWS has not since taken action to list the species, and proposed species are not protected under the ESA.

A preliminary desktop analysis shows that there are areas within the Project area that may contain vegetation communities that support nectar-producing plants and milkweed species. Common milkweed (*Asclepias syriaca*) grows in a variety of habitats such as agricultural field edge habitat, roadside edges, and old field habitat, which are present within the Project area. Habitat suitability varies across the route with cultivated agricultural lands, developed areas, and forested habitat, which may provide lower-quality habitat; however, as the species is an opportunistic forager, it is likely that the species occurs throughout the Project area.

Rusty Patched Bumble Bee

The rusty patched bumble bee is a medium-sized bumble bee historically distributed across the eastern U.S. and upper Midwest and into Canada. Workers and males are characterized by a rusty-colored patch located centrally on the second abdominal segment. Queens lack the species' eponymous rusty patch and can be further distinguished from workers and males by their large size.

Suitable habitat for the rusty patched bumble bee can be found in grasslands, prairies, marshes, agricultural areas, woodlands, and residential parks and gardens. The species is a generalist forager and utilizes both pollen (providing protein) and nectar (providing carbohydrates) from a wide variety of plants. As this species is one of the first to emerge in the spring and the last to go into hibernation, a constant and diverse supply of flowers is required to meet nutritional needs. As

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218 USFWS. 2024. *Monarch Butterfly (Danaus plexippus) Species Status Assessment Report*, Version 2.3 (December 2024). Available online at: https://www.fws.gov/sites/default/files/documents/2025-01/ssa_monarch-butterfly_2024.pdf. Accessed June 2026.

such, spring ephemeral flowers are a very important habitat component for rusty patched bumble bees as their overwintering habitats are associated near woodland habitats. It is thought that like other bumble bee species, rusty patched bumble bees typically forage within 0.6 miles from the nest site.

Nests are assumed to typically be found in upland grasslands and shrublands that contain forage during the summer and fall and as far as 30 meters in the forest or woodland edge. Nests are commonly established underground in abandoned rodent burrows or other cavities, typically 1 to 4 feet beneath the surface; however, the species may also utilize clumps of grass above ground. While little is known regarding the overwintering habits of rusty patched queens, it is thought they may behave similarly to other *Bombus* species, that is, queens hibernate in a chamber created in uncompacted soils. Rusty patched bumble bees may choose sandy, moss-covered soil on northwest slopes, and may be found in interior forest areas. Areas with these characteristics near forested edges and open fields may be especially important. They may also use other areas, such as compost piles or mole hills.[219]

The USFWS has identified "high potential zones" based on current records (i.e., 2007-present); these areas indicate a high probability of rusty patched bumble bee presence. Within these zones, both suitable and unsuitable habitat may be present. Segment 2 of the Proposed Route intersects approximately 10 acres of high potential zone at a singular location at the terminal point of the Project at the Mississippi River and the Wisconsin state border. While habitat suitability varies across the Project, a preliminary desktop review indicates that suitable foraging, nesting, and overwintering habitat is present.

On July 1, 2026, USFWS finalized DCH for the rusty patched bumble bee. DCH is dependent on physical or biological features (PBFs) defined by the USFWS that are essential to the conservation of the species. These PBFs include specific characteristics for overwintering, foraging, and nesting habitats. The Proposed Routes do not cross any finalized DCH and therefore, impacts to DCH will not occur due to Project actions.

Western Regal Fritillary

The western regal fritillary is a butterfly found in large, intact, contiguous native tallgrass prairie habitats in portions of Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Wisconsin, and Wyoming. Regal fritillaries can range widely with females potentially traveling up to 100 miles searching for three main habitat components: violet hostplants for larvae, nectar plants for adults, and native grasses to provide protection throughout the life cycle. Adults can be found foraging in both upland and wet prairie habitats; however, habitat can only be considered suitable for all life stages if violet species are present to provide shelter and forage for larvae. The density of violets seems to correlate positively to the number of butterflies within a given area. Habitat alteration has reduced the species' range and abundance.[220]

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219 USFWS. 2026. Rusty Patched Bumble Bee. Available online at: https://www.fws.gov/species/rusty-patched-bumble-bee-bombus-affinis. Accessed June 2026.

220 USFWS. 2024. *Endangered and Threatened Wildlife and Plants; Endangered Status for the Eastern Regal Fritillary and Threatened Status with Section 4(d) Rule for the Western Regal Fritillary,* Proposed Rule. 89 *Federal Register* 63888. Available online at: https://www.govinfo.gov/content/pkg/FR-2024-08-06/pdf/2024-16982.pdf. Accessed March 2026.

On August 6, 2024, the USFWS proposed to list the western regal fritillary (*A. i. occidentalis*) as a threatened species under the ESA. Proposed species are not protected under the ESA. While habitat suitability varies across the Project, a preliminary desktop review indicates that suitable habitat is present.

Leedy's Roseroot

Leedy's roseroot has a very small range, only found at a handful of cliffside habitat sites in the Driftless Area of Minnesota, Finger Lakes Region of New York, and the Black Hills of South Dakota. The species is likely a glacial relict, meaning that its range has not drastically changed since before the last ice age. Leedy's roseroot can only be found on cliffsides; however, these areas have specific microclimates which characteristically vary in the areas where they are found. In Minnesota locations, specifically, the species is found growing primarily on north-facing maderate cliffs[221] that have been formed from streams undercutting and eroding rock formations which create sinkholes and underground ice caves. The cool and moist air leaving these formations on the cliff face provides a constant temperature and humidity microclimate.[222] Leedy's roseroot is also a state-listed endangered species in Minnesota.

Based on a preliminary desktop analysis, Segment 2 of the Proposed Route intersects the known range of Leedy's roseroot near Root River Park, Olmsted County, Minnesota; however, there are a few areas north of that location that may support unknown populations of Leedy's roseroot.

Prairie Bush-clover

Prairie bush-clover is found only in the tallgrass prairie region of four Midwestern states. It is a member of the bean family and a midwestern "endemic"; known only from the tallgrass prairie region of the upper Mississippi River Valley. The species occurs on disturbed sites or prairie habitats that have been previously mowed, burned, cultivated, or grazed, in addition to undisturbed remnant prairie sites. Prairie bush-clovers can grow in fine silty loams, sand, fine sandy loams, or clay loams, and can also occur at bedrock outcrop sites interspersed with upland prairies.[223]

Based on a preliminary desktop analysis, Segment 1 of the Proposed Route intersects the known range of prairie bush-clover from the northern terminus to east of Elgin, Minnesota and again along Segment 2 of the Proposed Route north of Mabel, Minnesota to approximately 5.4 miles west of the southern terminus. Within this northern location, via aerial imagery, there appears to be only a few grassland locations that may potentially support the growth of prairie bush-clover. The rest of this area is largely cultivated croplands or forested habitats. There are fewer cultivated croplands in the southern location and more forested acres; however, there does appear to be more potentially suitable habitat for the prairie bush clover here. Within the remainder of the

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221 Maderate cliffs are cliff habitats characterized by a cool, moist microclimate created by cold air seepage from underground ice caves, sinkholes, fractures, or other karst features, as defined by MDNR. MDNR. Undated. *Southern Maderate Cliff.* Available online at: https://files.dnr.state.mn.us/natural_resources/npc/cliff_talus/cts43.pdf. Accessed July 2026.

222 USFWS. Undated. Leedy's Roseroot. Available online at: https://www.fws.gov/species/leedys-roseroot-rhodiola-integrifolia-ssp-leedyi . Accessed June 2026.

223 USFWS. Undated. Prairie Bush-clover. Available online at: https://www.fws.gov/species/prairie-lespedeza-lespedeza-leptostachya . Accessed June 2026.

Proposed Routes that do not intersect the known range of the prairie bush-clover, there are also grassland areas that may support the species.

Western Prairie Fringed Orchid

Western prairie fringed orchid is a perennial orchid of the North American tall grass prairie and is found most often on unplowed, calcareous prairies and sedge meadows. Soil moisture is a critical determinant of growth, flowering, and distribution. Pollination is required for seed production, and the species is pollinated by only a few species of sphinx moths. Seeds are wind-dispersed and may also be adapted for dissemination through the soil profile by water. This species is dependent on mycorrhizal fungi for seed germination and nutritional support before plants are capable of photosynthesis. The persistence of western prairie fringed orchids is dependent on periodic disturbance by fire, mowing, or grazing, but these practices may also cause adverse effects and must be carefully implemented.[224]

Based on a preliminary desktop analysis, Segment 2 of the Proposed Route intersects the known range of western prairie fringed orchid from east of Taopi, Minnesota to the solar facility east of State Highway 63. Much of this area is cultivated cropland; however, there are grassland areas that make up riparian corridors for streams that potentially be suitable for the species. Within the remainder of the Proposed Routes that do not intersect the known range of the western prairie fringed orchid, there are also grassland areas that may support the species.

State-Listed Species

Minn. Stat. § 84.0895 prohibits the take, import, transport, or selling of any portion of an endangered species or wild animals or plants. The Applicants used the MDNR MCE and NHIS to identify state-listed species within and adjacent to the Proposed Routes. A Natural Heritage Review Request (No. 2026-00499) was submitted to the MDNR on June 11, 2026. The Applicants also reviewed available NHIS records within 1 mile of the Project to support route evaluation, impact assessment, and development of avoidance and minimization measures. A formal review from MDNR was received on October 2, 2026, confirming the initial results found by Merjent (**Appendix C**). State-listed species identified through this effort are described in **Table 6.8.10-7**.

[224] USFWS. Undated. Western Prairie Fringed Orchid. Available online at: https://www.fws.gov/species/western-prairie-fringed-orchid-platanthera-praeclara . Accessed June 2026.

TABLE 6.8.10-7
State-Protected Species within the Project Area

Common Name	Scientific Name	State Status	Habitat
Grassland Birds			
Henslow's Sparrow	*Centronyx henslowii*	Endangered	Requires uncultivated grasslands with a substantial litter layer and standing/exposed stalks for singing perches; includes old fields, native or restored prairies, and grasslands of other similar structures.[a]
Loggerhead Shrike	*Lanius ludovicianus*	Endangered	Prefers upland grasslands where short grass and perching areas such as hedgerows, shrubs and small trees are found.[b]
Amphibians and Reptiles			
Blanchard's Cricket Frog	*Acris blanchardi*	Endangered	Found along water's edge of shallow wetlands, lakes, streams, or rivers, preferring muddy shorelines and abundant emergent vegetation. During the winter, frogs utilize crayfish burrows in pond banks to hibernate, emerging in late April.[c]
Blanding's Turtle	*Emydoidea blandingii*	Threatened	A wide variety of wetland and riverine habitats, but prefer calm, shallow water with rich, aquatic vegetation and adjacent sandy uplands for nesting. Overwintering occurs in muddy bottoms of marshes, backwater pools, ponds, and streams.[d]
Wood Turtle	*Glyptemys insculpta*	Threatened	Largely aquatic, preferring small- to medium-sized, fast-moving rivers and streams with adjacent deciduous and coniferous forests. Substrates of suitable streams consist of sand or gravel. Wood turtles will occupy adjacent alder thickets, forest, and grassland habitat for basking and foraging, typically staying within 1/4 mile of the river or stream. In southeast Minnesota, wood turtles are often found foraging in agricultural fields along rivers. Sandy, sparsely vegetated areas that are not prone to flooding and have ample exposure to direct sunlight provide important nesting sites.[e]
Timber Rattlesnake	*Crotalus horridus*	Threatened	Forested bluffs, south-facing rock outcrops, and bluff prairies (located on steep, south or west-facing hillsides, with rock outcroppings and ledges), particularly in the Mississippi River Valley.[f]
Western Ratsnake	*Pantherophis obsoletus*	Threatened	Woodland species preferring low forested valleys, forested rocky bluffs and rocky outcrops, and woodland edges.[g]
Aquatic Fauna			
Black Buffalo	*Ictiobus niger*	Threatened	Found in sloughs, impoundments, and both fast-and slow flowing currents within Mississippi and Cottonwood Rivers.[h]
Crystal Darter	*Crystallaria asprella*	Endangered	Found in waterbodies with clean sand and gravel bottoms with moderate to swift currents. Observed in main channel borders, side channel borders, island borders, and tailwater zones of dams where substrates are a mixture of coarse sand and gravel.[i]
Gravel Chub	*Erimystax x-punctatus*	Threatened	Restricted to the Root and Upper Iowa rivers; prefers riffles over fine gravel and pea-sized limestone gravel in clear to slightly turbid water of large creeks and small rivers.[j]
Paddlefish	*Polyodon spathula*	Threatened	Occurs in open waterbodies with deep water and low current velocities, rich in zooplankton, and with gravel bars for spawning.[k]

TABLE 6.8.10-7
State-Protected Species within the Project Area

Common Name	Scientific Name	State Status	Habitat
Pallid Shiner	*Hybopsis amnis*	Endangered	Inhabits large- and medium-sized rivers and occasionally streams with slow-moving water, often at the downstream ends of sand and gravel bars.[l]
Skipjack Herring	*Alosa chrysochloris*	Endangered	Prefers large deep and clear rivers with substrates of sand and gravel.[m]
Butterfly Mussel	*Ellipsaria lineolata*	Threatened	Large rivers with swift currents in sand or gravel substrates.[n]
Elktoe	*Alasmidonta marginata*	Threatened	Found in the St. Croix River and some of its tributaries; suitable substrates for the species include sand and gravel in areas with moderate to fast currents.[o]
Ellipse	*Venustaconcha ellipsiformis*	Threatened	Commonly found in the headwater reaches of rivers in gravel riffles and silty areas along stream banks.[p]
Fawnsfoot	*Truncilla donaciformis*	Threatened	Where found, the species occurs in flowing areas of large rivers in soft or coarse substrate at depths up to 30 feet.[q]
Fluted-shell	*Lasmigona costata*	Threatened	Found in medium-to-large rivers with primarily gravel substrate, swift currents, and water that is at least 2 feet deep.[r]
Higgins' Eye	*Lampsilis higginsii*	Endangered	Found in larger rivers with deep water, moderate currents, and sand and gravel substrates.[s] Higgins' eye is also a federal listed species.
Monkeyface	*Theliderma metanevra*	Threatened	Found in medium to large rivers with gravel mixed sand and gravel substrate.[t]
Rock Pocketbook	*Arcidens confragosus*	Endangered	Found in fine substrates such as silt or sand in the slow current areas in large rivers.[u]
Wartyback	*Pustulosa nodulata*	Threatened	Found in the Minnesota and Mississippi rivers; prefers fine or coarse substrates in areas of slow or moderate current of large rivers.[v]
Plants			
Prairie Habitat			
Clasping Milkweed	*Asclepias amplexicaulis*	Threatened	Occurs exclusively in dry, sandy and sparse vegetation soil in savannas and upland prairies. It requires full sunlight and minimal competition from other perennials.[w]
Clustered Broomrape	*Orobanche fasciculata*	Threatened	Dry prairies and dunes and savannas, particularly in excessively drained, loose, sandy, or gravelly soil or in thin soil over bedrock.[x]
Edible Valerian	*Valeriana edulis var. ciliata*	Threatened	Largely restricted to roadsides and railroad rights-of-way; prefers moist, sunny, calcareous habitat, including fens, wet meadows, and moist prairies.[y]
Prairie Shooting Star	*Dodecatheon meadia*	Endangered	Occurs exclusively in mesic tallgrass prairies.[z]
Sullivant's Milkweed	*Asclepias sullivantii*	Threatened	Restricted to undisturbed wet and mesic tallgrass prairie; many individuals occur along railroad rights-of-way.[aa]
Tuberous Indian Plantain	*Arnoglossum plantagineum*	Threatened	Restricted to native, mesic prairies in the southern portion of Minnesota.[bb]
Wild Quinine	*Parthenium integrifolium*	Endangered	Restricted to mesic habitats in remnant prairies and savannas.[cc]

TABLE 6.8.10-7
State-Protected Species within the Project Area

Common Name	Scientific Name	State Status	Habitat
Forest Habitat			
Butternut	*Juglans cinerea*	Endangered	River terraces of mesic hardwood forests in loamy or alluvial soils, or in sandy soils if the water table is near the surface.[dd]
Canada Forked Chickweed	*Paronychia canadensis*	Endangered	Dry and sandy woodlands of oak or jack pine savannas and often found on slightly raised river terraces in partial sun.[ee]
Carey's Sedge	*Carex careyana*	Endangered	Found on cool, shaded slopes and narrow valley bottoms along small streams and springs.[ff]
Catchfly Grass	*Leersia lenticularis*	Threatened	Limited to forested habitats in the floodplain of the Mississippi River.[gg]
Christmas Fern	*Polystichum acrostichoides*	Endangered	Found in mesic hardwood forests on north-facing or east-facing river bluff with moderate soil moisture and a neutral pH. Only known to occur in two locations - one in Houston County and one in Winona County.[hh]
Great Indian Plantain	*Arnoglossum reniforme*	Threatened	Located along stream banks, terrace forests, and floodplain forests of small to medium sized rivers in the southeastern portion of the state. Typically found in direct sun along the stream banks or in partial shade in forests with patchy canopy cover.[ii]
Narrow-leaved Glade Fern	*Homalosorus pycnocarpos*	Threatened	Confined to wooded bluffs in deep stream valleys rich in organic loams and near a creek, stream, or groundwater seep.[jj]
One-flowered Broomrape	*Orobanche uniflora*	Threatened	Associated with woodland and bluff prairie habitats on north- or south- facing slopes with coarse and sandy gravel to silt-loam soils and full sun or deep shade.[kk]
Snowy Campion	*Silene nivea*	Threatened	Prefer partial openings in alluvial forests and meadows, seepage areas, or on the edge of calcareous fens.[ll]
Spreading Sedge	*Carex laxiculmis var. copulata*	Threatened	Prefers lower portions of steep, north- to east-facing slopes in mesic deciduous forests dominated by sugar maple (*Acer saccharum*) and basswood (*Tilia americana*).[mm]
Stemless Tick Trefoil	*Hylodesmum nudiflorum*	Threatened	Occurs primarily in mesic oak forests.[nn]
Witch-hazel	*Hamamelis virginiana*	Threatened	Occurs in the understory of dry to moist deciduous forests, typically with oak (*Quercus* spp.), sugar maple (*Acer saccharum*), or basswood (*Tilia americana*).[oo]
Cliffside/Rock Habitat			
Leedy's Roseroot	*Rhodiola integrifolia ssp. leedyi*	Endangered	Found on cliffsides with specific microclimates, specifically, on north-facing maderate cliffs that have been formed from streams undercutting and eroding rock formations which create sinkholes and underground ice caves.[pp] Leedy's roseroot is also a federally listed species.
Rock Sandwort	*Minuartia dawsonensis*	Threatened	Only grows on outcrops of sedimentary bedrock exposures and on sand and gravel deposits.[qq]
Wetland Habitat			
Davis' Sedge	*Carex davisii*	Threatened	Found in forested floodplains and swamps.[rr]
Glade Mallow	*Napaea dioica*	Threatened	Found on stream banks, floodplains, and terrace forests in the valleys of small- to medium- sized streams; can occur in full sun, under a canopy of trees in full shade, or in partial shade in canopy openings.[ss]

TABLE 6.8.10-7
State-Protected Species within the Project Area

Common Name	Scientific Name	State Status	Habitat
Smooth-sheathed Sedge	*Carex laevivaginata*	Threatened	Grows in swamps and woodland swales, wet ravines, and along muddy banks of creeks and rivers.[tt]
Tubercled Rein Orchid	*Platanthera flava var. herbiola*	Threatened	Found in moist or wet meadows or sunny swales in savannas; also found at the margins of shallow marshy lakes. Soil is generally moist acidic sand, with a thin layer of organic material or duff on the surface and sometimes a clay layer below the surface. Groundwater is usually near the surface.[uu]

[a] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8268. Accessed June 2026.
[b] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8208. Accessed June 2026.
[c] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=14183. Accessed June 2026.
[d] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8538. Accessed June 2026.
[e] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8537. Accessed June 2026.
[f] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8564. Accessed June 2026.
[g] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8551. Accessed June 2026.
[h] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8391. Accessed June 2026.
[i] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8426. Accessed June 2026.
[j] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8375. Accessed June 2026.
[k] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8316. Accessed June 2026.
[l] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8344. Accessed June 2026.
[m] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8320. Accessed June 2026.
[n] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9016. Accessed June 2026.
[o] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9009. Accessed June 2026.
[p] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9057. Accessed June 2026.
[q] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9052. Accessed June 2026.
[r] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9029. Accessed June 2026.
[s] USFWS. Undated. Higgins' Eye. Available online at: https://www.fws.gov/species/higgins-eye-lampsilis-higginsii. Accessed June 2026.
[t] Missouri Department of Conservation. 2026. Monkeyface. Available online at: https://mdc.mo.gov/discover-nature/field-guide/monkeyface. Access June 2026.
[u] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9013. Accessed June 2026.
[v] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9045. Accessed June 2026.
[w] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9235. Accessed June 2026.
[x] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10159. Accessed June 2026.
[y] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10626. Accessed June 2026.
[z] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10260. Accessed June 2026.
[aa] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9243. Accessed June 2026.
[bb] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9490. Accessed June 2026.
[cc] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9416. Accessed June 2026.
[dd] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10025. Accessed June 2026.
[ee] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9685. Accessed June 2026.
[ff] MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10739. Accessed June 2026.

TABLE 6.8.10-7
State-Protected Species within the Project Area

Common Name	Scientific Name	State Status	Habitat
gg	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=11213. Accessed June 2026.		
hh	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=11409. Accessed June 2026.		
ii	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9489. Accessed June 2026.		
jj	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=11392. Accessed June 2026.		
kk	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10162. Accessed June 2026.		
ll	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9699. Accessed June 2026.		
mm	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10795. Accessed June 2026.		
nn	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9906. Accessed June 2026.		
oo	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10016. Accessed June 2026.		
pp	USFWS. Undated. Leedy's Roseroot. Available online at: https://www.fws.gov/species/leedys-roseroot-rhodiola-integrifolia-ssp-leedyi. Accessed June 2026.		
qq	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=9681. Accessed June 2026.		
rr	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10756. Accessed June 2026.		
ss	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10109. Accessed June 2026.		
tt	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=10791. Accessed June 2026.		
uu	MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=11076. Accessed June 2026.		

6.8.10.2 Potential Impacts

Potential impacts to rare and unique natural resources were evaluated using resource-specific ROIs based on the characteristics of the resource and the Project. For mapped ecologically significant areas, including NPCs, SBS, native prairie, WAN features, and Large Habitat Blocks, the ROI generally includes the Proposed Rights-of-Way and immediately adjacent areas where construction and operation activities could alter vegetation, habitat conditions, ecological function, or habitat connectivity. For federally listed, state-listed, and other protected wildlife species, the ROI extends beyond the Proposed Rights-of-Way to include suitable habitat and areas where species may forage, nest, breed, migrate, overwinter, or otherwise utilize habitats that could be directly or indirectly affected by Project activities. The following sections describe potential temporary and permanent impacts to these resources associated with construction, operation, and maintenance of the Project.

MDNR Ecologically Significant Areas

NPCs, SBS, potential RNCs, and native prairie identified within the Proposed Rights-of-Way were evaluated for potential temporary and permanent impacts associated with construction, operation, and maintenance of the Project. Potential impacts may occur through vegetation clearing, grading, structure installation, conductor stringing, access road use, and long-term vegetation management. The extent of potential impacts varies based on the sensitivity of the resource, habitat type, and the amount of overlap with the Proposed Rights-of-Way.

Native Plant Communities, Sites of Biodiversity Significance, and Rare Natural Communities

NPCs and MBS SBS that occur within the Proposed Rights-of-Way are presented in **Table 6.8.10-8** and **Table 6.8.10-9**, respectively.

TABLE 6.8.10-8

Native Plant Communities within Proposed Rights-of-Way

NPC Type[a]	Acres within Proposed Rights-of-Way
Segment 1	**0.7**
UPs13c – Dry Bedrock Bluff Prairie (Southern)	0.7
Segment 2	**29.1**
FDs38a – Oak – Shagbark Hickory Woodland	5.2
FFs59b – Swamp White Oak Terrace Forest	0.5
FFs68a – Silver Maple – (Virgina Creeper) Floodplain Forest	16.9
MHs37b – Red Oak – White Oak – (Sugar Maple) Forest	0.8
MRn93 – Northern Bulrush – Spikerush Marsh	0.4
UPs13c – Dry Bedrock Bluff Prairie (Southeastern)	5.1
UPs23a – Mesic Prairie (Southern)	0.2
Q-9	**0.8**
MHs39b – Sugar Maple – Basswood – Red Oak – (Blue Beech) Forest	0.8

[a] Source: MDNR. 2026. MNDNR Native Plant Communities. Available online at: https://gis.data.mn.gov/maps/minnesota::mndnr-native-plant-communities-1/about. Accessed July 2026.

TABLE 6.8.10-9

Minnesota Biological Survey Sites of Biodiversity Significance within the Proposed Rights-of-Way

Site Name	Ranking	Status	Acres within Proposed Rights-of-Way
Segment 1			**47.8**
Chester Woods – East	Moderate	Final	1.0
Mazeppa 10	Moderate	Final	4.2
Zumbro 11	Moderate	Final	7.4
Mazeppa 17	Below	Final	19.1
Mazeppa 22	Below	Final	14.2
Pine Island 13	Below	Final	1.9
Segment 2			**138.3**
Beaver Creek	Outstanding	Final	1.9
Lodi 24	Outstanding	Final	0.2
Pickerel Slough	High	Final	11.0
Reno Bottoms (Running Slough)	High	Final	24.9
Cabbage Ridge North	Moderate	Final	3.0
Canton Township 15	Moderate	Final	27.2
Hayshore Lake	Moderate	Final	19.4
Mayville 36	Moderate	Final	0.8
Winnebago 9	Moderate	Final	16.2
Winnebago 13	Moderate	Final	16.2
Clayton 3	Below	Final	3.9
Frankford 6	Below	Final	0.1
Racine 28	Below	Final	5.5
Spring Grove 13	Below	Final	8.1
Q-9			**1.4**
Twin Peaks Bluffs	Moderate	Final	1.4

Source: MDNR. 2026. MBS Sites of Biodiversity Significance. Available online at: https://www.arcgis.com/home/item.html?id=cfb2da4b8adb4fa88654cd6e7b604b9b#overview. Accessed July 2026.

As shown in **Tables 6.8.10-8** and **6.8.10-9**, the Proposed Right-of-Way cross approximately 31 acres of mapped NPCs and approximately 188 acres of SBS, including Outstanding-, High-, Moderate-, and Below-ranked sites. Most acres occur within Segment 2 where the route traverses the bluffland, forested, floodplain, and river corridor landscapes of southeastern Minnesota.

Table 6.8.10-10 identifies potential RNCs crossed by the Proposed Right-of-Way. Segment 2 of the Proposed Right-of-Way crosses approximately 18 acres of potential RNCs.

TABLE 6.8.10-10

Potential Rare Natural Communities within the Proposed Right-of-Way

Name	Acres within Proposed Right-of-Way
Segment 2	**17.8**
FFs59b – Swamp White Oak Terrace Forest	0.5
FFs68a – Silver Maple-(Virginia Creeper) Floodplain Forest	16.9
MRn93 – Northern Bulrush-Spikerush Marsh	0.4

Source: MDNR. 2026. Potential Rare Natural Communities. Available online at: https://gis.data.mn.gov/datasets/potential-rare-natural-communities-1/explore?location=46.435000%2C-93.380000%2C7&showTable=true. Accessed July 2026.

Native Prairie

As shown in **Table 6.8.10-11**, Segments 1 and 2 Proposed Right-of-Way would cross approximately 6.0 acres of native prairie NPCs. Construction activities within native prairie could result in temporary vegetation disturbance, soil compaction, introduction of invasive species, and localized loss of native vegetation. Permanent impacts may occur at transmission structure locations and within maintained right-of-way areas where vegetation management is required. Native prairie is afforded special consideration under Minnesota law (Minn. Stat. § 84.02, subd. 5).

TABLE 6.8.10-11

Native Prairie within the Proposed Right-of-Way

Name	Type	Ecological Significance	Acres within Proposed Right-of-Way
Segment 1			
UPs13c- Dry Bedrock Bluff Prairie (Southern)	Native Plant Community	Native Prairie	0.7
Segment 2			
UPs13c - Dry Bedrock Bluff Prairie (Southern)	Native Plant Community	Native Prairie	5.1
UPs23a - Mesic Prairie (Southern)	Native Plant Community	Native Prairie	0.2

Source: MDNR. 2026. MNDNR Native Plant Communities. Available online at: https://gis.data.mn.gov/maps/minnesota::mndnr-native-plant-communities-1/about.

Impacts to WAN mapped areas, large habitat blocks, and IBAs are discussed in **Section 6.8.9.2**. Impacts to surface waters are further discussed in **Section 6.8.7.2**, and impacts to USFWS- and MDNR-managed properties are discussed in **Section 6.4.6.2**.

Potential impacts to ecologically significant areas would be similar to the impacts described to vegetation in **Section 6.8.8.2**, and would occur primarily through vegetation clearing, grubbing, equipment access, construction matting, structure installation, conductor stringing, and operation and maintenance of the Project. Vegetation impacts may be temporary or permanent depending on the type of vegetation affected and long-term transmission line clearance requirements.

Temporary impacts would result from disturbance associated with construction access routes, structure work areas, conductor pulling and tensioning sites, temporary laydown areas, and areas where existing facilities are removed or modified. Disturbed areas may experience temporary loss of vegetation cover, soil compaction, rutting, or trampling. Temporary impacts would be restored following construction in accordance with the VMP (**Appendix I**), permit requirements, and landowner agreements.

Permanent impacts would occur primarily where the Project's right-of-way will be maintained clear of trees or tall-growing woody vegetation to maintain transmission line safety, reliability, and required electrical clearances. The Segment 2 Proposed Right-of-Way would cross 23.6 acres of forested NPCs. Forested NPCs within the maintained right-of-way may be converted to compatible low-growing vegetation communities and maintained in an early successional condition to provide required electrical clearances. As a result, approximately 23.6 acres of forested NPCs within Segment 2 could experience long-term changes in vegetation structure and

composition, although the underlying landforms, soils, and ecological settings would remain intact.

Permanent impacts may also occur within NPCs, SBS, potential RNCs, and native prairies where transmission structures are installed. Structure footprints will range from approximately 45 feet by 45 feet (0.05 acres) to 60 feet by 60 feet (0.08) and would result in localized permanent conversion of existing vegetation at individual structure locations. The Jefferson Ridge Switching Station and permanent access roads are not sited in NPCs, SBS, potential RNCs or other ecologically significant areas.

Protected Avian Species

Current NHIS data identify two known bald eagle nests within the Proposed Rights-of-Way and two additional nests within 660 feet of the Proposed Rights-of-Way; additional undocumented nests may occur within the Project area. Suitable bald eagle nesting, foraging, and roosting habitat is present throughout portions of the Proposed Routes, particularly within the Mississippi River corridor, floodplain forests, major river crossings, and other large forested habitats. Construction activities occurring near active nests could disturb nesting eagles and, if not properly managed, could result in nest abandonment or other impacts prohibited under the BGEPA. Should active eagle nests be identified within or adjacent to the Proposed Rights-of-Way prior to construction, the Applicants will coordinate with the USFWS and MDNR to implement appropriate avoidance and minimization measures and ensure compliance with applicable federal protections.

Construction activities have the potential to temporarily affect bald eagles, raptors, waterfowl, migratory birds, and other avian species through vegetation clearing, increased human activity, noise, temporary habitat disturbance, and localized displacement from nesting, roosting, or foraging areas. Temporary impacts are expected to be greatest within forested habitats, wetland complexes, floodplain forests, and river corridors that provide important breeding and migratory habitat. Disturbed habitats would be restored following construction in accordance with applicable permit requirements and the VMP (**Appendix I**).

Operational impacts may include habitat alteration associated with long-term vegetation management and the potential for avian collisions with overhead conductors and shield wires. Collision risk is generally greatest where transmission lines cross river corridors, wetlands, floodplains, and other areas that concentrate bird movement, including portions of the Blufflands–Root River IBA and the Upper Mississippi River NWFR and IBA. Waterfowl, wading birds, raptors, and other large-bodied species may be more susceptible to collisions where transmission lines occur between feeding, resting, nesting, or migratory habitats.

Long-term vegetation management within the maintained right-of-way may alter habitat structure and reduce available nesting habitat for some forest-dependent bird species while creating or maintaining habitat conditions that may benefit grassland and early-successional species. Additional long-term impacts may include periodic disturbance associated with inspection, maintenance, and repair activities. Although localized habitat alteration and temporary displacement of birds may occur, most habitat within the surrounding landscape would remain available following Project construction.

Federally Listed Species

Northern Long-eared Bat

Potential impacts on individual northern long-eared bats may occur if clearing or construction takes place when the species is breeding, foraging, or raising pups in its summer habitat. Bats may be injured or killed if occupied trees are cleared during this active window. Tree clearing activities conducted when the species is in hibernation and not present on the landscape will not result in direct impacts on individual bats but could result in indirect impacts due to removal of suitable foraging and roosting habitat. Suitable roosting and foraging habitat is present within forested portions of the Proposed Routes identified in **Table 6.4.2-1**. Potential impacts would be greatest in areas where tree clearing is required within these habitats.

Based on a preliminary evaluation using the USFWS Determination Key (Dkey) for the northern long-eared bat, the Project *may affect* the species; however, this is not considered a preliminary determination (i.e., may affect, not likely to adversely affect or may affect, likely to adversely affect). This preliminary analysis is indicative of the fact that further details are required to determine the extent of potential impacts on the species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey; therefore, impacts are anticipated to be minor.

Tricolored Bat

Potential impacts on individual tricolored bats may occur if clearing or construction takes place when the species is breeding, foraging, or raising pups in its summer habitat. Bats may be injured or killed if occupied trees are cleared during this active window. Tree clearing activities conducted when the species is in hibernation and not present on the landscape will not result in direct impacts on individual bats but could result in indirect impacts due to removal of suitable foraging and roosting habitat. Potentially suitable roosting and foraging habitat is present within the Proposed Routes.

As tricolored bats are a proposed species, they are not legally protected under ESA. As such, the Project will not result in unauthorized take of tricolored bats. If the USFWS determines the species should be listed and protections for the species will coincide with Project planning, permitting, and/or construction, the Applicants will review Project activities for potential impacts to the species, develop appropriate avoidance measures, and consult with the USFWS as appropriate.

Whooping Crane

Potentially suitable stopover habitat for roosting and foraging may occur within the Proposed Rights-of-Way, specifically areas near the Upper Mississippi NWFR. Potential impacts on individual whooping cranes may occur if construction or long-term operation takes place during migration when birds may be foraging or resting. Whooping cranes may be vulnerable to transmission line collisions during migration, particularly within river corridors, floodplain wetlands, and other open habitats that support stopover and foraging activities. Collision risk is expected to be greatest near the Mississippi River corridor, where migratory bird use is concentrated.

Non-essential experimental populations are treated as threatened species on the Upper Mississippi NWFR. Based on a preliminary evaluation using the USFWS Minnesota-Wisconsin All Species Determination Key (MN-WI Dkey), the Project will have *no effect* on the species where the Project intersects the Upper Mississippi NWFR. A MN-WI Dkey will be rerun closer to

construction, and the Applicants will commit to the minimization and avoidance measures outlined in the MN-WI Dkey.

Non-essential experimental populations are treated as proposed species on private lands. Proposed species are not legally protected under the ESA. As such, while suitable habitat may be available within the Project Area on private lands, unauthorized take of whooping cranes will not occur. If the USFWS determines the species should be listed and protections for the species will coincide with Project planning, permitting, and/or construction, the Applicants will review Project activities for potential impacts to the species, develop appropriate avoidance measures, and consult with the USFWS as appropriate.

Freshwater Mussels (Higgins' Eye, Salmander Mussel, Sheepnose Mussel)

Potentially suitable habitat for Higgins' Eye, Sheepnose Mussel, and Salamander Mussel may occur within the Mississippi River and several perennial streams and larger tributaries crossed by the Proposed Rights-of-Way (see **Table 6.8.7-9** of **Section 6.8.7.2**). Potential impacts could occur through sedimentation, erosion, riparian vegetation removal, temporary disturbance of streambanks, and degradation of water quality associated with construction activities. Excess sediment may smother mussels, degrade substrate quality, and reduce habitat suitability. Indirect impacts could also occur through increased turbidity, altered temperature regimes, or changes in stream stability.

Based on a preliminary evaluation using the USFWS MN-WI Dkey, the Project *may affect* Higgins' eye and sheepnose mussels; however, this is not considered a preliminary determination (i.e., may affect, not likely to adversely affect or may affect, likely to adversely affect). This preliminary analysis is indicative of the fact that further details are required to determine the extent of potential impacts on the species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey.

As salamander mussels are a proposed species, they are not legally protected under the ESA. As such, the Project will not result in unauthorized take of salamander mussels. If the USFWS determines the species should be listed and protections for the species will coincide with Project planning, permitting, and/or construction, the Applicants will review Project activities for potential impacts to the species, develop appropriate avoidance measures, and consult with the USFWS as appropriate.

Monarch Butterfly

Potentially suitable foraging and reproductive habitats for the monarch butterfly may be present within the Proposed Rights-of-Way. As described above, the 765 kV Proposed Right-of-Way cross approximately 6.0 acres of native prairie NPCs. Although these areas represent a small portion of the overall Project, they may provide suitable habitat for this species. Work in the Proposed Rights-of-Way when adults or larvae are present may impact individuals via collisions and/or crushing by vehicles and equipment, and loss of foraging and reproductive habitat may also impact individuals. However, adults are mobile and will likely not be impacted by Project activities due to their ability to leave and/or avoid Project workspaces. In addition, proposed species are not protected under the ESA. If the USFWS determines the species should be listed and protections for the species will coincide with Project planning, permitting, and/or construction, the Applicants will review Project activities for potential impacts to the species, develop appropriate avoidance measures, and consult with the USFWS as appropriate.

Rusty Patched Bumble Bee

The Segment 2 Proposed Right-of-Way intersects with approximately 2.1 acres of a rusty patched bumble bee High Potential Zone at the terminal point of the Project at the Mississippi River. Additional, potentially suitable foraging, nesting, and overwintering habitat for the species likely occurs with the Proposed Rights-of-Way. Construction activities within native prairie, grassland, woodland edge, and other pollinator-supporting habitats may temporarily reduce floral resources, disturb nesting habitat, and affect overwintering queens. These impacts are expected to be localized and largely confined to active work areas.

Work in the Proposed Rights-of-Way when adults or larvae are present may impact individuals via collisions and/or crushing by vehicles and equipment, and loss of foraging and reproductive habitat may also impact individuals. Adults that are out foraging are mobile and will likely not be impacted by Project actions due to their ability to leave and/or avoid Project workspaces. Temporary and permanent activities that may collapse rusty patched bumble bee nests, impact overwintering queens, or impact foraging availability include vegetation clearing, grading, access road construction, equipment staging, soil compaction, and installation of transmission line structures.

Based on a preliminary evaluation using the USFWS Rusty Patched Bumble Bee Rangewide Determination Key (RPBB Dkey), the Project *may affect* the species; however, this is not considered a preliminary determination (i.e., may affect, not likely to adversely affect or may affect, likely to adversely affect). This preliminary analysis is indicative of the fact that further details are required to determine the extent of potential impacts on the species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey.

Western Regal Fritillary

Suitable foraging and reproductive undisturbed grassland habitats for the Western Regal Fritillary butterfly may be present in the Proposed Rights-of-Way. As described above, the 765 kV Proposed Right-of-Way cross approximately 6.0 acres of native prairie NPCs. Although these areas represent a small portion of the overall Project, they may provide suitable habitat for this species. Work in the Proposed Rights-of-Way during the species' active season (i.e., April – September) when adults or larvae are present may impact individuals via collisions and/or crushing by vehicles and equipment, and loss of foraging and reproductive habitat may also impact individuals. However, adults are mobile and will likely not be impacted by Project activities due to their ability to leave and/or avoid Project workspaces. In addition, proposed species are not protected under the ESA. As such, the Project will not result in unauthorized take of western regal fritillaries. If the USFWS determines the species should be listed and protections for the species will coincide with Project planning, permitting, and/or construction, the Applicants will review Project activities for potential impacts to the species, develop appropriate avoidance measures, and consult with the USFWS as appropriate.

Leedy's Roseroot

Leedy's roseroot occurs near cliffsides or associated rock features. The Proposed Rights-of-Way generally avoid maderate cliff formations, algific talus-associated habitats, and other specialized cliff environments that support Leedy's roseroot. Therefore, direct impacts to occupied habitat are unlikely. Based on a preliminary evaluation using the USFWS MN-WI Dkey, the Project *may affect*

but is not likely to adversely affect this species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey.

Prairie Bush-clover

Prairie bush-clovers occur in undisturbed grasslands. As described above, the 765 kV Proposed Right-of-Way cross approximately 6.0 acres of native prairie NPCs. Although these areas represent a small portion of the overall Project, they may provide suitable habitat for this species. Temporary and permanent impacts that may damage or remove individual plants and fragment prairie habitat as part of Project actions include vegetation clearing, grading, access road construction, equipment staging, soil compaction, and installation of transmission line structures. Disturbed soils could facilitate the establishment and spread of invasive plant species, increasing competition with native prairie vegetation and reducing habitat quality. Vegetation management as part of the longer-term operation of the transmission line rights-of-way may affect plant recruitment during seed production or flowering if conducted during the growing season.

Based on a preliminary evaluation using the USFWS MN-WI Dkey, the Project *may affect* the species; however, this is not considered a preliminary determination (i.e., may affect, not likely to adversely affect or may affect, likely to adversely affect). This preliminary analysis is indicative of the fact that further details are required to determine the extent of potential impacts on the species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey.

Western Prairie Fringed Orchid

Western prairie fringed orchids occur in undisturbed grasslands. As described above, the 765 kV Proposed Right-of-Way cross approximately 6.0 acres of native prairie NPCs. Although these areas represent a small portion of the overall Project, they may provide suitable habitat for this species. Temporary and permanent impacts that may damage or remove individual plants and fragment prairie habitat as part of Project actions include vegetation clearing, grading, access road construction, equipment staging, soil compaction, and installation of transmission line structures. Disturbed soils could facilitate the establishment and spread of invasive plant species, increasing competition with native prairie vegetation and reducing habitat quality. Vegetation management as part of the longer-term operation of the transmission line rights-of-way may affect plant recruitment during seed production or flowering if conducted during the growing season.

Based on a preliminary evaluation using the USFWS MN-WI Dkey, the Project *may affect* the species; however, this is not considered a preliminary determination (i.e., may affect, not likely to adversely affect or may affect, likely to adversely affect). This preliminary analysis is indicative of the fact that further details are required to determine the extent of potential impacts on the species. A Dkey will be rerun closer to construction, and the Applicants will commit to the minimization and avoidance measures outlined in the Dkey.

State-Listed Species

Grassland Birds

Henslow's sparrow and loggerhead shrike utilize grassland, prairie, shrubland, and pasture habitats that may occur within portions of the Proposed Rights-of-Way (see **Table 6.4.2-2**). Potential impacts may include temporary disturbance during the nesting season, habitat fragmentation, reduction in nesting habitat, and avian collisions with transmission infrastructure.

Construction-related disturbance is expected to be temporary and localized, while long-term impacts would primarily be associated with vegetation management and the presence of transmission structures.

Amphibians and Reptiles

Suitable habitat for the Blanchard's cricket frog may occur within 75 feet of suitable waterbodies, such as shallow wetlands, lakes, streams or rivers. **Section 6.8.7.2** describes waterbodies and wetlands crossed by the Proposed Rights-of-Way.

The Proposed Rights-of-Way cross potentially suitable upland nesting and foraging habitat for the Blanding's and wood turtle. The largest known population for Blanding's turtle in Minnesota occurs along the Mississippi River.[225] Impacts to these species are possible if Project activities are conducted in these areas during the species' active period (i.e., March – October). Potential impacts may include direct mortality from equipment traffic, disturbance of nesting sites, displacement from foraging habitat, and temporary disruption of movement corridors between wetlands and upland nesting habitat.

Timber rattlesnakes occur in forested areas; ideal habitat includes forested bluffs, south-facing rock outcrops, and bluff prairies.[226] The western ratsnakes also occur in woodland habitat near the Mississippi River, including low forested valleys, forested rocky bluffs, rocky outcrops, and woodland edges. [227] As discussed in **Section 6.4.2.1**, the Proposed Rights-of-Way cross approximately 423 acres of forests or woodlands. This includes approximately 24.5 acres of forested NPCs, identified in **Table 6.8.10-8**.

State-listed amphibians and reptiles may be affected by vegetation clearing, grading, excavation, equipment traffic, habitat fragmentation, and temporary disturbance associated with construction activities. Individuals could be injured or displaced if construction occurs within occupied habitat during active periods. Temporary impacts may occur to wetlands, riparian corridors, forested habitats, prairie habitats, and overwintering areas used by these species. Long-term impacts may include localized habitat alteration and fragmentation within maintained right-of-way areas. Project design, pre-construction surveys, exclusion measures, and avoidance of documented occurrences would minimize impacts to the extent practicable.

Aquatic Fauna

State-listed aquatic fauna have the potential to occur in medium- to large-sized perennial streams and rivers crossed by the Proposed Rights-of-Way. As described in **Section 6.8.7.2**. the Proposed Rights-of-Way cross 21 perennial streams and 1 perennial drainage ditch that have the potential to provide suitable habitat for state-listed fish and freshwater mussel species (e.g., crystal darter (*Crystallaria asprella*), gravel chub (*Erimystax x-punctatus*), pallid shiner (*Hybopsis amnis*), ellipse mussel (*Venustaconcha ellipsiformis*), and/or elktoe mussel (*Alasmidonta marginata*). Because transmission lines generally span waterbodies, direct disturbance of aquatic habitat is expected to be limited. Potential impacts are primarily associated with erosion, sediment transport,

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225 MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8538. Accessed June 2026.

226 MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=11076. Accessed June 2026.

227 MDNR. 2026. Rare Species Guide. Available online at: https://www.dnr.state.mn.us/rsg/species-detail.html?id=8551. Accessed June 2026.

temporary riparian disturbance, and localized bank stabilization activities where required. Vegetation clearing within the transmission line rights-of-way, specifically at waterbody crossings and their adjacent riparian areas, could increase erosion and sediment runoff, which could result in decreased water quality via elevated turbidity and deposition of sediment. Excess sediment can bury or remove the sand and gravel substrates needed by many fish species for spawning or by smothering freshwater mussel species. Removal of riparian vegetation can also decrease the amount of canopy cover over waterbodies, subsequently increasing water temperatures and altering nutrient loads. Should any bank disturbance occur during the Project, this has the potential to alter channel stability and reduce habitat suitability, thus disrupting recruitment and growth for both fish and freshwater mussels.

Plant Species

State-listed plant species may occur within native prairie, forest, wetland, riparian, seepage, and other sensitive habitats crossed by the Proposed Rights-of-Way. As shown in **Table 6.8.10-8**, the Proposed Rights-of-Way cross approximately 6.0 acres of native prairie NPCs, 24.5 acres of forested NPCs, and 17.8 acres of wetland NPCs. In addition, the Proposed Rights-of-Way cross approximately 423 acres of forest and woodland land cover, 155 acres of wetlands, and approximately 200 waterbody crossings. These habitats have the potential to support state-listed prairie, forest, wetland, and waterbody-associated plant species.

Temporary and permanent impacts to state-listed plant species may occur from vegetation clearing, grading, access road construction, equipment staging, soil compaction, structure installation, and operation and maintenance activities within the transmission line right-of-way. Potential impacts include direct damage or removal of individual plants, disturbance of seedbanks, habitat fragmentation, and localized changes in habitat conditions. Construction activities may also alter soil moisture, drainage patterns, groundwater expression, or hydrologic conditions affecting prairie, wetland, seepage, and riparian communities. Disturbance associated with construction may increase erosion and sedimentation, facilitate the introduction and spread of invasive species, and reduce habitat quality through increased competition with native vegetation.

Within forested habitats, the primary impact mechanism is expected to be alteration of forest structure and microclimate resulting from tree clearing within the maintained right-of-way. Increased sunlight, wind exposure, temperature fluctuations, and reduced humidity may affect shade-adapted understory species that depend on mature forest conditions. Long-term vegetation management within prairie, forest, and wetland habitats may also affect plant recruitment, flowering, and seed production if conducted during sensitive growing periods.

State-listed rock-associated plant species, including Leedy's roseroot and rock sandwort, are associated with specialized cliff and rock habitats. Because the Proposed Rights-of-Way generally avoid maderate cliff formations, algific talus-associated habitats, and other specialized cliff environments that support these species, direct impacts to occupied habitat are unlikely and significant impacts are not anticipated.

If state-listed plant species are identified during surveys or final design, structures, access roads, temporary workspaces, and construction activities will be sited to avoid and minimize impacts to documented occurrences to the extent practicable. If construction activities could result in take of a protected plant species in an area where an exemption does not apply, coordination with the MDNR would occur to identify appropriate avoidance, minimization, or permitting requirements.

6.8.10.3 Mitigation Measures

General Measures

The Applicants will continue to coordinate with the MDNR and USFWS to avoid and minimize Project impacts on sensitive species. The following general measures will be used to help avoid or minimize impacts on rare natural resources during and after the completion of the proposed Project:

- co-location with existing rights-of-way where possible, minimizing impacts to habitat (**Section 3.1.3**);
- utilization of appropriate BMPs to prevent the erosion and sedimentation impacts in the areas of impact (see **Section 5.3.5** and **Appendix I**);
- implementation of sound water and soil conservation practices during construction and operation of the Project to protect topsoil and adjacent water resources and minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, and stabilizing restored soil (see **Section 5.3.7** and **Appendix I**);
- revegetation of disturbed areas with native species and wildlife conservation species, where applicable if the landowner agrees (see **Appendix I**);
- implementing invasive species management measures in accordance with the VMP (**Appendix I**) to prevent the introduction and managed the spread of invasive species and noxious weeds; and
- to reduce avian impacts, Project design will be done in accordance with APLIC guidelines. Reporting any eagle or other migratory bird nests discovered during survey of the line or in the land acquisition process to the USFWS and adhering to guidance provided by the agency.

MDNR Ecologically Significant Areas

Native Plant Communities, Sites of Biodiversity Significance, and Rare Natural Communities

The Proposed Route avoids the majority of mapped SBSs and NPCs within the Project area, as shown on **Figure 22**. Where these resources occur near or intersect the Proposed Route, potential impacts would be addressed through resource-specific avoidance and minimization measures. To minimize impacts to NPCs, SBS, and potential RNCs, the Applicants will implement the following MDNR recommendations to the extent practicable:

- Avoid SBS Sites and native plant communities ranked S1, S2, or S3 to the extent practicable.
- As much as possible, operate within already-disturbed areas.
- Minimize vehicular disturbance in SBS Sites (allow only vehicles/equipment necessary for construction activities).
- Do not park equipment or stockpile supplies in the SBS Sites.
- Do not place spoil in SBS Sites or other sensitive areas.

- Impacts to SBS Sites and native plant communities should be addressed in the VMP.
- If possible, conduct the work under frozen ground conditions.
- Use effective erosion prevention and sediment control measures.
- Inspect and clean equipment prior to operation and follow recommendations to prevent the spread of invasive species.
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible.
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern are birdsfoot trefoil (*Lotus corniculatus*) and crown vetch (*Coronilla varia*), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas.

The Applicants will also minimize clearing limits, utilize existing access routes where practicable, avoid placement of structure work areas and staging areas within high-quality natural communities to the extent practicable, and restore temporarily disturbed areas in accordance with the VMP (**Appendix I**).

The MDNR has also suggested a route segment alternative to avoid impacts to NPCs and SBS sites and associated state-listed species, described further in **Section 4.4.2.1**.

Native Prairie

Native prairie boundaries will be identified during final design and construction planning, and vehicle travel, staging, and temporary workspaces within native prairie will be minimized where practicable. If impacts to native prairie cannot be avoided, the Applicants will coordinate with the MDNR regarding development of a Prairie Protection and Management Plan consistent with permit requirements.

Protected Avian Species

The Applicants will implement measures to avoid and minimize impacts to migratory birds, raptors, waterfowl, and bald eagles. The USFWS provided comments to the Applicants on August 20, 2026, regarding potential conservation measures that included limiting forest clearing activities outside of the migratory bird nesting season (March 1-August 31) and development of an Avian Protection Plan that incorporates APLIC guidelines. The USFWS also recommended that the Applicants seek an eagle take permit, if necessary (see **Appendix C**). These measures include minimizing tree clearing during the migratory bird nesting season where practicable, and restoring temporarily disturbed habitats following construction as described in the VMP (**Appendix I**). The Applicants will design the Project in accordance with applicable APLIC Avian Protection Plan Guidelines and APLIC Avian Safe Design recommendations. In coordination with the USFWS and MDNR, bird flight diverters, shield-wire marking, nest buffers, or other species-specific measures may be implemented in areas of elevated collision risk, including river crossings, wetland complexes, and known eagle use areas.

Federally Listed Species

The Applicants will coordinate with the USFWS during final design, permitting, and construction planning. Additional species-specific avoidance, minimization, monitoring, or mitigation measures identified through agency consultation, Dkey reviews, field surveys, or permit conditions will be incorporated into Project design and construction planning, as appropriate.

- Northern long-eared and tricolored bats: The Applicants will conduct tree clearing consistent with applicable USFWS guidance and Dkey requirements. The Applicants will also minimize clearing of forested habitat through final design and use of existing rights-of-way where practicable.

- Whooping cranes: The mitigation measures described under the Protected Avian Species would also be protective of whooping cranes. If whooping cranes are observed within or adjacent to active work areas, the Applicants will coordinate with the USFWS and implement appropriate avoidance measures before construction activities resume.

- Freshwater mussel species: Transmission structures will be sited outside of streams and rivers wherever practicable and conductors will span waterbodies to the extent feasible. The Applicants will implement erosion and sediment control BMPs, utilize sediment barriers and stabilize access points (see **Section 5.3.5** and **Appendix I**), minimize disturbance to streambanks and riparian vegetation, and restore disturbed riparian areas following construction (see **Appendix I**). Where required through permitting, seasonal timing restrictions and species-specific conservation measures will be implemented to avoid impacts during sensitive life stages.

- Monarch butterfly, rusty patched bumble bee and western regal fritillary: The Applicants will maintain pollinator habitat where practicable, minimize disturbance within rusty patched bumble bee High Potential Zones, limit unnecessary ground disturbance, avoid and minimize impacts to native prairie and other high-quality pollinator habitats where practicable, restore disturbed areas (**Appendix I**), and implement applicable conservation measures identified through applicable Dkeys.

- Federally listed plants: Where required through Dkey review, pre-construction surveys will be conducted for federally listed plant species in suitable habitat. If listed plants are identified, avoidance buffers and species-specific conservation measures will be implemented in coordination with the USFWS. Additional measures include limiting construction activities to frozen ground conditions where feasible, implementing erosion and sediment control BMPs (**Section 5.3.5**), managing invasive and noxious species, and restoring disturbed areas in accordance with the VMP (**Appendix I**).

State-listed Species

The Applicants will continue to coordinate with the MDNR throughout final design, permitting, and construction planning. The Applicants will design and construct the Project to avoid take of state-listed species to the extent practicable. If surveys, agency coordination, or final design indicate that take cannot be avoided, the Applicants will obtain any required permits and coordinate with the MDNR.

Grassland Birds

To minimize impacts to state-listed bird species, including Henslow's sparrow and loggerhead shrike, the Applicants will minimize disturbance within suitable nesting habitat during the breeding season where practicable, restore disturbed habitats following construction, and implement avian protection measures described under Protected Avian Species. Additional measures may include seasonal work restrictions, avoidance buffers around active nests, and habitat restoration measures recommended through consultation with the MDNR.

Amphibians and Reptiles

To minimize impacts to state-listed amphibians, reptiles, and turtles, including Blanchard's cricket frog, Blanding's turtle, timber rattlesnake, western ratsnake, and wood turtle, the Applicants will implement measures to avoid and minimize disturbance to suitable foraging, nesting, breeding, overwintering, and movement habitats. Depending on species presence and habitat conditions, these measures may include pre-construction surveys, exclusion fencing, erosion and sediment control BMPs, biological monitoring prior to use of heavy equipment or ground disturbance, seasonal work restrictions, educational materials provided to contractors identifying the species, temporary relocation by qualified personnel where authorized, minimizing disturbance to occupied habitat, and limiting construction activities during sensitive life stages. Construction personnel will be informed of environmentally sensitive areas and species protection requirements as appropriate.

Aquatic Fauna

To avoid and minimize impacts to state-listed fish and freshwater mussel species, transmission structures will be located outside of streams and rivers wherever practicable and conductors will span waterbodies to the extent feasible. The Applicants will implement erosion and sediment control BMPs as described in **Section 5.3.5**, minimize disturbance to streambanks and riparian vegetation, restore disturbed riparian areas following construction, and stabilize disturbed shorelines and access points (**Appendix I**). Work within waterbodies will be avoided to the maximum extent practicable. If required through agency coordination or permitting, seasonal timing restrictions and species-specific conservation measures will be implemented to avoid impacts during sensitive life stages, including spawning and recruitment periods.

Plant Species

If state-listed plant species are identified in the right-of-way prior to Project construction, the Applicants will coordinate with the MDNR regarding applicable conservation measures. Additional measures may include limiting construction activities to frozen or dry ground conditions where feasible, implementing erosion and sediment control BMPs, managing invasive and noxious weeds in accordance with the VMP, minimizing soil disturbance, restoring disturbed areas with appropriate seed mixes, and conducting vegetation management outside of sensitive flowering, seed production, or growing periods where practicable.

6.8.10.4 Typical Route Permit Conditions

Standard route permit conditions discussed in **Section 6.8.9.4**, above, would be applicable to minimizing impacts to federal and state protected species and sensitive ecological resources.

6.9 UNAVOIDABLE IMPACTS

Environmental information required for a Route Permit application pursuant to Minn. Stat. § 216I.05, subd. 4(a)(9), includes a description of the human and natural environmental effects that cannot be avoided if the Project is approved by the Commission. The Applicants have developed the Project to avoid impacts to environmental resources whenever possible. In some cases, impacts to environmental resources cannot be entirely avoided, but could be minimized by implementation of mitigation measures. A detailed discussion of the environmental impacts of the proposed Project, as well as the mitigation measures that would be used to minimize impacts is presented in **Sections 6.1** through **6.8** of this Application.

Despite implementation of avoidance, minimization, restoration, and mitigation measures, construction and operation of the Project will result in certain unavoidable impacts. These impacts are generally localized to the Proposed Rights-of-Way, structure locations, permanent access roads, and associated facilities and are typical of large electric transmission line projects.

Unavoidable temporary impacts will primarily occur during construction and include soil disturbance, temporary vegetation removal, disruption of agricultural activities, increased traffic, noise, dust, greenhouse gas emissions, temporary wildlife displacement, and short-term disturbance to wetlands, surface waters, floodplains, recreational resources, and adjacent land uses. Construction activities may also result in temporary aesthetic impacts associated with construction equipment, material staging, vegetation clearing, and installation of transmission facilities. Although disturbed areas will be restored following construction, temporary impacts to landowners, agricultural operations, and environmental resources cannot be completely avoided.

Unavoidable permanent impacts will occur where facilities are installed and maintained throughout the operational life of the Project. Permanent conversions of existing land cover will occur at transmission structure locations, permanent access roads, and the Jefferson Ridge Switching Station. The proposed 765 kV transmission structures will occupy footprints ranging from approximately 45 feet by 45 feet (0.05 acres) to 60 feet by 60 feet (0.08 acres) and will permanently convert existing land cover at those locations. Agricultural land within structure footprints and permanent access road locations will be removed from production for the life of the Project. Permanent vegetation impacts will also occur within the maintained transmission line rights-of-way, where approximately 423 acres of forested vegetation would be converted to compatible low-growing vegetation communities to maintain required electrical clearances and system reliability. Long-term vegetation management will maintain these areas in an altered vegetation condition relative to existing forested habitat.

Some unavoidable impacts to wildlife habitat will result from permanent vegetation conversion, habitat fragmentation, edge effects, and continued maintenance of the transmission line right-of-way. Although portions of the maintained right-of-way may provide habitat for certain early successional species, conversion of forested habitats and alteration of vegetation structure cannot be entirely avoided. In addition, some risk of bird collisions with transmission line conductors and shield wires will remain despite implementation of avian protection measures and design practices intended to reduce collision potential. Similar localized and long-term changes to wildlife use and habitat conditions may occur within portions of managed lands, conservation easements, riparian corridors, and IBAs crossed by the Project.

Permanent impacts to wetlands, floodplains, and other water resources have been minimized through routing, structure siting, spanning of resources where practicable, and application of erosion and sediment control measures. However, permanent impacts associated with transmission structure foundations, access roads, and long-term vegetation management may occur where complete avoidance is not practicable. While no direct impacts to calcareous fens are anticipated, localized and permanent alterations to land cover and hydrologic conditions in the vicinity of Project facilities cannot be entirely avoided. These impacts are expected to be limited in extent and are not anticipated to result in significant degradation of water resource functions.

Additional unavoidable impacts include the permanent visual presence of transmission structures, conductors, shield wires, and associated facilities within the landscape. While route selection and co-location with existing infrastructure have reduced aesthetic impacts where practicable, the

introduction of new transmission infrastructure and expansion of existing utility rights-of-way cannot be completely avoided.

With implementation of the proposed avoidance, minimization, restoration, and mitigation measures, unavoidable impacts are expected to be localized, generally moderate in magnitude, and not significant at a regional scale. The Project has been designed to avoid sensitive resources where practicable and to minimize impacts to human and environmental resources while meeting the identified electrical transmission needs and Project objectives.

6.10 IRREVERSIBLE AND IRRETRIEVABLE IMPACTS

Minn. Stat. § 216I.05, subd. 11(b)(11), requires the Commission to consider "irreversible and irretrievable commitments of resources" when determining whether to issue a route permit. "Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use; an irretrievable commitment of resources means the resource is not recoverable for later use by future generations."[228]

The principal irreversible commitments associated with the Project include the permanent conversion of land for transmission facilities, including transmission structure foundations, permanent access roads, and the Jefferson Ridge Switching Station. Areas occupied by these facilities will remain committed to utility use for the operational life of the Project. In addition, operation of the Project will require maintenance of compatible low-growing vegetation within the transmission line rights-of-way. As discussed in **Section 6.8.8**, approximately 423 acres of existing forested vegetation would be permanently converted to low-growing vegetation communities that are compatible with transmission line operation and maintenance. Although these areas will continue to support vegetation and wildlife habitat, they will no longer function as mature forest habitat or land use while the transmission line remains in service.

Irretrievable commitments associated with the Project include the use of construction materials, energy, labor, and capital required to construct, operate, and maintain the transmission facilities. Resources such as steel, water, aluminum, concrete, aggregates, fuel, electricity, and other construction materials will be consumed during construction and cannot be recovered for alternative future uses. Construction activities will also permanently remove small areas of agricultural production where structure foundations, permanent access roads, and other permanent facilities are located. Temporary impacts to agricultural land, wetlands, wildlife habitat, surface waters, and other environmental resources are generally expected to be restored following construction and therefore are not considered irreversible or irretrievable commitments of resources.

The Applicants have incorporated avoidance and minimization measures into Project routing, design, and construction planning to reduce irreversible and irretrievable commitments of resources where practicable. Co-location of portions of Segment 2 with existing transmission infrastructure, use of existing access routes where feasible, and careful siting of structures and facilities help minimize the amount of land, vegetation, and other resources permanently committed to the Project. Based on the analyses presented in **Section 6**, irreversible and

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228 *Frazee to Erie Transmission Line Project*, Docket No. ET2, E017/TL-20-423, ENVIRONMENTAL ASSESSMENT at 120 (May 14, 2021).

irretrievable commitments are expected to be localized and limited relative to the overall landscape crossed by the Project.

6.11 CUMULATIVE POTENTIAL EFFECTS

Minn. R. 4410.0200, subp. 11(a), defines "cumulative potential effects" as the "effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects." Although Minn. Stat. Ch. 216I does not specifically require a cumulative effects analysis, the Applicants provide the following evaluation consistent with the Commission's *Draft Application Guidance for Large Infrastructure Facilities in Minnesota*.[229]

The environmentally relevant area for this analysis generally corresponds to the resource-specific ROI identified throughout **Section 6**. Foreseeable projects were identified through review of publicly available information or coordination with the following agencies: Commission dockets, MISO Transmission Planning, the EQB, MnDOT, and local government planning and transportation improvement programs. **Table 6.11-1** identifies current and reasonably foreseeable future projects that may overlap geographically or temporally with the Project and that could affect the same human or environmental resources evaluated in this Application. These projects include electric transmission facilities, renewable energy generation projects, energy storage facilities, industrial development, and transportation improvements occurring within or near the Project area.

Table 6.11-1 identifies current or future foreseeable projects that occur within the Project area. Many of these projects are also discussed in **Section 6.4.4**.

The Project is located within a landscape that has been substantially influenced by agriculture, transportation infrastructure, utility rights-of-way, energy facilities, rural development, recreation resources, and natural resource management activities. Existing transmission lines, substations, renewable energy facilities, roadways, pipelines, and agricultural land uses have collectively shaped current environmental conditions. The cumulative effects analysis therefore focuses on the Project's incremental contribution to existing and reasonably foreseeable future changes within this working landscape.

Potential cumulative effects to land use and agricultural resources could occur through the continued expansion of utility infrastructure, renewable energy development, transportation improvements, and industrial growth within the Project area. Foreseeable projects identified in **Table 6.11-1** include multiple transmission facilities, solar projects, wind energy developments, battery storage facilities, residential developments, and the proposed Project Skyway technology campus. Collectively, these projects may contribute to incremental changes in land use patterns, increased infrastructure density, and temporary construction-related disruptions to agricultural operations. However, much of the Project would be located adjacent to or co-located with existing

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229 Minnesota Public Utilities Commission. 2025. *Draft Application Guidance for Large Energy Infrastructure Facilities in Minnesota. Minnesota Public Utilities Commission Guidance for Preparing Site and Route Permit Applications for Large Energy Infrastructure Facilities*. Available online at: https://puc.eip.mn.gov/sites/default/files/2025-06/DRAFT-LEI_Guidance_Draft_06-25-2025.pdf. Accessed July 2026.

transmission rights-of-way, roadways, or other linear infrastructure, thereby limiting the extent of new land conversion and reducing additional fragmentation of agricultural lands. Agricultural impacts associated with the Project would also be mitigated through implementation of the AIMP (**Appendix H**) and restoration of disturbed areas following construction.

Several foreseeable energy infrastructure projects are concentrated in the vicinity of the North Rochester Substation, including the North Rochester-to-Skyway HVTL Project, the Mankato-Mississippi 345 kV Transmission Line Project, the PowerOn Midwest Project, Lemon Hill Solar, and Project Skyway. Together, these projects represent a planned expansion of regional energy and industrial infrastructure that may result in localized cumulative effects related to land use compatibility, construction activity, and visual character. At the same time, these projects would be located within an area that already functions as a major transmission and energy hub and are intended to support growing electrical demand, regional reliability, economic development, and integration of additional energy resources.

Visual and aesthetic resources may also experience cumulative effects where the Project occurs in areas containing existing or planned utility, transportation, industrial, and energy infrastructure. The Project would contribute incrementally to changes in visual character resulting from the combined presence of transmission lines, substations, solar facilities, wind energy facilities, roadways, and industrial development. Cumulative visual effects may be most apparent near the North Rochester Substation and Pine Island area, where several transmission and energy projects are proposed or under development. The addition of new transmission structures may increase the visibility of utility infrastructure and reinforce the perception of an increasingly developed energy right-of-way within portions of the affected viewshed. However, substantial segments of the Project would be co-located with existing transmission infrastructure, where utility facilities are already prominent visual features. Consequently, the Project's incremental contribution to cumulative visual effects is expected to be less than that associated with establishing entirely new rights-of-way. While localized changes in visual character are anticipated, the predominantly agricultural and working landscape setting of the Project area reduces the overall significance of cumulative visual impacts.

Temporary cumulative effects to recreation resources could occur where Project construction activities overlap spatially or temporally with other transportation, utility, or energy infrastructure projects. Such effects may include temporary changes in visual conditions, air quality, increased construction traffic, noise, or short-term access restrictions. These effects would generally be localized and temporary, and recreation opportunities are expected to remain available throughout the region during operation of the Project and other foreseeable developments.

Construction and operation of the Project, when considered together with existing and planned transmission lines, renewable energy facilities, roadways, and other infrastructure, may contribute to cumulative effects on vegetation communities, wildlife habitat, and ecological systems. Potential cumulative effects include habitat fragmentation, edge effects, temporary disturbance to wildlife, vegetation removal, and increased collision risk for certain bird and bat species associated with multiple energy infrastructure facilities. These effects are expected to be greatest in areas where multiple infrastructure rights-of-way occur in proximity to one another. However, the Project's reliance on right-of-way sharing and parallel routing, combined with implementation of APLIC guidance, vegetation restoration, erosion control measures, and agency-recommended mitigation, would minimize incremental habitat disturbance and reduce the Project's contribution to regional cumulative ecological effects.

Cumulative impacts to wetlands, water resources, floodplains, groundwater resources, and aquatic habitats are expected to be limited. Existing federal, state, and local regulatory requirements governing wetlands, public waters, stormwater management, floodplain impacts, and water quality protection are intended to prevent degradation of aquatic resources from individual and collective development activities. The Project would avoid or span water features where practicable, implement erosion and sediment control measures during construction, and restore disturbed areas following construction. Consequently, the Project's incremental contribution to cumulative impacts on regional aquatic resources is expected to be minor.

In addition to potential adverse cumulative effects, the Project may contribute to beneficial cumulative effects associated with the continued development of the regional electric transmission system. These benefits include increased transmission capacity, improved system reliability and resiliency, support for growing electrical demand, accommodation of future renewable energy resources, temporary employment and socioeconomic benefits, and coordination with other planned transmission investments in southeastern Minnesota and western Wisconsin. By enhancing the regional transmission network, the Project would support broader energy and economic development objectives identified by utilities, regional planners, and stakeholders.

Overall, the Project’s contribution to cumulative impacts is expected to be localized and moderate where multiple infrastructure rights-of-way occur in proximity to one another. Given the extensive use of existing utility rights-of-way, implementation of resource protection measures, and relatively limited permanent footprint of Project facilities, the Project is not anticipated to result in significant cumulative adverse impacts to regional land use patterns, agricultural resources, water resources, ecological systems, wildlife populations, or recreation opportunities.

7 FEDERAL AND STATE AGENCY, TRIBAL NATIONS COORDINATION

This section summarizes the federal, state, and local permits, approvals, consultations, and coordination activities associated with the Project. The Project will require approval from the Commission in the form of a Certificate of Need and Route Permit, as well as a variety of environmental permits, agency consultations, and construction-related authorizations from federal, state, and local agencies. Consistent with Minnesota's permitting requirements, the Applicants have initiated coordination with federal and state resource agencies, local governments, and Tribal Nations to identify potential resource concerns, discuss applicable permitting requirements, and incorporate agency and Tribal input into Project planning and route development. The permits, approvals, and coordination efforts described in this section will help ensure the Project is designed and constructed in a manner that avoids, minimizes, and mitigates potential impacts to natural, cultural, and community resources.

7.1 REQUIRED PERMITS, APPROVALS, AND CONSULTATIONS

In addition to the Route Permit requested in this Application, the Project will also need a Certificate of Need from the Commission. The Applicants submitted an Application for a Certificate of Need on February 6, 2026. As described in **Section 2**, on April 29 2026, the Commission stayed the Certificate of Need proceeding until the filing of this Route Permit Application and determined that the Certificate of Need and Route Permit Applications would be jointly processed pursuant to Minn. R. 7849.1900. In a joint proceeding, the public information and scoping meetings, as well as the public hearings, will be combined to allow issues related to both need and route to be considered at the same time. Other permits required to construct the Project will depend on the final route selected and conditions encountered during construction. Once the Commission issues a Route Permit, local zoning, building, and land use regulations and rules are preempted per Minn. Stat. § 216I.18, subd. 1. A list of the permits and approvals that could potentially be required for the Project is provided in **Table 7.1-1**.

TABLE 7.1-1

Summary of Potential Permits and Approvals Potentially Required for the Project

Permit	Jurisdiction
Federal	
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers, St. Paul District
Rivers and Harbors Act Section 10 Permit	U.S. Army Corps of Engineers, St. Paul District
Endangered Species Act, Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act Consultation	U.S. Fish and Wildlife Service
National Wildlife Refuge Land Exchange Approval	U.S. Fish and Wildlife Service
FAA Form 7460-1 Notice of Proposed Construction or Alteration and Obstruction Evaluation/Airport Airspace Analysis	Federal Aviation Administration
State	
Certificate of Need	Minnesota Public Utilities Commission
Route Permit	Minnesota Public Utilities Commission
State Natural Heritage Review and Coordination	Minnesota Department of Natural Resources
Calcareous Fen No Effect Concurrence	Minnesota Department of Natural Resources
Work in Public Waters	Minnesota Department of Natural Resources
Utility Crossing License (Lands and Waters)	Minnesota Department of Natural Resources

TABLE 7.1-1

Summary of Potential Permits and Approvals Potentially Required for the Project

Permit	Jurisdiction
Water Appropriation Permit – Temporary Construction Dewatering	Minnesota Department of Natural Resources
Clean Water Act Section 401 Water Quality Certification	Minnesota Pollution Control Agency
National Pollutant Discharge Elimination System Construction Stormwater General Permit	Minnesota Pollution Control Agency
National Historic Preservation Act Consultation	State Historic Preservation Office Tribal Historic Preservation Office
Utility Accommodation on Trunk Highway Right-of-way	Minnesota Department of Transportation
Miscellaneous Work on Trunk Highway Right-of-way	Minnesota Department of Transportation
Access/Driveway Permit	Minnesota Department of Transportation
Oversize/Overweight Permit	Minnesota Department of Transportation
Local*	
Application for Excavation and/or Obstruction Permit on County Highway Right-of-Way, Access Permit Application, Transportation Permit – Overdimension/Overweight	Goodhue County
Utility Permit, Application Permit for Access, Oversize/Overweight Vehicle Permit	Olmsted County
Application and Agreement for Excavation and/or Obstruction Permit on Road Under County Jurisdiction, Driveway/Access Permit, Oversize/Overweight Moving Permit	Mower County
Application for Utility Permit on County Highway Right-of-way, Access Permit, Over-Dimension/Overweight Permit	Fillmore County
Application for Utility Permit on County Highway Right-of-way, Application for Access or Entrance to Public Roadway	Houston County
Townships / Cities	Coordination with township / permit requirements to be confirmed with road authority
Other	
Utility License Agreements	Utilities (Pipelines, Transmission Lines)
Crossing Agreements	Other Utilities (Railways)
* Note: Pursuant to Minn. Stat. § 216I.18, the issuance of a Route Permit required by the Commission is the sole site or route approval required to be obtained by the permittee. The permit supersedes and preempts all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose government.	

7.1.1 Federal Approvals

7.1.1.1 USACE, Section 404, Clean Water Act, Permit

A Section 404 permit is required from the USACE, St. Paul District, if there are discharges of dredged or fill material into waters of the U.S. As discussed in **Section 6.8.7**, the Project is anticipated to have wetland impacts. Impacts are anticipated to be eligible for coverage under the Minnesota Utility Regional General Permit (RGP). The Applicants, in consultation with the USACE, St. Paul District, will seek coverage under the appropriate permit once design of the transmission line is complete.

7.1.1.2 USACE, Section 10, Rivers and Harbors Act, Permit

The USACE regulates impacts to navigable waters of the U.S. under Section 10 of the River and Harbors Act. The Project would cross one Section 10 navigable waters: the Mississippi River. The Utility RGP includes coverage under Section 10, therefore the Applicants will include the necessary information in its pre-construction notification for crossing Section 10 waters. **Section 6.8.7** discusses potential impacts on water resources.

7.1.1.3 Upper Mississippi National Wildlife and Fish Refuge Land Exchange Approval

A request has been made to the USFWS to enter into an agreement to exchange lands under 16 U.S.C. § 668dd(b)(3) to accommodate the Project's crossing of the Upper Mississippi NWFR. Under the proposed land exchange, the Applicants are proposing an approximately 90-acre Dairyland-owned parcel – the northern portion of Jack Oak Island in Grant County, Wisconsin – for NWFR acquisition in exchange for the existing approximately 40-acre Dairyland 161-kV right-of-way at Genoa, Wisconsin.[230]

The USFWS will conduct a review under the National Environmental Policy Act to analyze and disclose potential environmental impacts of the land exchange. This National Environmental Policy Act review will be used by the USFWS to complete a net benefit analysis that will support their decision to enter into a land exchange agreement.

7.1.1.4 USFWS, Endangered Species Act, Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

The ESA of 1973, as amended, directs the USFWS to identify and protect endangered and threatened species and their critical habitat. Projects involving federal permit authorizations require consultation between the lead federal agency and the USFWS, pursuant to Section 7 of the ESA. As described in **Sections 7.1.1.2** and **7.1.1.3**, the Project will require two federal authorizations. Conditions of these authorizations require that the Applicants evaluate whether the activity might affect any federally listed threatened, endangered, or proposed threatened and endangered species, DCH, or proposed critical habitat in compliance with the ESA. **Section 6.8.10** discusses potential impacts on federally listed threatened and endangered species.

Bald and golden eagles are protected under the BGEPA. BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from taking bald or golden eagles, including parts (such as feathers), nests or eggs. A take involves the action to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb. The regulations define disturb as, "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR § 22.6). If eagle activity or a nest(s) is present in the Project area, conservation measures will be implemented to avoid and minimize potential impacts (e.g., application of buffer,

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230 Acreages stated in this paragraph are approximate and based on historic plat maps and easement documentation. Actual acreage is likely to change given measurement of the existing DPC 161-kV right-of-way was taken and recorded in 1966. Natural river conditions in addition to ongoing USACE dredging activities related to navigation on the river result in fluctuations over time. These acreages will be confirmed with realty surveys prior to the land exchange.

modification of daily or seasonal timing of activities, monitoring). **Section 6.8.10** discusses the potential impacts on bald eagles.

Migratory birds are protected under the MBTA. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. Specifically, the MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any listed migratory bird (50 CFR § 10), including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR § 21). However, based upon an M-Opinion-37085 issued by the Trump Administration (April 11, 2025), only purposeful take of migratory birds is prohibited by the MBTA. **Section 6.8.10** discusses the potential impacts on migratory bird species.

7.1.1.5 Federal Aviation Administration, Airport Obstruction Evaluation

FAA notice is required for proposed structures 200 feet above ground level and those that may exceed an imaginary surface extending outward and upward from public use airports at certain slopes defined in the 14 CFR § Chapter 77.9. The Applicants will submit Form 7460-1, Notice of Proposed Construction or Alteration, for each structure that meets the applicable notice criteria. Each filing would include information such as the latitude and longitude, structure height, and the elevation at the structure location. The FAA then conducts an aeronautical study for potential airspace impacts and issues a Notice of Preliminary Findings or a Determination of No Hazard. A Determination of No Hazard may be conditioned on marking and lighting of the transmission line. If a structure's location is changed prior to construction, it is necessary to resubmit Form 7460-1 for that structure. When the construction is complete, the Applicants will submit as-built information using Form 7460-2.

7.1.2 Minnesota State Approval

7.1.2.1 Route Permit and Certificate of Need

The Project requires a Certificate of Need under Minn. Stat. § 216B.243, and a Route Permit under Minn. Stat. § 216I.03 from the Commission. These processes are further described in **Section 2**.

7.1.2.2 MPCA, NPDES Permit

Construction projects that disturb 1 or more acres of land require coverage under the General Permit from the MPCA. This permit is issued to "construction site owners and their operators to prevent stormwater pollution during and after construction."[231] **Section 6.8.7** discusses potential impacts on water resources.

7.1.2.3 MPCA, Section 401, Clean Water Act

According to the MPCA, "Section 401 of the Clean Water Act is designed to ensure that the federal government does not issue a permit or license for a project that will result in a violation of the

[231] MPCA. 2025. Construction stormwater. Available online at: https://www.pca.state.mn.us/business-with-us/construction-stormwater. Accessed August 2025.

state water quality standards."[232] Should a Section 404 Clean Water Act permit be required, then a Section 401 Water Quality Certification would be required. The Project is likely to qualify under the RGP and the MPCA has already issued a Section 401 Certification associated with this permit; therefore, no additional review would be required should the Project meet applicable conditions. **Section 6.8.7** discusses potential impacts on water resources.

7.1.2.4 MDNR, License to Cross Public Lands and Waters

The MDNR Division of Lands and Minerals regulates utility crossings over, under, or across any state-administered lands or public waters identified on the PWI. A license to cross public lands and waters is required under Minn. Stat. § 84.415 and Minn. R. ch. 6135. As further discussed in **Sections 6.4.6** and **6.8.7**, the Project crosses public lands and waters, respectively; therefore, Utility Licenses to Cross Public Lands and Waters will be required. The Applicants have initiated and will continue consultation with the MDNR regarding these crossings (see Appendix C).

7.1.2.5 MDNR, Work in Public Waters

Minn. Stat. § 103G.245 defines the requirements of the Work in Public Waters permit, which is required for activities that alter the course, current, cross-section, or bed of a designated public water. For utility and transmission projects, a Work in Public Waters Permit is typically required when construction activities occur below the ordinary high-water level of a designated public water. Further discussion of the potential impacts on surface waters associated with the Project is provided in **Section 6.8.7.**

7.1.2.6 MDNR, Water Use (Appropriation) Permit

Minn. Stat. § 103G.265 requires the MDNR to manage water resources to ensure an adequate supply to meet long-range seasonal requirements for domestic, agricultural, fish and wildlife, recreational, power, navigation, and quality control purposes. A water use permit from the MDNR is required for all uses withdrawing more than 10,000 gallons of water per day or 1 million gallons per year. Construction dewatering activities are sometimes required during the installation of transmission poles and would be informed by geotechnical investigations conducted prior to construction, discussed in **Section 5.2**.

7.1.2.7 BWSR, Wetland Conservation Act

BWSR administers WCA in the state of Minnesota. As described in **Section 6.8.7**, the Project will impact wetlands; however, the Applicants anticipate being eligible for the Exemption for Utilities in accordance with Minn. Stat. § 103G.2241, subd. 6, and Minn. R. 8420.0420, subp. 6, which allows the utility exemption for installation, maintenance, repair, or replacement of lines if (a) the impacts have been avoided and minimized to the extent possible; and (b) the proposed project significantly modifies or alters less than 0.5 acre of wetlands. Further discussion of the potential impacts on wetlands associated with the Project are provided in **Section 6.8.7**.

There are lands crossed by Segment 2 of the Proposed Route that are part of various conservation easement programs including RIM and CREP. The Applicants will work with BWSR

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[232] MPCA. 2025. Clean Water Act Section 401 Water Quality Certifications. Available online at: https://www.pca.state.mn.us/business-with-us/clean-water-act-section-401-water-quality-certifications. Accessed August 2025.

and private landowners to coordinate the approvals necessary for placing the transmission facilities within these easements.

7.1.2.8 MDNR, Threatened and Endangered Species Consultation

Minn. Stat. § 84.0895 prohibits the take, import, transport, or selling of any portion of an endangered species or wild animal or plant. To determine if a project will impact a state listed threatened or endangered species, the Applicants have and will continue consultation with the MDNR Natural Heritage and Nongame Research Program, which collects, manages, and interprets information about nongame species. The results of initial consultation regarding the Project are provided in **Section 6.8.10** and **Appendix C**.

7.1.2.9 MDNR, Calcareous Fen No Effect Concurrence

Calcareous fens are characterized by specific soils, hydrology, groundwater chemistry, and vegetation criteria as defined in Minn. R. 8420.0935 and are identified in the State Register. Minn. Stat. §103G.223 prohibits the filling, draining, or otherwise degradation, wholly or partially, by any activity, of a calcareous fen, unless approved by the MDNR via a management plan. The Applicants have initiated and will continue consultation with the MDNR Calcareous Fen Management Program to determine if the Project will impact a calcareous fen. The results of initial consultation regarding the Project are provided in **Section 6.8.7** and Appendix C.

7.1.2.10 MnDOT, Utility Accommodation on Trunk Highway Right-of-way

Minnesota statutes and rules require utility owners to obtain a permit from MnDOT to install, alter, or maintain utility facilities on trunk highway right-of-way. New legislation under Minn. Stat. §§ 161.45 and 161.46 now requires that a Constructability Report be prepared and submitted to MnDOT before or concurrent with the Utility Accommodation Permit application if a permittable route along a trunk highway right-of-way is identified for possible co-location of transmission lines. The Applicants have initiated and will continue consultation with MnDOT regarding these crossings (see **Section 6.4.4** and **Appendix C**).

7.1.2.11 MnDOT, Miscellaneous Work on Trunk Highway Right-of-way

The application for Miscellaneous Work on Trunk Highway Right-of-way is used for minor work, such as installation of utility service connections that do not cross or parallel the roadway within the trunk highway right-of-way. It is also used for installation of miscellaneous guy wires and anchors, to place temporary obstructions on the right-of-way, and to perform temporary relocations of a more minor nature to accommodate a highway construction project. In addition, MnDOT requires this form from the utility owner for service and maintenance operations within trunk highway right-of-way. For utility-initiated projects, utility owners submit this form to the appropriate MnDOT district permit office.

7.1.2.12 MnDOT, Access/Driveway Permit

The application for Access/Driveway Permit is used for all requests for a driveway or other access point to a trunk highway or for a change in use of existing access. For utility-initiated projects, utility owners submit this form to the appropriate MnDOT district permit office.

7.1.2.13 MnDOT, Oversize/Overweight Permits

The Applicants will apply for oversize and/or overweight permits for vehicles using state trunk highways during construction and operation of the Project that have loads of excess height, length, and/or weight, although overlength utility poles may be exempt. Certain overweight and/or overlength loads require escorts, which the Applicants will arrange as necessary. For utility-initiated projects, utility owners submit this form to the appropriate MnDOT district permit office.

7.1.3 Minnesota Local Approvals

Once the Commission issues a Route Permit, local zoning, building and land use regulations and rules are preempted.[233] Typical other approvals associated with transmission line and associated facility construction are further detailed below.

7.1.3.1 Road Crossing/Right-of-Way Permits

County, township and city road authorities in Minnesota typically require permits when a project occupies, crosses, excavates within, or otherwise affects a public road right-of-way. These permits help ensure the safety, operation, and integrity of public road infrastructure. For transmission projects, road crossing and right-of-way permits are commonly obtained after a Route Permit is issued and prior to construction. Such permits may be required for crossings of county highways, township roads, and municipal streets, as well as for temporary construction access, staging, and occupancy of public right-of-way.

7.1.3.2 Access/Driveway Permits

Driveway, access, entrance, or approach permits are typically required when a project proposes a new access point or modifies an existing access connection to a county, township, or city roadway. These permits allow local road authorities to evaluate safety, traffic operations, drainage, maintenance needs, and right-of-way impacts before approving construction.

7.1.3.3 Overwidth/Overweight Load Permits

Overwidth/Overweight Load Permits authorize the movement of vehicles, equipment, or loads that exceed the size or weight limits established under Minnesota law on local road systems. These permits are typically required for construction equipment, transmission line materials, transformers, cranes, and other oversized loads that will travel on county, township, or municipal roads.

7.2 AGENCIES AND TRIBAL NATIONS CORRESPONDENCE

Federal, state, and local agencies and Tribal Nations were provided with three Project introductory and update letters, starting with the Certificate of Need Notice Plan, submitted in December 2025; initial 216I letter presenting routing options in May 2026, and an updated 216I letter presenting the route alignments presented in this Application in August 2026. These letters solicited feedback on the Project and routing options and offered to set up meetings for further discussion. **Appendix C** includes a summary of these coordination efforts. The subsections below provide a more thorough summary of coordination efforts, where warranted. **Appendix C** also provides agency

[233] Minn. Stat. § 216I.18, subd. 1.

and Tribal contact information, and documentation of correspondence with federal, state and local agencies, and Tribal Nations.

7.2.1 U.S. Army Corps of Engineers

The USACE responded to the Project notification letter on September 26, 2023, and provided contact information for the USACE Project Manager that will evaluate the Applicants' Section 404 permit. The USACE Project Manager provided additional correspondence on October 12, 2023, that outlined the potential regulatory requirements for the Project and the process for obtaining a Section 10 and/or Section 404 permit from USACE.

On January 16, 2026, a pre-application meeting was held with USACE, followed by email correspondence regarding structure clearance requirements and distribution of a Project fact sheet.

7.2.2 U.S. Fish and Wildlife Service, Region 3 Minnesota-Wisconsin Ecological Services Field Office

The Applicants submitted a Project introduction and update letter to the USFWS in May and August 2026 respectively. The Applicants also submitted a query through the USFWS IPaC to identify potential federally-listed species that would be affected by the Project, which are further discussed in **Section 6.8.10**. On August 20, 2026, the USFWS responded to the August 12, 2026 letter with guidance on the process for future coordination with the USFWS, and general recommendations for conservation measures for federally listed species or habitat that may be affected by the Project.

7.2.3 U.S. Fish and Wildlife Service, Upper Mississippi River Wildlife and Fish Refuge

Starting in December 2025, meetings have been held with USFWS to discuss the Project and the processes and requirements related to the Project's crossing of the NWFR and, more specifically, a land exchange. Additionally, meetings have been held and formal letters have been sent to USFWS to demonstrate the intent to pursue a land exchange, initiate the land exchange process, and identify parcels proposed for the land exchange.

7.2.4 Iowa Tribe of Kansas and Nebraska

On May 4, 2026 the Iowa Tribe of Kansas and Nebraska THPO responded to the Project introduction letter requesting geospatial data for the proposed Project and also indicated interest in participating in surveys and being present during ground disturbing construction activities. The Applicants responded on May 11, 2026 providing the requested geospatial information, and provided a tentative schedule of anticipated survey work, permitting and construction activities. The Applicants will continue to coordinate with the THPO on these efforts.

7.2.5 Minnesota Department of Natural Resources

MDNR sent a request for an initial meeting on February 24, 2026 via the Project email address from the website. The Applicants held an initial informational meeting on March 4, 2026. During that meeting, the MDNR identified calcareous fens, viewshed impacts, migratory bird pathways, karst/Decorah Edge, proximity to MDNR properties and interference with prescribed burns, SNAs, rusty patched bumble bee state listing, tree replacement program as MDNR issues/concerns (see meeting notes provided in **Appendix C**).

Subsequently, the Applicants submitted a Project introduction letter to agencies and Tribes, including the MDNR, on May 1, 2026, which identified the various route options being considered in Segment 1 (see **Section 4.4.1**), and the proposed route for Segment 2. In response to this letter, the MDNR reached out on May 29, 2026 requesting a recurring meeting with the Applicants.

The Applicants submitted the NHIS review via MCE online system on June 11, 2026 and received a response on October 2, 2026 (see **Appendix C**). The Applicants used an NHIS license agreement and MDNR publicly available data sets, supplemented by the NHIS response, to identify ecologically significant areas and known occurrences of state-listed species within and adjacent to the Proposed Routes. These resources include NPCs, MBS SBS, native prairie, wildlife habitat conservation areas, and other ecologically significant features that support rare species and high-quality native habitats, as further discussed in **Section 6.8.10**.

On June 16, 2026, the Applicants met with Calcareous Fen Coordinator, as recommended by the MDNR during the March 4, 2026 meeting. The Applicants provided a shapefile of the preliminary proposed alignment to Calcareous Fen Coordinator for review on June 12, 2026, prior to the meeting. The Calcareous Fen Coordinator indicated that the main concerns for the MDNR regarding HVTL construction and calcareous fen resources are the initial construction of the foundations and associated dewatering. MDNR prefers that transmission line rights-of-way avoid crossing a fen because of potential for herbicide treatment. The MDNR does not have a defined avoidance buffer for a fen – that is determined on a case-by-case basis based on hydrology. MDNR indicated their main concern is with the High Forest 35 Fen (fen number 8276) and Chester Fen (fen number 9628), which are the closest fens to the Proposed Alignment. MDNR recommends conducting geotechnical borings within 1.5 miles of these fens and recording static water levels within 24 hours to understand artesian conditions. The Applicants committed to prepare a geotechnical survey plan for the route designated by the MPUC that incorporates the recommendations from the MDNR for these locations. MDNR indicated there is no preference on the timing of the borings; only preference is to avoid drought conditions, as practicable. Once the Route Permit is issued, the Applicants will initiate the formal consultation process by providing the MDNR with the Information Requirements for Projects near Groundwater Dependent Features. The Applicants will further coordinate with the MDNR regarding structure locations pending the results of their assessment (see meeting notes provided in **Appendix C**).

The Applicants held the first recurring meeting with the MDNR on June 23, 2026. The Applicants provided a summary of the current Project status, including a summary of the calcareous fen meeting and indicating that the MCE online review for the Project had been submitted. The main topics of this meeting included (meeting notes provided in **Appendix C**):

- The Applicants clarified that the Route Permit application will only present one preferred route per the new regulations.
- MDNR indicated that the Project should avoid crossing Outstanding ranked MBS sites and S1-S3 ranked NPCs and that protected plan surveys may be required.
- The Applicants committed to completing geotechnical investigations for the Project once a route has been selected by the Commission and landowner permissions are available. The Applicants will submit a Karst Survey Plan to the MDNR prior to the geotechnical investigations, and develop a Karst Contingency Plan after surveys are complete, consistent with MDNR requests on other projects in karst terrain.

- MDNR expressed concern about the Proposed Route crossing in proximity to WMAs and requested that the Applicants include a wider route width where the route is adjacent to WMAs in order to ensure flexibility for moving the alignment if the WMA is managed for waterfowl/bird habitat. There are no WMAs crossed by the Proposed Rights-of-Way; the Rustic Retreat WMA is the closest WMA to the Project, approximately 0.25 mile north of Segment 2 near Taopi.

On July 28, 2026, the Applicants met with the MDNR to provide an update on the progress on the Route Permit application development. The Applicants clarified that the MPUC would develop an EIS for the Project. Although the Applicants will only propose one route in the Route Permit Application, the MPUC will conduct scoping and informational hearings and other route alternatives may be added. The MDNR again raised concerns regarding karst terrain, size of the structures and potential stability issues. The MDNR also indicated that they may request a viewshed study for Lake Louise State Park and requested additional route width around state lands that are in the vicinity of the Proposed Alignment (meeting notes provided in **Appendix C**).

On August 12, 2026, Applicants sent the MDNR a Project update letter with a map depicting the Proposed Route, and provided a separate email with shapefiles of the Proposed Routes, Proposed Rights-of-Way and Proposed Alignments and tables of identifying crossings of MDNR lands and waters. The Applicants requested federal encumbrance review and requested Lands & Minerals Division attendance at the August 25, 2026 to review the Project's proposed public lands and waters crossings.

During the August 25, 2026 meeting, the Applicants indicated that the draft Route Permit Application had been submitted to the MPUC for review. MDNR requested additional information on the difference in the structures (i.e., height, spans) between the existing 161 kV transmission line and the proposed 765 kV / 161 kV lattice structures, which was provided during the meeting. The MDNR inquired on whether the Commission establishes a maximum route width for the Proposed Route; the Applicants clarified that the statute prescribes a maximum 1.25-mile wide route. MDNR indicated that they may request additional route width or propose route alternatives to avoid direct and indirect impacts to sensitive resources, including SNAs, WMAs, state trails, forests, and parks, BWSR RIM easements, RNCs and karst. The Applicants confirmed that they will be requesting a maximum 1.25-mile route width at a few locations, including the area surrounding the Shooting Star Prairie SNA and Shooting Star Trail to allow flexibility in this area. MDNR also indicated that they would like to increase the distance of the Proposed Alignment from the Lake Louise State Park. The Applicants encouraged the MDNR to provide routing comments and potential route alternatives during the MPUC scoping process, as this would allow the Commission to study and compare route alternatives. The Applicants also requested that the MDNR provide suggested areas of concern or potential route alternatives based on their review of the Proposed Route, Proposed Rights-of-Way and Proposed Alignment shapefiles so that the Applicants can review and incorporate reroutes where feasible (meeting notes provided in **Appendix C**).

On August 31, 2026, the MDNR provided an early coordination letter to the Applicants identifying concerns related to:

- Wildlife impacts, including avian impacts, grassland birds, and bats

- Impacts to Minnesota Recreation System units, including the Lake Louise State Park, State Trails, State Water Trails, WMAs, AMAs, State Forest, and SNAs

- State-listed species
- NPCs, SBS, RNCs, calcareous fens, and sensitive ecological areas
- Wetlands, rivers and trout streams
- Karst geology
- BWSR-managed RIM and CREP lands
- Permitting guidance, including Utility Crossing Licenses, access agreements, work in public waters permits, and water appropriation permits
- Guidance on the VMP

The letter also included suggested revisions to the Proposed Route (see **Appendix C**).

The Applicants responded to the MDNR letter on September 25, 2026, which included a revised Proposed Route shapefile that excluded the Racine Prairie SNA, and a wider route with north of the Lake Louise State Park and the City of Harmony area to allow for additional routing flexibility at these locations (see **Appendix C**). This revised Proposed Route is incorporated into this Application.

On October 20, 2026, the Applicants held a recurring monthly meeting with the MDNR. During this meeting, the Applicants provided an overview of the route alternative process, and the route alternatives that had been considered by the Applicants to date. The MDNR suggested a potential alternative alignment to avoid the Shooting Star Prairie SNA, and a route segment alternative along County Road 14 in Houston County to avoid ecologically sensitive features (see **Section 4**). The Applicants and MDNR also discussed the October 2, 2026 NHIS review response from the MDNR. Meeting notes are provided in **Appendix C**.

The Applicants will continue to coordinate with the MDNR regarding the concerns identified above and potential alternative alignments.

7.2.6 Minnesota Department of Transportation

The Applicants met with MnDOT on June 16, 2026. The Applicants introduced the Project and discussed potential route options. Discussion focused on routes along I-90. Anticipated timelines for permitting and construction were also discussed so the agency could review any conflicts with associated roadway projects. The Applicants will submit an Early Notification Memo to MnDOT to facilitate their review of potential Project-related impacts to the MnDOT highway system. Documentation of this correspondence is provided in **Appendix C**. The Applicants will continue to coordinate with MnDOT throughout the Project planning and permitting process.

7.2.7 Minnesota Board of Water and Soil Resources

The Applicants met with the BWSR on August 21, 2026 to introduce the Project. Discussion focused on the portions of the Proposed Routes that intersect with BWSR conservation easements. The Applicants provided shapefiles of the Proposed Route, Proposed Alignment and Proposed Rights-of-Way, in addition to Dairyland's existing easements associated with the 161 kV transmission line for BWSR for review. BWSR responded on August 31, 2026 with additional

information regarding each conservation easement and the potential permitting process and mitigation that would need to occur. BWSR staff indicated additional evaluation would be required at the time of permitting to assess compatibility of the Project with each easement. Documentation of this correspondence is provided in **Appendix C**. The Applicants will continue their coordination with BWSR regarding any easements proposed to be crossed by the Project.

7.2.8 Wabasha County

The Applicants have corresponded with staff from both Wabasha County and Mazeppa Township in Wabasha County. The Wabasha County staff have inquired on the potential for wetland impacts, and the Applicants indicated that additional information on wetland impacts would be provided in the Route Permit application, and subsequently during the USACE permitting process for the route designated by the MPUC. The USACE Section 404 permit application is a joint application that is also provided to the local government units.

The Mazeppa Township staff provided a comment letter in May and August 2026 requesting that the Applicants utilize existing utility rights-of-way, particularly at the Zumbro River crossing to avoid introducing a new river crossing. The letter also asked the Applicants to minimize impacts to forested areas, particularly within the RJD Memorial Hardwood Forest, and to avoid and minimize impacts to residences. Subsequently, Mazeppa Township provided inundation maps prepared by RPU that identifies the probable maximum flooding for failure scenarios at the Lake Zumbro Dam for consideration by the Applicants for the design the Zumbro River crossing (see **Appendix C**).

TABLES

TABLE 6.4.4-4

Communication Towers within 10 miles of Proposed Alignments

Segment	Registration Number	Latitude	Longitude	Distance from Proposed Alignment (miles) [a]	Direction
Segment 1	1016854	44.20915874N	092.59665921W	2.5	N
Segment 1	1023209	44.35054762N	092.78165914W	9.9	SE
Segment 1	1045800	44.02249208N	092.27860377W	0.5	W
Segment 1	1060706	44.04332542N	092.39693707W	4.4	NE
Segment 1	1212092	44.00610321N	092.42360373W	4.5	SE
Segment 1	1019126	43.87051990N	092.50746483W	8.9	NE
Segment 1	1021982	44.06360319N	092.35332596W	2.5	N
Segment 1	1024048	44.27790872N	092.39699259W	2.7	SW
Segment 1	1024057	44.11632543N	092.68952031W	8.6	N
Segment 1	1024437	44.05582542N	092.41221484W	4.0	NE
Segment 1	1025244	44.04218653N	092.34071486W	2.5	E
Segment 1	1011356	44.01665876N	092.46443705W	6.4	SE
Segment 1	1011357	43.91724211N	092.43907596W	4.3	NE
Segment 1	1014477	44.04026985N	092.21832601W	3.5	W
Segment 1	1023351	44.24949207N	092.64129808W	0.4	SE
Segment 1	1023897	43.97021432N	092.41821485W	2.7	SE
Segment 1	1023898	44.12443653N	092.56832590W	8.2	E
Segment 1	1023903	44.16360316N	092.17638156W	7.8	SW
Segment 1	1024213	44.02126986N	092.29879821W	0.4	E
Segment 1	1024310	43.85004766N	092.17538160W	10.0	NW
Segment 1	1027971	44.09282542N	092.48482592W	5.8	NE
Segment 1	1029133	44.04113097N	092.34040930W	2.5	E
Segment 1	1034334	44.08721430N	092.40693706W	2.5	E
Segment 1	1042726	44.04551986N	092.39871484W	4.3	NE
Segment 1	1051841	43.97104765N	092.41524263W	2.6	SE
Segment 1	1052033	44.34426984N	092.76860359W	9.2	SE
Segment 1	1052034	44.04471431N	092.40027040W	4.3	NE
Segment 1	1054363	43.83313101N	092.47752040W	9.9	NE
Segment 1	1201971	44.32515873N	092.67790917W	5.9	SE
Segment 1	1201977	44.21376986N	092.65385364W	1.7	N
Segment 1	1201982	44.12674209N	092.56546478W	8.0	E
Segment 1	1205184	44.09260319N	092.38724262W	1.5	E
Segment 1	1216194	43.95868654N	092.33960376W	0.1	S
Segment 1	1216195	44.28407541N	092.79832581W	7.7	SE
Segment 1	1216196	43.98496430N	092.14588159W	7.1	W
Segment 1	1220462	43.94754764N	092.20018713W	4.7	W
Segment 1	1220658	43.95710320N	092.23727046W	2.7	W
Segment 1	1222515	43.91746433N	092.40460375W	3.0	NE
Segment 1	1224325	44.17954763N	092.55618700W	4.5	N
Segment 1	1224625	44.31029763N	092.77060359W	7.5	SE
Segment 1	1225393	43.94379765N	092.35979820W	0.8	NW

TABLE 6.4.4-4

Communication Towers within 10 miles of Proposed Alignments

Segment	Registration Number	Latitude	Longitude	Distance from Proposed Alignment (miles) [a]	Direction
Segment 1	1234506	44.02976987N	092.49193704W	8.1	SE
Segment 1	1237547	43.84746435N	092.49321484W	9.5	NE
Segment 1	1237955	44.02329765N	092.43543706W	5.8	SE
Segment 1	1239059	43.95432543N	092.28015933W	1.1	NW
Segment 1	1245592	43.96160319N	092.14054826W	7.4	W
Segment 1	1247370	43.85490878N	092.33627044W	6.9	N
Segment 1	1247504	44.18679763N	092.55043700W	4.0	N
Segment 1	1247674	44.13415875N	092.58749255W	7.7	N
Segment 1	1247711	44.34279761N	092.64238140W	6.7	S
Segment 1	1251621	44.23890873N	092.44796480W	0.2	N
Segment 1	1251776	44.34207537N	092.38924258W	7.1	S
Segment 1	1252253	44.17440874N	092.52788146W	4.9	N
Segment 1	1254739	44.16260317N	092.18035378W	7.6	SW
Segment 1	1258223	44.25560317N	092.43793703W	0.9	S
Segment 1	1259871	44.38249205N	092.62082585W	9.4	S
Segment 1	1261493	44.18054765N	092.76582583W	6.8	NE
Segment 1	1266198	44.11101986N	092.46760370W	4.3	NE
Segment 1	1273071	43.99240875N	092.22402045W	3.2	W
Segment 1	1289978	44.30782537N	092.27579818W	8.4	SW
Segment 1	1292380	43.99554765N	092.43327039W	4.3	SE
Segment 1	1294082	44.04696430N	092.24743711W	2.1	W
Segment 1	1296264	44.02529765N	092.43199261W	5.8	SE
Segment 1	1309169	44.05632543N	092.51449259W	8.3	E
Segment 1	1319915	44.12607540N	092.25554821W	3.1	SW
Segment 1	1330243	44.09432542N	092.52410369W	7.2	NE
Segment 1	1330894	44.12607540N	092.25554821W	3.1	SW
Segment 1	1332482	44.06363097N	092.35327041W	2.5	N
Segment 1	1059748	43.98613099N	092.41765929W	3.3	SE
Segment 1	1059749	43.98585321N	092.41749262W	3.3	SE
Segment 1	1059751	43.98746432N	092.42788151W	3.7	SE
Segment 1	1059752	43.98796432N	092.42779817W	3.8	SE
Segment 1	1059753	43.98843654N	092.42746484W	3.8	SE
Segment 1	1059754	43.98854765N	092.42827040W	3.8	SE
Segment 1	1059755	43.98804765N	092.42827040W	3.8	SE
Segment 1	1059756	43.98665876N	092.42804817W	3.7	SE
Segment 1	1059748	43.98607543N	092.41738151W	3.3	SE
Segment 1	1059749	43.98585321N	092.41738151W	3.3	SE
Segment 1	1059751	43.98776987N	092.42777040W	3.8	SE
Segment 1	1059752	43.98776987N	092.42777040W	3.8	SE
Segment 1	1059753	43.98776987N	092.42777040W	3.8	SE
Segment 1	1059754	43.98776987N	092.42777040W	3.8	SE

TABLE 6.4.4-4

Communication Towers within 10 miles of Proposed Alignments

Segment	Registration Number	Latitude	Longitude	Distance from Proposed Alignment (miles) [a]	Direction
Segment 1	1059755	43.98776987N	092.42777040W	3.8	SE
Segment 1	1059756	43.98749210N	092.42777040W	3.7	SE
Segment 2	1024071	43.56138106N	092.59582596W	0.7	S
Segment 2	1024652	43.70832548N	092.56665928W	1.1	NW
Segment 2	1044204	43.63249208N	091.28499299W	5.1	S
Segment 2	1045800	44.02249208N	092.27860377W	6.6	SW
Segment 2	1060706	44.04332542N	092.39693707W	6.4	S
Segment 2	1212092	44.00610321N	092.42360373W	4.5	SE
Segment 2	1019126	43.87051990N	092.50746483W	2.4	SE
Segment 2	1021982	44.06360319N	092.35332596W	7.7	S
Segment 2	1024070	43.68038101N	092.14182607W	8.9	S
Segment 2	1024437	44.05582542N	092.41221484W	7.4	S
Segment 2	1025244	44.04218653N	092.34071486W	6.3	S
Segment 2	1011356	44.01665876N	092.46443705W	6.4	SE
Segment 2	1011357	43.91724211N	092.43907596W	1.5	SE
Segment 2	1011414	43.57082549N	092.42721489W	1.4	S
Segment 2	1014477	44.04026985N	092.21832601W	9.6	SW
Segment 2	1023790	43.68999208N	091.50304848W	9.4	S
Segment 2	1023894	43.68165883N	092.75388145W	6.4	E
Segment 2	1023897	43.97021432N	092.41821485W	2.7	SE
Segment 2	1023901	43.69693658N	092.40693711W	8.4	NW
Segment 2	1024213	44.02126986N	092.29879821W	5.9	SW
Segment 2	1027534	43.68215879N	092.08585387W	9.0	S
Segment 2	1029133	44.04113097N	092.34040930W	6.3	S
Segment 2	1031596	43.68138099N	091.75777063W	9.0	S
Segment 2	1034334	44.08721430N	092.40693706W	9.4	S
Segment 2	1042726	44.04551986N	092.39871484W	6.5	S
Segment 2	1042747	43.70951993N	092.68849258W	4.3	SE
Segment 2	1043296	43.64332550N	092.64732593W	0.5	E
Segment 2	1051841	43.97104765N	092.41524263W	2.6	SE
Segment 2	1052034	44.04471431N	092.40027040W	6.5	S
Segment 2	1054363	43.83313101N	092.47752040W	0.2	NW
Segment 2	1054969	43.67304772N	092.69860369W	3.6	E
Segment 2	1063897	43.64276993N	092.52665930W	5.0	NW
Segment 2	1205184	44.09260319N	092.38724262W	9.7	S
Segment 2	1209198	43.52326990N	091.77679842W	1.9	N
Segment 2	1209201	43.51160329N	092.53335376W	2.6	N
Segment 2	1216194	43.95868654N	092.33960376W	1.5	W
Segment 2	1218270	43.73276993N	092.67554814W	4.5	SE
Segment 2	1220462	43.94754764N	092.20018713W	8.4	W
Segment 2	1220639	43.71579771N	092.68999258W	4.6	SE

TABLE 6.4.4-4

Communication Towers within 10 miles of Proposed Alignments

Segment	Registration Number	Latitude	Longitude	Distance from Proposed Alignment (miles) [a]	Direction
Segment 2	1220658	43.95710320N	092.23727046W	6.6	W
Segment 2	1221579	43.80401991N	092.58021482W	3.0	SE
Segment 2	1221624	43.55690885N	092.68213149W	0.1	E
Segment 2	1222511	43.67254773N	092.83038143W	9.7	E
Segment 2	1222515	43.91746433N	092.40460375W	0.1	SE
Segment 2	1225273	43.58776988N	091.48721516W	2.4	S
Segment 2	1225393	43.94379765N	092.35979820W	0.7	NW
Segment 2	1230214	43.53021435N	091.87421506W	1.4	N
Segment 2	1234506	44.02976987N	092.49193704W	8.1	SE
Segment 2	1235664	43.70393658N	092.38004822W	9.1	NW
Segment 2	1237547	43.84746435N	092.49321484W	1.0	SE
Segment 2	1237955	44.02329765N	092.43543706W	5.9	SE
Segment 2	1239059	43.95432543N	092.28015933W	4.4	W
Segment 2	1244891	43.55199214N	091.99446502W	0.1	SE
Segment 2	1247370	43.85490878N	092.33627044W	4.9	W
Segment 2	1248173	43.93468656N	092.61735368W	9.4	SE
Segment 2	1249582	43.65835328N	092.68868703W	2.8	E
Segment 2	1257193	43.66618656N	091.93102058W	7.9	S
Segment 2	1258743	43.55057543N	091.36146520W	0.5	N
Segment 2	1258996	43.66874208N	091.40415962W	7.6	S
Segment 2	1261052	43.70601993N	092.57949261W	0.6	NW
Segment 2	1261732	43.89832546N	092.65471479W	9.7	SE
Segment 2	1263026	43.65932547N	092.29965936W	7.5	S
Segment 2	1263027	43.57029766N	091.61174290W	1.3	S
Segment 2	1273071	43.99240875N	092.22402045W	7.7	W
Segment 2	1292077	43.53768661N	092.38768713W	0.8	N
Segment 2	1292380	43.99554765N	092.43327039W	4.3	SE
Segment 2	1292440	43.64538098N	091.49940959W	6.3	S
Segment 2	1292626	43.69015880N	092.25196493W	9.6	S
Segment 2	1293444	43.56596433N	091.63552068W	1.1	S
Segment 2	1294082	44.04696430N	092.24743711W	8.9	SW
Segment 2	1296264	44.02529765N	092.43199261W	5.9	SE
Segment 2	1305892	43.62674215N	092.42813155W	5.2	S
Segment 2	1306707	43.77063102N	092.48435374W	2.2	NW
Segment 2	1306965	43.79149214N	092.59565926W	3.0	SE
Segment 2	1308103	43.67271437N	092.39424267W	8.4	S
Segment 2	1309139	43.57290884N	092.64782594W	1.0	W
Segment 2	1310893	43.55910329N	092.69990926W	0.7	E
Segment 2	1314385	43.64149209N	091.50079848W	6.0	S
Segment 2	1314665	43.56638107N	092.72435370W	1.9	E
Segment 2	1316870	43.68182543N	091.75518729W	9.0	S

TABLE 6.4.4-4

Communication Towers within 10 miles of Proposed Alignments

Segment	Registration Number	Latitude	Longitude	Distance from Proposed Alignment (miles) [a]	Direction
Segment 2	1318318	43.84238102N	092.56254815W	3.7	SE
Segment 2	1319346	43.67771435N	092.17929828W	8.7	S
Segment 2	1321639	43.69560325N	092.37929823W	9.5	NW
Segment 2	1331287	43.67932543N	091.74954841W	8.8	S
Segment 2	1331388	43.63526992N	092.26471493W	5.8	S
Segment 2	1331764	43.55279766N	091.51932627W	0.1	N
Segment 2	1332166	43.64949209N	091.49004849W	6.6	S
Segment 2	1332224	43.54285325N	092.00340946W	0.1	NW
Segment 2	1332397	43.53038101N	091.77613175W	1.4	N
Segment 2	1332482	44.06363097N	092.35327041W	7.7	S
Segment 2	1059748	43.98613099N	092.41765929W	3.3	SE
Segment 2	1059749	43.98585321N	092.41749262W	3.3	SE
Segment 2	1059751	43.98746432N	092.42788151W	3.7	SE
Segment 2	1059752	43.98796432N	092.42779817W	3.8	SE
Segment 2	1059753	43.98843654N	092.42746484W	3.8	SE
Segment 2	1059754	43.98854765N	092.42827040W	3.8	SE
Segment 2	1059755	43.98804765N	092.42827040W	3.8	SE
Segment 2	1059756	43.98665876N	092.42804817W	3.7	SE
Segment 2	1059748	43.98607543N	092.41738151W	3.3	SE
Segment 2	1059749	43.98585321N	092.41738151W	3.3	SE
Segment 2	1059751	43.98776987N	092.42777040W	3.8	SE
Segment 2	1059752	43.98776987N	092.42777040W	3.8	SE
Segment 2	1059753	43.98776987N	092.42777040W	3.8	SE
Segment 2	1059754	43.98776987N	092.42777040W	3.8	SE
Segment 2	1059755	43.98776987N	092.42777040W	3.8	SE
Segment 2	1059756	43.98749210N	092.42777040W	3.7	SE
Q-9	1044204	43.63249208N	091.28499299W	5.2	S
Q-9	1225273	43.58776988N	091.48721516W	9.2	E
Q-9	1258743	43.55057543N	091.36146520W	2.6	E
Q-9	1258996	43.66874208N	091.40415962W	9.0	SE

[a] Gray shading indicates towers located within the Proposed Routes

Source: Federal Communications Commission. 2026. Antenna Structure Registrations, Minnesota. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_mngeo/util_fcc/FeatureServer/0. Accessed July 2026.

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
Segment 1			
State-Managed Properties			
Zumbro Falls Woods Scientific and Natural Area	MDNR-managed SNA that protects native forest and bluffland habitats and associated plant and wildlife communities in southeastern Minnesota. The site is managed for conservation, education, scientific study, and nature observation. [b]	Outside of the Proposed Route	0.8 mile northeast of the Proposed Right-of-Way
Mazeppa Creek AMA	MDNR-managed AMA that protects public access to Mazeppa Creek and associated aquatic and riparian habitats. The area provides opportunities for fishing, wildlife observation, and other water-based recreational activities while supporting the conservation of fish habitat and stream corridor ecosystems. [c]	North of the Proposed Route	0.9 mile north of Proposed Right-of-Way
Zumbro River AMA	MDNR-managed AMA that protects public access to the Zumbro River and associated aquatic and riparian habitats. The area provides opportunities for fishing, wildlife observation, and other water-based recreational activities while supporting the conservation of fish habitat and stream corridor ecosystems. [c]	2.8 acres located within the Proposed Route	0.7 mile south of Proposed Right-of-Way
Private Recreational Areas			
Steeplechase Ski Hill and Event Center	Privately owned recreational facility that provides seasonal downhill skiing and other winter recreation opportunities, as well as a year-round event venue for private and community gatherings. [d]	Located within Proposed Route	0.3 mile south of Proposed Right-of-Way
Zumbro Falls Golf Club	Privately owned recreational facility featuring a nine-hole golf course and event venue. The facility provides opportunities for golf, outdoor recreation, and private or community gatherings. [e]	0.6 miles north of the Proposed Route	0.7 miles north of Proposed Right-of-Way
State Trails			
Great River Ridge State Trail	MDNR-managed paved multi-use state trail in Wabasha and Olmsted Counties that follows a former railroad between Plainview and Eyota. The trail is used for bicycling, walking, horseback riding, and snowmobiling and provides recreational access through southeastern Minnesota's bluffland and agricultural landscapes.[f]	Proposed Route parallels trail for approximately 5 miles.	Trail is between 0.8 mile and 1.5 miles east of the Proposed Right-of-Way
Blufflands State Trail – Chesterwood Segment	The MDNR has acquired surface rights for several parcels along U.S. Highway 14 west of Eyota for the future development of the Blufflands State Trail-Chesterwood Segment that would connect to the Douglas State Trail and Great River Ridge State Trail as part of the larger Blufflands State Trail System.[g]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way
Snowmobile Trails			
Goodhue County Snowmobile Trail System	The Goodhue County Snowmobile Trail System is a public Grant-in-Aid trail network maintained by the Zumbrota Covered Bridge Riders and other local snowmobile clubs under the MDNR snowmobile trail assistance program. The system provides designated winter recreation opportunities throughout Goodhue County and connects communities, rural areas, and regional trail corridors. [h]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
Zumbrowatha Snowmobile Trail System	The Zumbrowatha Snowmobile Trail System is a public Grant-in-Aid snowmobile trail network maintained by the Elba Snowbirds. The trail system provides winter recreation opportunities in Wabasha and Olmsted Counties and connects local communities and recreational destinations within southeastern Minnesota. [h]	Crossed by Proposed Route	11 crossings of Proposed Right-of-Way
Hiawatha 1 & 2 Snowmobile Trail System	The Hiawatha 1 & 2 Snowmobile Trail System is a public Grant-in-Aid snowmobile trail network maintained by the Hiawatha II Snowmobile Club. The trail system provides designated winter recreation opportunities in southeastern Minnesota and serves as part of the broader regional snowmobile trail network supported through the MDNR Grant-in-Aid program. [h]	Crossed by Proposed Route	4 crossings of Proposed Right-of-Way
Water Trails			
Zumbro River	MDNR-designated state water trail that provides opportunities for canoeing, kayaking, fishing, wildlife observation, and other water-based recreation along the Zumbro River in southeastern Minnesota. The trail is part of Minnesota's state water trail system and provides public access to river-based recreational opportunities. [i]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way
Segment 2			
USFWS-Managed Properties			
Upper Mississippi River NWFR	USFWS-managed national wildlife refuge that protects riverine, wetland, forest, and aquatic habitats along the Mississippi River. The refuge provides opportunities for wildlife observation, hunting, fishing, boating, paddling, environmental education, and other nature-based recreational activities while supporting the conservation of fish and wildlife resources. [j]	Proposed Route crosses 392 acres	Proposed Right-of-Way crosses 52.2 acres
MDNR-Managed Properties			
Lake Louise State Park	Lake Louise State Park is a MDNR-managed state park located near Le Roy, Minnesota. The park includes Lake Louise, portions of the Upper Iowa and Little Iowa Rivers, hardwood forests, prairie habitats, and recreational facilities. Popular activities include hiking, horseback riding, bicycling on the Shooting Star State Trail, camping, fishing, paddling, swimming, wildlife observation, and picnicking. The park is recognized as a quiet recreation destination that provides a variety of water-based and trail-based recreational opportunities. [k]	Proposed Route 0.3 miles north	Proposed Right-of-Way 0.4 miles north
RJD Memorial Hardwood State Forest	MDNR-managed state forest consisting of multiple parcels in southeastern Minnesota. The forest protects hardwood forest resources and provides opportunities for hunting, wildlife observation, and other nature-based recreation while contributing to the conservation of regional forest habitats. [l]	Proposed Route crosses 297 acre	Proposed Right-of-Way crosses 3.1 acres
Racine Prairie SNA	MDNR-managed SNA that protects native prairie habitat and associated plant and wildlife communities in southeastern Minnesota. The site is managed for conservation, education, scientific study, and nature observation. [b]	900 feet south of Proposed Route	0.6 miles east of the Proposed Right-of-Way

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
Shooting Star Prairie SNA	MDNR-managed SNA that protects native prairie habitat and associated plant and wildlife communities in southeastern Minnesota. The site is managed for conservation, education, scientific study, and nature observation. [b]	Proposed Route crosses 2.5 acres	Proposed Right-of-Way crosses 0.03 acres
Rustic Retreat WMA	MDNR-managed WMA that provides wildlife habitat conservation and public outdoor recreation opportunities, including hunting, wildlife observation, photography, and other nature-based activities. [m]	Proposed Route crosses 16.2 acres	Approximately 0.4 mile north of Proposed Right-of-Way
Cartney Slough WMA	MDNR-managed WMA that includes wet mesic prairie with some upland areas and a tributary to the Little Iowa River flows through its length. This unit is managed for wetland prairie species by frequent prescribed burns and prairie restoration projects. This area is managed for pheasants, but is used by deer hunters and trappers. [m]	0.25 mile north of Proposed Route	1.25 mile north of Proposed Right-of-Way
Beaver Creek WMA	Beaver Creek WMA is managed by the MDNR to protect and enhance wildlife habitat while providing public access for wildlife-based recreation. The WMA consists of forest, grassland, and riparian habitats characteristic of southeastern Minnesota's bluffland region and supports activities such as hunting, wildlife observation, birdwatching, and nature study. [m]	500 feet to 0.6 mile south of Proposed Route	0.7 miles south of Proposed Right-of-Way
Nosek WMA	Nosek WMA is a MDNR-managed WMA that contributes to the network of public lands managed for wildlife habitat conservation and wildlife-based recreation in southeastern Minnesota. The area provides habitat for a variety of wildlife species and offers opportunities for public hunting, wildlife observation, and other compatible outdoor recreation activities. [m]	0.3 mile south of Proposed Route	1 mile south of Proposed Right-of-Way
Winnebago Creek AMA	MDNR-managed AMA that protects aquatic and riparian habitats while providing public access for fishing, wildlife observation, and other water-related recreational activities. The area is managed to conserve fish habitat, water resources, and associated stream corridor ecosystems. [n]	Proposed Route crosses 3.7 acres	Proposed Right-of-Way crosses 1.1 acres
Riceford Creek AMA	MDNR-managed AMA established to protect aquatic and riparian habitats, support fisheries management, and provide public access to water resources and compatible outdoor recreation. The AMA contributes to conservation of stream corridor habitats and aquatic resources within southeastern Minnesota. [c]	0.3 mile north of Proposed Route	0.5 mile north of Proposed Right-of-Way
Locally Managed Recreational Area			
Root River Park	Olmsted County-managed 125-acre park. Amenities include fishing, hiking, and picnicking.	Proposed Route crosses 126 acres	0.6 miles east of Proposed Right-of-Way
Private Recreational Areas			
Maple Valley Golf and Country Club	Privately owned golf course located between the City of Rochester and Stewartville. [p]	600 feet east of the Proposed Route	1.4 miles east of Proposed Right-of-Way

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
State Trails			
Shooting Star State Trail	MDNR-managed paved multi-use state trail in Mower County extending between Le Roy and Austin. The trail supports bicycling, walking, and other recreational activities and traverses agricultural lands, remnant prairie habitats, and communities in southeastern Minnesota. [f]	The Proposed Route parallels the trail for approximately 5 miles	Proposed Right-of-Way for the 161 kV transmission line into Adams Substation crosses the trail along the existing 161 kV right-of-way; single circuit 765 kV crossing east of Adams Substation, and double-circuit 765 kV/161 kV crossing at 740th Ave; the 765 kV / 161 kV double-circuit also occurs within 250-350 feet of the trail for approximately 1 mile.
Snowmobile Trails			
Viking Ridge Rider Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained by the Viking Ridge Riders Snowmobile Club. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader MDNR-supported regional snowmobile trail network. [h]	Crossed by Proposed Route	10 crossings of Proposed Right-of-Way; co-located with right-of-way for 0.5 miles
Bluff Valley Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained by the Bluff Valley Snowmobile Club. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader MDNR-supported regional snowmobile trail network. [h]	Proposed Route parallels trail for 1.4 miles	3 crossings of Proposed Right-of-Way
Tri-County Snowmobile Trails System	Public Grant-in-Aid snowmobile trail network maintained by the Tri-County Snowmobile Club. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader MDNR-supported regional snowmobile trail network. [h]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way
Gopherland Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	6 crossings of Proposed Right-of-Way and parallels right-of-way for approximately 0.5 mile
Mower County Management Trail System	Public Grant-in-Aid snowmobile trail network maintained by Mower County through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	5 crossings of Proposed Right-of-Way
Driftskippers Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained by the Stewartville Driftskippers through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	6 crossings of Proposed Right-of-Way

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
Mabel Trail Buster Snowmobile Trails System	Public Grant-in-Aid snowmobile trail network maintained by the Mabel Trail Busters through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	2 crossings of Proposed Right-of-Way
Heartland Sno-goers Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained by the Heartland Sno-Goers through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way
Hiawatha 1 & 2 Snowmobile Trail System	The Hiawatha 1 & 2 Snowmobile Trail System is a public Grant-in-Aid snowmobile trail network maintained by the Hiawatha II Snowmobile Club. The trail system provides designated winter recreation opportunities in southeastern Minnesota and serves as part of the broader regional snowmobile trail network supported through the MDNR Grant-in-Aid program. [h]	Crossed by Proposed Route	1 crossing of Proposed Right-of-Way
Water Trails			
Mississippi River	MDNR-designated state water trail that provides opportunities for canoeing, kayaking, boating, fishing, wildlife observation, and other water-based recreation along the Mississippi River. The trail is part of Minnesota's state water trail system and provides public access to one of the state's most significant recreational waterways. [i]	1 crossing of Proposed Route	Proposed Right-of-Way crosses for 2.3 miles
Reno Bottoms Canoe Trail	Public canoe and kayak trail located within the USFWS Upper Mississippi River NWFR. The trail provides opportunities for paddling, wildlife observation, fishing, and nature-based recreation through the backwater habitats, wetlands, and floodplain forests of the Mississippi River corridor. [i]	1 crossing of Proposed Route	1 crossing of Proposed Right-of-Way
Q-9			
Snowmobile Trails			
Gopherland Snowmobile Trail System	Public Grant-in-Aid snowmobile trail network maintained through the MDNR Grant-in-Aid program. The trail provides winter recreation opportunities in southeastern Minnesota and is part of the broader regional snowmobile trail network connecting communities and recreational areas. [h]	Crossed by Proposed Route	Parallels approximately 0.6 miles of Proposed Right-of-Way

TABLE 6.4.6-1

Recreational Areas and Managed Lands within the Project Area [a]

Resource Name	Description/Ownership	Proximity to Proposed Route	Proximity to Proposed Right-of-Way
[a]	Gray shading indicates crossed by Proposed Right-of-Way.		
[b]	MDNR. 2026. Scientific and Natural Areas. Available online at: https://www.dnr.state.mn.us/snas/index.html. Accessed July 2026.		
[c]	MDNR. 2026. Stateland Interest Easements. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/plan_stateland_dnr/FeatureServer/7. Accessed July 2026.		
[d]	Steeplechase. 2026. Steeplechase Event Center. Available online at: https://www.steeplechaseevents.com/. Accessed July 2026.		
[e]	Zumbro Falls. 2026. Zumbro Falls Golf Club. Available online at: https://zumbrofallsgolfclub.com/. Accessed July 2026.		
[f]	MDNR. 2016. *Mississippi Blufflands State Trail Master Plan*. Available online at: https://files.dnr.state.mn.us/input/mgmtplans/trails/mississippi-blufflands/mississippi-blufflands-plan-2016.pdf. Accessed July 2026.		
[g]	MDNR. 2026. State Trails Minnesota. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/trans_state_trails_minnesota/FeatureServer/0. Accessed July 2026.		
[h]	MDNR. 2026. Snowmobile Trails. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/trans_snowmobile_trails_mn/FeatureServer/0. Accessed July 2026.		
[i]	MDNR. 2026. Water Trails Minnesota. Available online at: https://enterprise.gisdata.mn.gov/aghost/rest/services/us_mn_state_dnr/trans_water_trails_minnesota/FeatureServer/0. Accessed July 2026.		
[j]	USFWS. 2026. Upper Mississippi River National Wildlife and Fish Refuge. Available online at: https://www.fws.gov/refuge/upper-mississippi-river. Accessed July 2026.		
[k]	MDNR. 2026. Lake Louise State Park. Available online at: https://www.dnr.state.mn.us/state_parks/park.html?id=spk00214#homepage. Accessed July 2026		
[l]	MDNR. 2026. Richard J. Dorer Memorial Hardwood Forest. Available online at: https://www.dnr.state.mn.us/state_forests/forest.html?id=sft00033#homepage. Accessed July 2026.		
[m]	MDNR. 2026. Wildlife Management Areas. Available online at: https://www.dnr.state.mn.us/wmas/index.html. Accessed July 2026.		
[n]	MDNR. 2026. Winnebago Creek AMA. Available online at: https://www.dnr.state.mn.us/amas/detail_report.html?id=AMA00178. Accessed July 2026.		
[o]	Olmsted County Board. 2021. Root River Park Master Plan. Available online at: https://www.olmstedcounty.gov/sites/default/files/2021-12/2021_RootRiverMasterPlan%20FINAL.pdf. Accessed October 2026.		
[p]	Maple Valley Golf and Country Club. Undated. Available online at: https://www.maplevalleygolf.com/. Accessed October 2026.		
Note:	AMA = Aquatic Management Area; kV = Kilovolt; MDNR = Minnesota Department of Natural Resources; NWFR = National Wildlife and Fish Refuge; RJD = Richard J. Dorer; SNA = Scientific and Natural Area; USFWS = United States Fish and Wildlife Services; WMA = Wildlife Management Area(s)		

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
Segment 1			
GD-PIT-00005	Barn	Agriculture/Subsistence, Animal Facility	Unevaluated
GD-PIT-00006	Farmhouse	Domestic, Single Dwelling	Unevaluated
GD-PIT-00007	St. Peter's Evangelical Lutheran Church	Religion, Religious Facility	Unevaluated
GD-PIT-00008	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
GD-PIT-00009	Farmhouse	Domestic, Single Dwelling	Unevaluated
GD-PIT-00010	Pine Island Township Hall	Government, City Hall	Unevaluated
GD-PIT-00011	George Baslington Farmhouse	Domestic, Single Dwelling	Listed
GD-PIT-00012	Barn	Agriculture/Subsistence, Animal Facility	Unevaluated
GD-PIT-00013	District School No. 18	Education, School	Unevaluated
GD-PIT-00014	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
GD-PIT-00015	Farmhouse	Domestic, Single Dwelling	Unevaluated
GD-PIT-00016	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
GD-PIT-00017	Farmhouse	Domestic, Single Dwelling	Unevaluated
GD-PIT-00020	District School No. 109	Education, School	Unevaluated
GD-PIT-00031	Dickinson Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
GD-PIT-00040	Bridge L0457	Transportation, Road-Related (Vehicular)	Unevaluated
GD-PIT-00041	Bridge L0458	Transportation, Road-Related (Vehicular)	Unevaluated
GD-PIT-00043	Bridge L0740	Transportation, Road-Related (Vehicular)	Unevaluated
GD-PIT-00044	Bridge L0745	Transportation, Road-Related (Vehicular)	Not Eligible
GD-PIT-00047	Farmstead	Agriculture/Subsistence, Farmstead	Not Eligible
GD-ROS-00012	Farmhouse	Domestic, Single Dwelling	Unevaluated
GD-ROS-00038	Bridge L0746	Transportation, Road-Related (Vehicular)	Unevaluated
OL-EYT-00001	Chicago and North Western Railway Bridge	Transportation, Road-Related (Vehicular)	Unevaluated
OL-EYT-00002	Chicago and North Western Stone Arch Railway Bridge	Transportation, Rail-Related	Unevaluated
OL-EYT-00003	Stone Arch Railway Bridge	Transportation, Rail-Related	Unevaluated
OL-EYT-00005	School	Education, School	Unevaluated
OL-EYT-00006	Stone Silo	Agriculture/Subsistence, Storage	Unevaluated
OL-EYT-00007	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
OL-EYT-00008	Bridge No. L6254	Transportation, Road-Related (Vehicular)	Unevaluated
OL-EYT-00010	Bridge 55814	Transportation, Road-Related (Vehicular)	Unevaluated
OL-EYT-00012	Marion Rest Area	Transportation, Road-Related (Vehicular)	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
OL-EYT-00014	Culvert 97659	Transportation, Road-Related (Vehicular)	Not Eligible
OL-EYT-00015	Bridge 4909	Transportation, Road-Related (Vehicular)	Unevaluated
OL-EYT-00018	Bridge 6033	Transportation, Road-Related (Vehicular)	Not Eligible
OL-EYT-00019	Bridge 8054	Transportation, Road-Related (Vehicular)	Not Eligible
OL-FRM-00001	School	Education, School	Unevaluated
OL-FRM-00006	Walter O'Groske Round Barn	Agriculture/Subsistence, Animal Facility	Unevaluated
OL-FRM-00012	School	Education, School	Unevaluated
OL-FRM-00013	House	Domestic, Single Dwelling	Unevaluated
OL-FRM-00019	Bridge No. L6274	Transportation, Road-Related (Vehicular)	Unevaluated
OL-FRM-00020	Benike Family Barn	Agriculture/Subsistence, Animal Facility	Listed
OL-FRM-00021	Culvert L9846	Transportation, Road-Related (Vehicular)	Not Eligible
OL-FRM-00024	Bridge 88728	Transportation, Road-Related (Vehicular)	Unevaluated
OL-FRM-00026	Edward Reinke House	Domestic, Single Dwelling	Not Eligible
OL-FRM-00027	Reinke Farmstead	Agriculture/Subsistence, Farmstead	Not Eligible
OL-HVH-00010	Culvert R0190	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00003	Marion Town Hall	Government, City Hall	Unevaluated
OL-MAR-00004	School	Education, School	Unevaluated
OL-MAR-00007	Church of Christ	Religion, Religious Facility	Unevaluated
OL-MAR-00008	House	Domestic, Single Dwelling	Unevaluated
OL-MAR-00010	Bridge 55023	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00011	Bridge 55809	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00012	Bridge 55810	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00013	Bridge 55017	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00018	Culvert L9964	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00023	Bridge 8184	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00024	Bridge 8185	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00025	Bridge 8186	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00026	Bridge 8187	Transportation, Road-Related (Vehicular)	Not Eligible
OL-ORT-00032	Cabin	Domestic, Single Dwelling	Unevaluated
OL-VIO-00004	Viola Cooperative Creamery	Agriculture/Subsistence, Processing	Listed
OL-VIO-00010	Great River Ridge State Trail Bridge R0452	Transportation, Road-Related (Vehicular)	Not Eligible
OL-VIO-00011	Plainview RR/W&StP RR/Chicago & Northwestern RR	Recreation and Culture, Outdoor Recreation	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
OL-VIO-00017	Great River Ridge State Trail Bridge (MnDOT R0450)	Transportation, Road-Related (Vehicular)	Unevaluated
OL-VIO-00018	Great River Ridge State Trail Bridge (MnDOT R0449)	Transportation, Road-Related (Vehicular)	Unevaluated
OL-VIO-00019	Great River Ridge State Trail Bridge (MnDOT R0448)	Transportation, Road-Related (Vehicular)	Unevaluated
OL-VIO-00020	Great River Ridge State Trail Bridge (MnDOT R0447)	Transportation, Road-Related (Vehicular)	Unevaluated
OL-VIO-00030	Culvert 93479	Transportation, Road-Related (Vehicular)	Not Eligible
OL-VIO-00032	Culvert 93914	Transportation, Road-Related (Vehicular)	Not Eligible
OL-VIO-00035	Culvert R0213	Transportation, Road-Related (Vehicular)	Not Eligible
OL-VIO-00036	Culvert R0253	Transportation, Road-Related (Vehicular)	Not Eligible
OL-VIO-00039	Bridge 88737	Transportation, Road-Related (Vehicular)	Unevaluated
OL-VIO-00040	Bridge 55J16	Transportation, Road-Related (Vehicular)	Unevaluated
WB-MZT-00002	District School No. 76	Education, School	Not Eligible
WB-MZT-00005	Indian Cave	Landscape, Natural Feature	Unevaluated
WB-MZT-00006	Bridge No. 6563	Transportation, Road-Related (Vehicular)	Unevaluated
WB-MZT-00009	Bridge 79508	Transportation, Road-Related (Vehicular)	Not Eligible
WB-MZT-00011	Bridge 79517	Transportation, Road-Related (Vehicular)	Not Eligible
WB-ZMT-00001	District School No. 49	Education, School	Unevaluated
WB-ZMT-00002	District School No. 33	Education, School	Unevaluated
WB-ZMT-00008	Bridge No. L1072	Transportation, Road-Related (Vehicular)	Unevaluated
XX-ROD-00016	Trunk Highway/U.S. Highway 14 (formerly Trunk Highway 7)	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00185	U.S. Trunk Highway 52	Transportation, Road-Related (Vehicular)	Not Eligible
XX-RRD-CGW006	Chicago Great Western Railway Company, Rochester to Zumbrota	Transportation, Rail-Related	Not Eligible
XX-RRD-CGW016	Winona and Southwestern Railway Company/Winona and Western Railway Company/Chicago Great Western Railway Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CNW049	Duplicate Number - See XX-RRD-CNW005	Transportation, Rail-Related	Unevaluated
XX-RRD-CNW027	Winona and St. Peter Railroad Company/Chicago and North Western Railway Company: Main Line	Transportation, Rail-Related	Not Eligible
XX-RRD-CNW028	Winona and St. Peter Railroad Company/Chicago and North Western Railway Company, Winona to Mankato	Transportation, Rail-Related	Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
XX-RRD-CNW045	Rochester and Northern Minnesota Railway Company/Winona and St. Peter Railroad Company/Chicago and North Western Railway Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CNW049	Duplicate Number - See XX-RRD-CNW005	Transportation, Rail-Related	Unevaluated
XX-RRD-CSP042	Minnesota Midland Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company	Transportation, Rail-Related	Not Eligible
Segment 2			
FL-BEV-00002	Schoolhouse	Education, School	Unevaluated
FL-BEV-00003	House	Domestic, Single Dwelling	Unevaluated
FL-BEV-00005	Forrester Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-BEV-00013	Bridge 23519	Transportation, Road-Related (Vehicular)	Not Eligible
FL-BEV-00014	Culvert 97179	Transportation, Road-Related (Vehicular)	Not Eligible
FL-BEV-00016	Culvert L5599	Transportation, Road-Related (Vehicular)	Not Eligible
FL-BRS-00011	Schoolhouse	Education, School	Unevaluated
FL-BRS-00012	Bristol Center Cemetery	Funerary, Mortuary	Unevaluated
FL-BRS-00013	District School No. 151	Education, School	Unevaluated
FL-BRS-00014	District School No. 60 (razed)	Education, School	Not Eligible
FL-BRS-00020	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-BRS-00021	General Store	Commerce/Trade, Department Store	Unevaluated
FL-BRS-00022	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-BRS-00030	Bridge No. L4861	Transportation, Road-Related (Vehicular)	Unevaluated
FL-BRS-00035	Bridge L9086	Transportation, Road-Related (Vehicular)	Unevaluated
FL-CHC-00063	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
FL-CHC-00066	Autobody Shop	Commerce/Trade, Specialty Store	Unevaluated
FL-CNT-00014	Schoolhouse	Education, School	Unevaluated
FL-CNT-00021	Bridge No. L4730	Transportation, Road-Related (Vehicular)	Unevaluated
FL-CNT-00024	Bridge L4736	Transportation, Road-Related (Vehicular)	Unevaluated
FL-CNT-00027	Culvert 97822	Transportation, Road-Related (Vehicular)	Not Eligible
FL-CNT-00029	Culvert L9841	Transportation, Road-Related (Vehicular)	Not Eligible
FL-CNT-00030	Culvert L9842	Transportation, Road-Related (Vehicular)	Not Eligible
FL-CNT-00031	Culvert L9881	Transportation, Road-Related (Vehicular)	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
FL-HRC-00001	Milwaukee Road Depot	Transportation, Rail-Related	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00002	Greenfield Lutheran Church	Religion, Religious Facility	Unevaluated
FL-HRC-00003	House	Domestic, Single Dwelling	Unevaluated
FL-HRC-00004	House	Domestic, Single Dwelling	Unevaluated
FL-HRC-00005	Building	Commerce/Trade, Specialty Store	Unevaluated
FL-HRC-00006	School Bus Shed	Domestic, Secondary Structure	Unevaluated
FL-HRC-00007	Auditorium-Gymnasium	Recreation and Culture, Auditorium	Unevaluated
FL-HRC-00008	McMichael Grain Elevator	Agriculture/Subsistence, Storage	Listed
FL-HRC-00009	House	Domestic, Single Dwelling	Unevaluated
FL-HRC-00010	Elevated Metal Water Tank	Industry/Processing/Extraction, Waterworks	Unevaluated
FL-HRC-00011	Harmony United Methodist Church	Religion, Religious Facility	Unevaluated
FL-HRC-00012	Commercial Buildings	Commerce/Trade, Specialty Store	Unevaluated
FL-HRC-00013	State Bank (Novak Chiropractic Office)	Commerce/Trade, Financial Institution	Eligible
FL-HRC-00014	Commercial Building	Commerce/Trade, Specialty Store	Eligible
FL-HRC-00015	Lyle & Eddie's Conoco	Commerce/Trade, Specialty Store	Not Eligible
FL-HRC-00017	House	Domestic, Single Dwelling	Unevaluated
FL-HRC-00018	Knudson House	Domestic, Single Dwelling	Not Eligible
FL-HRC-00019	Harmony Commercial Historic District	Historic District	Listed
FL-HRC-00020	Strahl Commercial Building	Commerce/Trade, Specialty Store	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00021	Davis Insurance Office	Commerce/Trade, Business	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00022	Nethercut Law Office	Commerce/Trade, Professional	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00023	Georgio's Restaurant	Commerce/Trade, Restaurant	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00024	South Park (Selvig Park)	Landscape, Park	Unevaluated
FL-HRC-00025	Greenfield Cemetery	Funerary, Cemetery	Unevaluated
FL-HRC-00027	Commercial Building	Commerce/Trade, Specialty Store	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00028	JEM Theatre	Recreation and Culture, Theater	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00029	Commercial Building	Commerce/Trade, Specialty Store	Eligible as part of the Harmony Commercial Historic District

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
FL-HRC-00030	T.T. and Ole T. Brokken Building (north portion)	Commerce/Trade, Specialty Store	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00031	Commercial Building	No Data	Eligible as part of the Harmony Commercial Historic District
FL-HRC-00032	House	Domestic, Single Dwelling	Eligible as part of the Harmony Commercial Historic District
FL-HRT-00004	Sunblad House	Domestic, Single Dwelling	Unevaluated
FL-HRT-00010	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-HRT-00011	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-HRT-00012	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-HRT-00013	School	Education, School	Unevaluated
FL-HRT-00017	Bridge L9076	Transportation, Road-Related (Vehicular)	Unevaluated
FL-HRT-00026	Bridge L4747	Transportation, Road-Related (Vehicular)	Not Eligible
FL-HRT-00027	Bridge L4793	Transportation, Road-Related (Vehicular)	Not Eligible
FL-MBC-00015	Mabel House Hotel	Domestic, Hotel	Unevaluated
FL-NWB-00007	Garness Trinity Evangelical Lutheran Church	Religion, Religious Facility	Unevaluated
FL-NWB-00010	Trygsted Homestead	Domestic, Single Dwelling	Unevaluated
FL-NWB-00012	Bridge 9940	Transportation, Road-Related (Vehicular)	Not Eligible
FL-NWB-00014	Bridge No. L4680	Transportation, Road-Related (Vehicular)	Unevaluated
FL-NWB-00016	Bridge 23518	Transportation, Road-Related (Vehicular)	Not Eligible
FL-NWB-00017	Culvert 93432	Transportation, Road-Related (Vehicular)	Not Eligible
FL-NWB-00022	Bridge 9939	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00002	Hanna Mining Company Iron Ore Site	Industry/Processing/Extraction, Extractive Facility	Unevaluated
FL-YRK-00007	House	Domestic, Single Dwelling	Unevaluated
FL-YRK-00008	House	Domestic, Single Dwelling	Unevaluated
FL-YRK-00010	Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
FL-YRK-00012	Bridge No. 9933	Transportation, Road-Related (Vehicular)	Unevaluated
FL-YRK-00014	Bridge No. L4904	Transportation, Road-Related (Vehicular)	Unevaluated
FL-YRK-00015	Bridge No. L4909	Transportation, Road-Related (Vehicular)	Unevaluated
FL-YRK-00016	Culvert 23J12	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00017	Culvert 23J13	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00019	Culvert 97890	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00020	Culvert L9822	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00021	Culvert L9878	Transportation, Road-Related (Vehicular)	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
FL-YRK-00023	Culvert R0305	Transportation, Road-Related (Vehicular)	Not Eligible
FL-YRK-00027	Bridge 88877	Transportation, Road-Related (Vehicular)	Not Eligible
HU-JEF-00008	Donahue Farm	Agriculture/Subsistence, Farmstead	Eligible
HU-JEF-00011	Culvert 91656	Transportation, Road-Related (Vehicular)	Not Eligible
HU-JEF-00013	Bridge 5873	Transportation, Road-Related (Vehicular)	Unevaluated
HU-SGC-00001	Grain Elevator	Agriculture/Subsistence, Storage	Unevaluated
HU-SGC-00002	Sawmill	Industry/Processing/Extraction, Manufacturing Facility	Unevaluated
HU-SGC-00003	Norwegian Ridge Cemetery	Funerary, Cemetery	Unevaluated
HU-SGC-00004	Creamery	Agriculture/Subsistence, Processing	Unevaluated
HU-SGC-00005	Herald Building	Commerce/Trade, Business	Unevaluated
HU-SGC-00006	City Hall & Fire Station	Government, City Hall	Unevaluated
HU-SGC-00007	Elevated Metal Water Tank	Industry/Processing/Extraction, Waterworks	Unevaluated
HU-SGC-00008	Store	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00009	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00010	School	Education, School	Unevaluated
HU-SGC-00011	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00012	Log House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00013	Liver or Blacksmith Shop	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00014	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00015	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00016	Commercial Buildings	Commerce/Trade, Specialty Store	Not Eligible
HU-SGC-00017	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00018	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00019	House	Domestic, Single Dwelling	Unevaluated
HU-SGC-00020	Church	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00021	Spring Grove Insurance Agency	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00022	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00023	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00024	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00025	Ballard House	Domestic, Single Dwelling	Listed
HU-SGC-00026	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
HU-SGC-00027	House	Domestic, Single Dwelling	Unevaluated

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
HU-SGC-00028	Calvary Evangelical Free Church	Religion, Religious Facility	Unevaluated
HU-SGC-00029	Grain Elevator	Agriculture/Subsistence, Storage	Unevaluated
HU-SGC-00030	Grain Elevator	Agriculture/Subsistence, Storage	Unevaluated
HU-SGC-00031	Ballard House Hotel	Domestic, Hotel	Unevaluated
HU-SGT-00002	Gilbert Nelson Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
HU-SGT-00003	Spring Grove Town Hall	Government, City Hall	Unevaluated
HU-WIN-00009	School	Education, School	Unevaluated
HU-WIN-00011	Bridge No. L3980	Transportation, Road-Related (Vehicular)	Unevaluated
HU-WIN-00016	Culvert 91483	Transportation, Road-Related (Vehicular)	Not Eligible
HU-WIN-00018	Culvert 91600	Transportation, Road-Related (Vehicular)	Not Eligible
HU-WLM-00003	Martin Danielson Round Barn	Agriculture/Subsistence, Animal Facility	Unevaluated
HU-WLM-00004	Wilmington New Evangelical Lutheran Church	Religion, Religious Facility	Unevaluated
HU-WLM-00007	School	Education, School	Unevaluated
HU-WLM-00008	Lorimer Ellestad Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
HU-WLM-00009	School	Education, School	Unevaluated
HU-WLM-00010	Bridge No. 0136	Transportation, Road-Related (Vehicular)	Unevaluated
HU-WLM-00012	Bridge No. L3984	Transportation, Road-Related (Vehicular)	Unevaluated
HU-WLM-00013	Bridge No. 6728	Transportation, Road-Related (Vehicular)	Unevaluated
HU-WLM-00014	Bridge 88425 (replaced by 28J48 in 2015)	Transportation, Road-Related (Vehicular)	Not Eligible
HU-WLM-00020	Bridge L3981	Transportation, Road-Related (Vehicular)	Unevaluated
HU-WLM-00021	Bridge L3983	Transportation, Road-Related (Vehicular)	Unevaluated
HU-XXX-00001	Lock & Dam No. 8	Government, Public Works	Eligible
MW-CLA-00004	Bridge 2537	Transportation, Road-Related (Vehicular)	Unevaluated
MW-CLA-00006	Culvert 91673	Transportation, Road-Related (Vehicular)	Not Eligible
MW-CLA-00008	Culvert 95347	Transportation, Road-Related (Vehicular)	Not Eligible
MW-CLA-00009	Culvert 97190	Transportation, Road-Related (Vehicular)	Not Eligible
MW-FRA-00001	Grand Meadow Depot	Transportation, Rail-Related	Unevaluated
MW-FRA-00007	Bridge No. 7051	Transportation, Road-Related (Vehicular)	Unevaluated
MW-FRA-00010	Bridge 50520	Transportation, Road-Related (Vehicular)	Unevaluated
MW-FRA-00014	Bridge 50525	Transportation, Road-Related (Vehicular)	Not Eligible
MW-FRA-00019	Bridge 50576	Transportation, Road-Related (Vehicular)	Not Eligible
MW-GMT-00002	Bridge 50541	Transportation, Road-Related (Vehicular)	Not Eligible
MW-GMT-00003	Bridge 50533	Transportation, Road-Related (Vehicular)	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
MW-GMT-00004	Bridge 50571	Transportation, Road-Related (Vehicular)	Not Eligible
MW-GRA-00001	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
MW-GRA-00002	Exchange State Bank	Commerce/Trade, Financial Institution	Listed
MW-GRA-00003	National Cafe	Commerce/Trade, Specialty Store	Unevaluated
MW-GRA-00005	Booth Post No. 130 - Grand Army of the Republic Hall	Social, Meeting Hall	Listed
MW-GRA-00006	Grand Meadow Post Office	Government, Post Office	Unevaluated
MW-GRA-00007	Masonic Hall ("Old Town Hall")	Social, Meeting Hall	Unevaluated
MW-GRA-00008	Grand Meadow City Hall	Government, City Hall	Unevaluated
MW-GRA-00009	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00010	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00011	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00012	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00013	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00014	House	Domestic, Single Dwelling	Unevaluated
MW-GRA-00018	Bridge 1722	Transportation, Road-Related (Vehicular)	Unevaluated
MW-LOD-00002	Bridge No. 5905	Transportation, Road-Related (Vehicular)	Unevaluated
MW-LOD-00004	Bridge L5045	Transportation, Road-Related (Vehicular)	Unevaluated
MW-LOD-00010	Culvert 95766	Transportation, Road-Related (Vehicular)	Not Eligible
MW-LOD-00013	Bridge 8508	Transportation, Road-Related (Vehicular)	Not Eligible
MW-LOD-00014	Bridge 8509	Transportation, Road-Related (Vehicular)	Unevaluated
MW-RCT-00008	Bridge L5099	Transportation, Road-Related (Vehicular)	Unevaluated
MW-TAO-00001	Boomtown Style Store	Commerce/Trade, Department Store	Unevaluated
MW-TAO-00002	Taopi Post Office	Government, Post Office	Unevaluated
MW-TAO-00003	Taopi Covenant Church	Religion, Religious Facility	Unevaluated
MW-TAO-00004	Millwaukee & St. Paul Railroad - Taopi Segment	Transportation, Rail Related	Eligible
MW-TAO-00005	Bridge 93079	Transportation, Road-Related (Vehicular)	Not Eligible
MW-TAO-00006	Bridge 8491	Transportation, Road-Related (Vehicular)	Unevaluated
OL-HFT-00005	Bridge No. L6181	Transportation, Road-Related (Vehicular)	Unevaluated
OL-HFT-00018	Bridge L6178	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00003	Marion Town Hall	Government, City Hall	Unevaluated
OL-MAR-00010	Bridge 55023	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00011	Bridge 55809	Transportation, Road-Related (Vehicular)	Unevaluated

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
OL-MAR-00012	Bridge 55810	Transportation, Road-Related (Vehicular)	Unevaluated
OL-MAR-00013	Bridge 55017	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00024	Bridge 8185	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00025	Bridge 8186	Transportation, Road-Related (Vehicular)	Not Eligible
OL-MAR-00026	Bridge 8187	Transportation, Road-Related (Vehicular)	Not Eligible
OL-PGT-00021	School	Education, School	Unevaluated
OL-PGT-00026	Fugle's (Matthew) Flour Mill	Industry/Processing/Extraction, Manufacturing Facility	Unevaluated, Listed on State Register of Historic Places
OL-PGT-00027	Service Station	Commerce/Trade, Specialty Store	Unevaluated
OL-PGT-00028	Commercial Building	Commerce/Trade, Specialty Store	Unevaluated
OL-PGT-00029	School	Education, School	Unevaluated
OL-PGT-00030	House	Domestic, Single Dwelling	Unevaluated
OL-PGT-00031	House	Domestic, Single Dwelling	Unevaluated
OL-PGT-00034	Farmhouse	Domestic, Single Dwelling	Unevaluated
OL-PGT-00036	Bridge 55803	Transportation, Road-Related (Vehicular)	Unevaluated
OL-PGT-00038	Bridge 55805	Transportation, Road-Related (Vehicular)	Unevaluated
OL-PGT-00041	Bridge 55518	Transportation, Road-Related (Vehicular)	Not Eligible
OL-PGT-00042	Bridge 55536	Transportation, Road-Related (Vehicular)	Not Eligible
OL-PGT-00044	Culvert 96520	Transportation, Road-Related (Vehicular)	Not Eligible
OL-PGT-00046	Elliot T. Leach Farmstead	Agriculture/Subsistence, Farmstead	Unevaluated
OL-SWC-00015	Water Tower	Industry/Processing/Extraction, Waterworks	Unevaluated
OL-SWC-00016	Farmers Elevator Company Complex	Agriculture/Subsistence, Storage	Unevaluated
OL-SWC-00017	Hormel Building	Agriculture/Subsistence, Processing	Unevaluated
OL-SWC-00038	St. John's Lutheran Church	Religion, Religious Facility	Not Eligible
XX-LIN-00003	Trunk Highway 16 (including Former Trunk Highway 9)	Transportation, Road-Related (Vehicular)	Not Eligible
XX-LIN-00013	Mississippi River Nine-Foot Navigation Channel	Water-Related	Eligible
XX-ROD-00022	Trunk Hwy 56	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00027	Trunk Highway 30	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00059	Trunk Highway 26	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00066	Trunk Highway 43	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00067	Trunk Highway 44	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00079	Trunk Highway 76	Transportation, Road-Related (Vehicular)	Not Eligible
XX-ROD-00185	US Trunk Highway 52	Transportation, Road-Related (Vehicular)	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
XX-RRD-00012	Superseded by XX-RRD-CSP029	Transportation, Rail-Related	Unevaluated
XX-RRD-CGW003	Winona and Western/Wisconsin Minnesota and Pacific Railroad Company/Chicago Great Western Railroad Company: Olmsted County segment	Transportation, Rail-Related	Not Eligible
XX-RRD-CGW011	Minnesota and North Western Railroad Company/Chicago St. Paul and Kansas City Railway Company/Chicago Great Western Railway Company, Main Line to Taopi	Transportation, Rail-Related	Not Eligible
XX-RRD-CGW016	Winona and Southwestern Railway Company/Winona and Western Railway Company/Chicago Great Western Railway Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CGW017	Winona and Western Railway Company/Chicago Great Western Railway Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP001	Southern Minnesota RR/Chicago Milwaukee St. Paul and Pacific Railroad Company - Lanesgoro to Ramsey	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP003	Duplicate Number - See XX-RRD-CSP029	Transportation, Rail-Related	Eligible
XX-RRD-CSP015	Chicago Dubuque and Minnesota Railroad Company/Chicago Clinton Dubuque and Minnesota Railroad Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP016	Chicago Clinton Dubuque and Minnesota Railroad Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company (not extant)	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP017	Milwaukee and St. Paul Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company: Iowa and Minnesota Division Main Line	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP024	McGregor Western Railway Company/Milwaukee and St. Paul Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company	Transportation, Rail-Related	Not Eligible
XX-RRD-CSP029	Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company: Southern Minnesota Division Main Line	Transportation, Rail-Related	Not Eligible

TABLE 6.7.2-2

Recorded Architectural Structures within 1 Mile of the Proposed Alignments

Historic Inventory Number [a]	Historic Name	Historic Use	NRHP Status
XX-RRD-CSP030	Southern Minnesota Railroad Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company: La Crescent to Winnebago	Transportation, Rail-Related	Not Eligible
Q-9			
HU-JEF-00007	Reno Spring Roadside Parking Area (wayside rest)	Transportation, Road-Related (Vehicular)	Not Eligible
HU-JEF-00010	Bridge No. 88407	Transportation, Road-Related (Vehicular)	Unevaluated
HU-JEF-00008	Donahue Farm	Agriculture/Subsistence, Farmstead	Eligible
XX-ROD-00059	Trunk Highway 26	Transportation, Road-Related (Vehicular)	Not Eligible
XX-RRD-CSP015	Chicago Dubuque and Minnesota Railroad Company/Chicago Clinton Dubuque and Minnesota Railroad Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company	Transportation, Rail-Related	Not Eligible

[a] Merjent, Inc. 2026. *Phase Ia Literature Review for the Gopher to Badger Link Project. Goodhue, Wabasha, Olmsted, Mower, Fillmore, and Houston Counties, Minnesota*. See **Appendix J**.

TABLE 6.11-1

Current and Reasonably Foreseeable Future Projects

Project Name	Project Type	Description	Location Relevant to Project	Timeline	Source
Project Skyway	Data Center	Ryan Companies US, Inc. is proposing an approximate 482-acre Technology Center General Light Industrial Area consisting of data center facilities, technology services, research and development facilities, and other similar uses. This may also include Light General Industrial Area consisting of printing, material testing, warehousing, and assembly of data processing equipment.	City of Pine Island, Goodhue County; south of Xcel Energy's North Rochester Substation	Construction Start: Fall 2025 Full Operation: 2035	City of Pine Island Project Skyway Site: https://pineislandmn.gov/index.asp?SEC=8DDF3A88-3207-4080-95CF-8A6E85C2C38C&DE=AB52F777-B22E-4951-A5E9-7C8AB368C397
North Rochester to Skyway HVTL Project	Electric Transmission	Xcel Energy is proposing to construct a new 1.2-mile double-circuit 345 kV HVTL from Xcel's existing North Rochester Substation to new substations located at the proposed Pine Island Industrial Planned Unit Development near the City of Pine Island in Goodhue County. This will also include an approximately 11-acre expansion of the existing North Rochester Substation.	City of Pine Island, Goodhue County; overlaps with Segment 1 of Proposed Route	Construction start May 2027 Operational December 2029	Commission Docket No. E002/TL-26-135
Mankato-Mississippi 345 kV Transmission Line Project	Electric Transmission	Xcel Energy will soon commence construction of the Mankato-Mississippi 345 kV Transmission Line Project that consists of a 130-mile 345 kV transmission line between the existing Wilmarth Substation in Mankato and the Mississippi River near Kellogg, Minnesota, and an approximately 20-mile, 161 kV transmission line between North Rochester Substation and an existing transmission line northeast of Rochester.	North Rochester east to Mississippi River; overlaps with Segment 1 of Proposed Route	Construction start 3rd quarter 2026 Operational 1st quarter 2030	Commission Docket Nos. E-002/CN-11-532 and E-002/TL-23-157
PowerOn Midwest Project	Electric Transmission	Great River Energy, ITC Midwest LLC and Xcel Energy are proposing a new 31-mile-long 765 kV transmission line near the Pleasant Valley Substation in Mower County, Minnesota to the North Rochester Substation in Goodhue County. In addition, a new 69-mile-long 345 kV circuit would also be installed between the Pleasant Valley Substation and the North Rochester Substation and 31 miles of 345 kV transmission line would also be installed from the North Rochester Substation to the	The modifications proposed at the North Rochester Substation as part of the PowerOn Midwest Project would allow for the 765 kV interconnection for this Project.	Construction start 4th quarter 2029 Operational 3rd quarter 2032 (345 kV portion) and 2nd quarter 2034 (765 kV portion)	Commission Docket No. E002, ET2, ET6675/CN-25-117

TABLE 6.11-1

Current and Reasonably Foreseeable Future Projects

Project Name	Project Type	Description	Location Relevant to Project	Timeline	Source
		Hampton Substation in Dakota County, Minnesota. This project also includes modifications at the North Rochester Substation.			
Beaver Creek Transmission Line	Electric Transmission	Dairyland has proposed a new 3.5-mile-long 161 kV transmission line from its existing Q-8 transmission line along 171st Avenue in York Township, Fillmore County.	Segment 2 of the Proposed Route crosses this project at 171st Avenue	Construction start 2nd quarter 2027	Commission Docket No. E002/CN-24-95
Rose Creek Wind Project	Wind Energy Facility	ConEdison Development is planning to repower an existing wind energy facility in Mower County, Minnesota. The proposed Repower Project will involve decommissioning the 11 Rose Wind turbines and constructing 6 to 7 new turbines with greater power outputs to continue to deliver up to 17.4 MW of electricity to Dairyland.	Lodi and Adams Townships in Mower County; the project area intersects with the southwestern portion of the Proposed Route near the Adams Substation	Construction start in Fall 2027	Commission Docket No. WS-21-643
Dodge County Wind Project and 161 kV Gen-Tie Line	Wind Energy Facility and Electric Transmission	Dodge County, LLC (subsidiary of NextEra Energy Resources, Inc.) is proposing an up to 259 MW wind generating facility and approximately 27 miles of 161 kV transmission lines that would interconnect at the existing Pleasant Valley Substation owned by Great River Energy.	The wind facilities is located approximately 23 miles west of the Project; the 161 kV gen-tie line crosses into Mower County approximately 7 miles west of the Proposed Route	Construction start early 2027 Operational late 2027	Commission Docket Nos. CN-20-866, WS-20-866, and TL-20-867
Lemon Hill Solar, LLC	Solar Energy Facility	Lemon Hill Solar, LLC is proposing to construct and operate an up to 180 MW solar farm in Olmsted County, Minnesota. The project will connect to the electric transmission grid through Dairyland's switchyard via a new project substation with a step-up transformer and short (less than 1,500 feet) 161 kV transmission line.	Segment 1 of the Proposed Route intersects this project	Construction start 4th quarter 2026 Operational 4th quarter 2028	Commission Docket No. GS-25-126
Byron Solar Project	Solar Energy Facility	Byron Solar, LLC proposes to construct solar facilities and approximately 3 to 4 miles of 345 kV transmission lines to connect to the Southern Minnesota	The project is approximately 16 miles west of the Proposed Route	Construction start is pending	Commission Docket No. 20-763

TABLE 6.11-1

Current and Reasonably Foreseeable Future Projects

Project Name	Project Type	Description	Location Relevant to Project	Timeline	Source
		Municipal Power Agency-owned Byron Substation			
Crane Energy and Sandhill Energy Storage Projects	Battery Storage	Crane Energy Storage LLC and Sandhill Energy Storage LLC propose to construct a BESS that will charge its batteries with energy from the electric transmission grid via the Minnesota Municipal Power Agency's Byron Substation, store that energy on site, and later deliver that energy back to the transmission grid through the Byron Substation.	Olmsted County, 15 miles west of Proposed Routes	Construction start 1st quarter 2027 Operational 2nd quarter 2028	Commission Docket Nos. ESS-24-406 / ESS-24-407
Snowshoe Energy Storage Project	Battery Storage	Snowshoe BESS, LLC (subsidiary of Spearmint Energy) proposes to construct and operate a BESS up to 150 MW AC with approximately 600 MW-hours of energy capacity on a 28-acre site that will connect to the Maple Leaf Substation owned and operated by Southern Minnesota Power Agency.	Kalmar Township, Olmsted County, approximately 12 miles west of Proposed Route	Construction start early 2027 Operational late 2027	Commission Docket No. ESS-24-279
Olmsted Aggregate Airport Quarry	Mining	Olmsted Aggregate is proposing to operate a new limestone aggregate quarry (Airport Quarry) in Olmsted County. The proposed quarry contains 39.22 acres in the City of Rochester and 97.33 acres in High Forest Township for a total of 136.55 acres. The current land use is an agricultural field and a golf course.	Approximately 4 miles west of the Proposed Route	Construction pending permits/re-zoning	EQB Interactive Database: https://webapp.pca.state.mn.us/eqb-search/project-detail/262956?siId=262956-PROJ0000000001
Hadley Valley Subdivision	Residential Development	The Hadley Valley residential housing development subdivision project will consist of 177 detached, single-family homes and 28 multi-family duplexes, for a total of 233 residential units. Dedicated parkland areas and stormwater treatment basins are expected to be located along the southern edge of the project area.	Intersection of 48th St NE and Hadley Valley Road NE in Haverhill Township, Olmsted County, approximately 3 miles west of Proposed Route	Construction start Summer/Fall 2026 through Fall 2029.	EQB Interactive Database: https://webapp.pca.state.mn.us/eqb-search/project-detail/266501?siId=266501-PROJ0000000001
Graham Acres	Residential Development	DR Horton is proposing the Graham Acres residential development on approximately 185.38 acres. The project will include 580 residential housing units, several internal roadways, stormwater features, and a park	Intersection of 60th Ave NW (County Road 44) and Valleyhigh Road NW (County Road 4) in Cascade Township,	Construction start in mid-2026 through 2029 Home building 2026 through 2032	EQB Interactive Database: https://webapp.pca.state.mn.us/eqb-search/project-detail/267281?siId=267281-PROJ0000000001

TABLE 6.11-1

Current and Reasonably Foreseeable Future Projects

Project Name	Project Type	Description	Location Relevant to Project	Timeline	Source
			Olmsted County; approximately 12 miles west of the Proposed Route		
MnDOT and Local Road Projects	Road Construction	MnDOT District 6, and counties and townships crossed by the Project are planning several road improvement projects through Project planning, construction and operations.	All counties and townships crossed	Ongoing	MnDOT District 6 project list: https://www.dot.state.mn.us/d6/projects.html https://www.dot.state.mn.us/d6/projects.html Goodhue County: https://goodhuecountymn.gov/public_works/projects/ Wabasha County: https://www.co.wabasha.mn.us/departments/highway_department/index.php Olmsted County: https://www.olmstedcounty.gov/residents/roads-transportation Fillmore County: https://www.co.fillmore.mn.us/departments/highway_department/highway_construction.php Houston County: https://www.co.houston.mn.us