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- Including specific conditions in individual easement agreements with landowners along the route (e.g., requiring new plantings or landscaping).
- Using the protections of Minnesota Statute 216E.12, subdivision 4 (commonly known as the "Buy the Farm" statute), where available, to move residents away from potential aesthetic impacts.

5.3.2 Property Values

Property values have the potential to be affected by the placement of nearby transmission lines. Prior research has found that potential impacts to property values due to transmission lines are generally connected to three main factors. First, how the transmission line affects the viewshed and aesthetics of a property. Second, the real or perceived risks that buyers have of EMF. Third, the effects to agricultural production on properties that are used for farming operations.

The aforementioned factors play one role in the many interconnecting factors that affect property values. Because of this, it is difficult to measure how much and all the different ways that transmission lines and property values are correlated. A variety of methodologies have been used to research the relationship between transmission lines and property values. Some general conclusions can be drawn from this body of literature. This chapter highlights relevant outcomes of property value research with additional detail provided in Appendix G.

Research does not support a clear cause-and-effect relationship between property values and proximity to transmission lines, but has revealed trends that are generally applicable to properties near transmission lines:

- When negative impacts on property values occur, the potential reduction in value can range between 1 and 30 percent, and varies based on factors such as land use, location of the power line, and the size of the power line~~is in the range of 1 to 10 percent~~.
- Property value impacts decrease with distance from the line; thus, impacts are usually greater on smaller properties than on larger ones.
- Negative impacts diminish over time.
- Other amenities, such as proximity to schools or jobs, lot size, square footage of the home, and neighborhood characteristics, tend to have a greater effect on sale price than the presence of a transmission line.
- The value of agricultural property decreases when transmission line structures interfere with farming operations.
- The value of woodland property may decrease when transmission line structures interfere with forestry operations.

5.3.2.1 Potential Impacts and Mitigation Measures

Property value impacts could be mitigated by minimizing aesthetic impacts, perceived EMF health risks, and agricultural impacts. This can be achieved by selecting alignments that maximize the use of existing ROW and that place the transmission line away from residences and out of agricultural fields. There is potential for impacts to be mitigated by including specific conditions in individual landowner easement

agreements along the transmission line. Impacts could also be mitigated by using the protections offered through Minnesota Statute 216E.12 (commonly known as the “Buy the Farm” statute), where available, to move away from potential property value impacts.

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- Removal of invasive species/noxious weeds via herbicide and manual means consistent with easement conditions and landowner restrictions.
- Cleaning and inspecting construction vehicles to remove dirt, mud, plant, and debris from vehicles prior to arriving at and leaving construction sites.

Vegetation impacts can also be mitigated by providing compensation to individual landowners through negotiated easement agreements. Mitigation and restoration measures for impacts to vegetation are standard Commission route permit conditions (**Error! Reference source not found.**).

5.10.5 Wildlife

The project's landscape provides habitat for a variety of resident and migratory wildlife species, such as large and small mammals, songbirds, waterfowl, raptors, fish, amphibians, reptiles, and insects. These species use the area for forage, shelter, breeding, overwintering, and/or as a stopover during migration. Habitat diversity characterizes the area, from densely forested regions in the north to predominantly agricultural landscapes in the south.

The state of Minnesota is in the Central Flyway of North America. The Central Flyway is a bird migration route that encompasses the Great Plains of the U.S. and Canada. Migratory birds use portions of the Central Flyway as resting grounds during spring and fall migration, as well as breeding and nesting grounds throughout the summer. Suitable habitat for migratory birds is present throughout the project's landscapes.

Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (16 USC 703-712), which prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. Bald eagles (*Haliaeetus leucocephalaus*) and golden eagles (*Aquila chrysaetos)* are protected under the MBTA and the federal Bald and Golden Eagle Protection Act (BGEPA; 16 USC 668-668d), which specifically prohibits the taking or possession of and commerce in, either alive or dead, or any part, nest, or egg of these eagles.

Several lands preserved or managed for wildlife and associated habitat are scattered throughout the geographic area; some of these areas are crossed by the project's ROI for wildlife (the 150-foot ROW), including DNR WMAs, lakes that are part of DNR Shallow Lakes Program, and USFWS Grassland Bird Conservation Areas (GBCA) (**Error! Reference source not found.**).

The DNR established WMAs to protect lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses (reference (92)). The DNR Shallow Lakes Program works to protect and enhance wildlife habitat on larger lakes (greater than 50 acres in size) that are dominated by shallow water (littoral zone) (reference (93)). The USFWS designates GBCAs as priority areas for grassland protection and enhancement that are thought to provide suitable habitat for many or all priority grassland bird species in tall grass prairie.

Additional lands managed or preserved for wildlife are scattered through the area but are not within the project's ROI, including USFWS National Wildlife Refuges, USFWS Waterfowl Production Areas, DNR State Game Refuges, DNR AMAs, and National Audubon Society Important Bird Areas. These lands are shown in **Error! Reference source not found.** but are not discussed further in this EA. The applicants' route permit application stated that the Wolvert AMA lies within the applicants' proposed route's ROW. However, recent data from the Minnesota DNR website and the latest spatial data downloaded in March 2024 from Minnesota Geospatial Commons do not list this AMA or any others within the project's Region

of Influence (ROI) for wildlife (reference (94)). Following publication of this EA in June 2024 and in receipt of public comments in July and August 2024 as well as subsequent coordination with the Minnesota DNR, the Wolvert AMA is confirmed to be located within the applicants' proposed route's ROW, as well as alignment alternative AA14. State forests and state parks also provide habitat for a variety of wildlife; these resources are discussed in Chapter **Error! Reference source not found.**. In addition, there are several sensitive ecological resources, such as native plant communities, which would also provide habitat for wildlife; these resources are discussed in Chapter **Error! Reference source not found.**.

5.10.5.1 Potential Impacts and Mitigation Measures – Non-Avian Species

Construction activities that generate noise, dust, or disturbance of habitat may result in short-term, indirect impacts on wildlife. During project construction, wildlife would generally be displaced within the 150-foot ROW and footprints of associated facilities. Clearing and grading activities could also affect birds' eggs or nestlings and small mammals that may be unable to avoid equipment. Many wildlife species would likely avoid the immediate area during construction; the distance that animals would be displaced depends on the species and the tolerance level of each animal. However, comparable habitat is available adjacent to the project.

Project construction may result in long-term adverse impacts on wildlife due to loss, conversion, or fragmentation of habitat. The applicants would permanently clear forested vegetation within the ROW and footprints of associated facilities. Wildlife species previously occupying forested communities in these areas would be displaced in favor of species that prefer more open vegetation communities. Fragmentation could affect the survival of some species that depend on large areas of undisturbed habitat. Impacts are expected to be minimal in situations where an existing ROW is expanded because fragmented forest would already be present.

The potential long-term project impacts to wildlife are anticipated to be minimal. Potential wildlife impacts can be mitigated or minimized through several strategies. The primary impact mitigation strategy is to select route alternatives away from areas known to contain high-quality habitat or which serve as migratory corridors. Use of existing rights-of-way can minimize habitat loss and fragmentation. Wildlife impacts can also be minimized by spanning habitats and minimizing the number of structures in high-quality habitat through the use of specialty structures.

5.10.5.2 Potential Impacts and Mitigation Measures – Avian Species

Potential impacts to avian species (e.g., songbirds, raptors, and waterfowl) include those described above for non-avian species, but also include impacts due to electrocution and collision with transmission line conductors. Electrocution occurs when an arc is created by contact between a bird and energized lines or an energized line and grounded structure equipment. Electrocution occurs more frequently with larger bird species, such as hawks, because they have wider wingspans that are more likely to create contact with the conductors. To avoid and minimize potential electrocution of avian species, the project would be constructed in accordance with the Avian Power Line Interaction Committee's (APLIC) safety recommendations (reference (95)). These recommendations minimize electrocution risk by providing adequate clearance from energized conductors to grounded surfaces and to other conductors.

Independent of the electrocution risk, birds may be injured by colliding with transmission line structures and conductors. The collision risk is influenced by several factors including habitat, flyways, foraging areas, and bird size. Waterfowl, especially larger waterfowl such as swans and geese, are more likely to collide with transmission lines. The collision frequency increases when a transmission line is placed between agricultural fields that serve as feeding areas and wetlands or open water, which serve as

construction and operation of alignment alternative AA14 and the applicants' equivalent. Chapter **Error! Reference source not found.** provides a comparison of the potential impacts resulting from construction and operation of alignment alternative AA17 and the applicants' equivalent.

1.1.1 Applicants' Proposed Route – Long Lake Region

Potential impacts of the applicants' proposed route in the Long Lake region are summarized in Table **Error! No text of specified style in document.**-1**Error! Reference source not found.** and discussed in Chapters 1.1.1.1 through 0.

Table Error! No text of specified style in document.**-1 Human and Environmental Impacts – Applicants' Proposed Route, Long Lake Region**

Resource	Element	Applicants' Proposed Route
Length (miles)		14.3
Human Settlement	Residences within 0-75 feet (count)	0
	Residences within 75-250 feet (count)	3
	Residences within 250-500 feet (count)	4
	Residences within 500–1,000 feet (count)	22
Land-Based Economies	Agricultural land in 150-foot ROW	52
Water Resources	Total wetlands in 150-foot ROW (acres)	104
	Forested wetlands in 150-foot ROW (acres)	7
Vegetation	Forested landcover in 150-foot ROW (acres)	126
Wildlife	Grassland Bird Conservation Area in 150-foot ROW (acres)	84
	Aquatic Management Areas in 150-foot ROW (acres)	1
Rare and Unique Natural Resources	Sites of Biodiversity Significance in 150-foot ROW (acres)	114
	Federal- or state-protected species documented in 150-foot ROW (count)	0
ROW Sharing and Paralleling	Transmission line (miles, percent)	7.4 (52)
	Roadway (miles, percent)	0 (0)
	Field, parcel, or section lines (miles, percent)	8.9 (62)
	Total ROW sharing and paralleling (miles, percent)	13.7 (96)
Estimated Cost	Total estimated cost (2022 dollars in millions)	$70.6

1.1.1.1 Human Settlements

As discussed in Chapter **Error! Reference source not found.**, potential human settlement impacts were assessed by looking at several human settlement evaluation elements: aesthetics, displacement, noise, property values, zoning and land-use compatibility, electronic interference, and cultural values. Proximity to homes, schools, and other

6.4.1.4.2 Vegetation

Vegetation impacts were evaluated by examining vegetative landcover within the 150-foot ROW (Chapter **Error! Reference source not found.**). **Error! Reference source not found.** provides an overview of vegetative cover in the Long Lake region, and Table **Error! No text of specified style in document.**-2 summarizes the landcover types within the ROW of the applicants' proposed route within this region. The dominant vegetative landcover in the ROW of the applicants' proposed route in this region consists of forest, which represents approximately 48 percent of the ROW. Forest types include forested wetlands and upland deciduous, coniferous, and mixed forest communities.

Table Error! No text of specified style in document.**-2 Landcover Types in the 150-foot ROW of the Applicants' Proposed Route in the Long Lake Region**

Landcover Type	Acres in ROW	Percent of ROW[1]
Forested (upland and wetland)	126	48
Herbaceous (upland and wetland)	75	29
Agricultural (cultivated crops and hay/pasture)	52	20
Developed (low-high intensity; open space)	4	1
Shrub/Scrub	3	1
Open Water	<1	<1

Source: reference (110).
1 Totals may not sum to 100 percent due to rounding.

As discussed in Chapter **Error! Reference source not found.**, the applicants would clear forested vegetation from the ROW during construction, and the ROW would be maintained with low-growing vegetation to minimize potential interference with the transmission line. Approximately 52 percent of the applicants' proposed route in the Long Lake region would parallel an existing transmission line ROW where the forested areas have already been fragmented, thereby minimizing new impacts to forest vegetation in these areas.

6.4.1.4.3 Wildlife

Impacts to wildlife are primarily assessed by evaluating the presence of wildlife habitat, including areas that are preserved or managed for wildlife habitat, within the ROW. The applicants' proposed route in the Long Lake region would parallel an existing transmission line ROW for approximately 52 percent of its length. In these areas, the ROW of the applicants' proposed route would be placed adjacent to an area where wildlife habitat has been previously disturbed, thereby minimizing potential impacts associated with habitat fragmentation. In areas where the applicants' proposed route does not parallel an existing transmission line ROW, impacts to wildlife habitat could occur from conversion, fragmentation, or placement of structures. In addition, there would be increased potential for impacts to avian species in areas where the applicants' proposed route does not parallel an existing transmission line ROW.

The applicants' proposed route would traverse approximately 84 acres of USFWS GBCA (**Error! Reference source not found.**). While the majority of these GBCA would be traversed by paralleling an existing transmission line ROW, the ROW of the applicants' proposed route would require the establishment of new transmission line ROW through approximately 19 acres of GBCA. The applicants' proposed route would also traverse approximately 1 acre of the Wolvert AMA. This would result in fragmentation of wildlife habitat within these areas, as well as create an increased potential for impacts to

avian species in this area. However, as discussed in Chapter 0, avian impacts can be minimized through use of bird flight diverters.

Potential construction and operation-related impacts to wildlife are summarized in Chapter 0. Several measures could be implemented to avoid, minimize, or mitigate impacts to wildlife, as described in Chapter 0.

6.4.1.5 Rare and Unique Natural Resources

Impacts to rare and unique natural resources are primarily assessed by evaluating the presence of federal- and state-protected species within a 1-mile radius of the anticipated alignments and the presence of sensitive ecological resources within the 150-foot ROW (Chapter 5.10). **Error! Reference source not found.** provides an overview of sensitive ecological resources within the Long Lake region; in order to protect federally and state protected species from exploitation or destruction, documented locations of these species are not identified on any maps.

6.4.1.5.1 Protected Species

Using the NHIS database, it was determined that no federal- or state-protected species or state special concern species have been documented within 1 mile of the applicants' proposed route in the Long Lake region. Formal surveys for protected species have not been conducted for the project; as such, it is possible that protected species could be present where suitable habitat is available within the ROW. Potential impacts to protected species could occur should they be present within or near the ROW. While more mobile species would leave the area for nearby comparable habitats, non-mobile organisms, such as vascular plants or nesting birds, could be directly impacted.

Potential construction and operation-related impacts to protected species are summarized in Chapter **Error! Reference source not found.**. Several measures could be implemented to avoid, minimize, or mitigate impacts to protected species, as described in Chapter **Error! Reference source not found.**. In addition, the applicants may be required to conduct field surveys for protected species in coordination with the USFWS and/or DNR prior to construction.

6.4.1.5.2 Sensitive Ecological Resources

The ROW of the applicants' proposed route in the Long Lake region would traverse approximately 114 acres of SBS ranked high, approximately 20 acres of which would traverse the SBS while paralleling an existing transmission line ROW (**Error! Reference source not found.**). As such, new impacts to approximately 94 acres SBS would occur as a result of establishing a new transmission line ROW through the SBS. In addition, because the SBS is too large to span, transmission line structures would need to be placed within it.

Potential construction and operation-related impacts to sensitive ecological resources are summarized in Chapter **Error! Reference source not found.** and **Error! Reference source not found.**. Several measures could be implemented to avoid, minimize, or mitigate impacts to sensitive ecological resources, as described in Chapter **Error! Reference source not found.**. In addition, the applicants may be required to conduct field surveys in coordination with the USFWS and/or DNR for the potential presence of protected species within sensitive ecological resources that cannot be avoided.

6.4.2 Route Alternatives H1 through H7 – Long Lake Region

Route alternatives H1 through H7 provide different options to the applicants' proposed route in the northern half of the Long Lake region. Route alternatives H1 and H2 are shifted from the applicants' proposed route to avoid impacts to ~~an~~ Wolvert AMA (Map 6-20).~~; however, as noted in Chapter 5.10.5,~~

~~recent data from the DNR website and the latest spatial data downloaded in March 2024 from Minnesota Geospatial Commons do not list any AMA's within the ROW of the applicants' proposed route.~~

Table Error! No text of specified style in document.**-3 Human and Environmental Impacts – Route Alternatives H1 through H7, Long Lake Region**

Resource	Element	Route Alternative H1	Route Alternative H2	Route Alternative H3	Route Alternative H4	Route Alternative H5	Route Alternative H6	Route Alternative H7	Applicants' Equivalent
Length (miles)		6.5	9.0	7.2	6.0	6.5	6.6	6.6	6.8
Human Settlement	Residences within 0-75 feet (count)	0	1	0	0	0	0	0	0
	Residences within 75-250 feet (count)	4	10	1	1	2	3	1	1
	Residences within 250-500 feet (count)	7	19	1	0	1	1	0	0
	Residences within 500–1,000 feet (count)	25	17	11	12	11	12	8	10
Land-Based Economies	Agricultural land in 150-foot ROW	26	59	16	14	14	15	4	14
Water Resources	Total wetlands in 150-foot ROW (acres)	25	31	54	42	48	38	65	47
	Forested wetlands in 150-foot ROW (acres)	<1	1	11	3	3	3	13	5
Vegetation	Forested landcover in 150-foot ROW (acres)	65	70	80	67	66	74	75	77
Wildlife	Grassland Bird Conservation Area in 150-foot ROW (acres)	26	35	26	31	30	30	18	26
	Aquatic Management Areas in 150-foot ROW (acres)	0	0	0	0	0	0	0	1

Table Error! No text of specified style in document.**-4 Human and Environmental Impacts – Alignment Alternative AA14, Long Lake Region**

Resource	Element	Alignment Alternative AA14	Applicants' Equivalent
Length (miles)		0.6	0.6
Human Settlement	Residences within 0-75 feet (count)	0	0
	Residences within 75-250 feet (count)	0	0
	Residences within 250-500 feet (count)	1	0
	Residences within 500–1,000 feet (count)	1	2
Land-Based Economies	Agricultural land in 150-foot ROW	0	0
Water Resources	Total wetlands in 150-foot ROW (acres)	3	4
	Forested wetlands in 150-foot ROW (acres)	1	3
Vegetation	Forested landcover in 150-foot ROW (acres)	11	11
Wildlife	Aquatic Management Areas in 150-foot ROW (acres)	2	1
Rare and Unique Natural Resources	Sites of Biodiversity Significance in 150-foot ROW (acres)	4	5
	Federal- or state-protected species documented in 150-foot ROW (count)	0	0
ROW Sharing and Paralleling	Transmission line (miles, percent)	0 (0)	0 (0)
	Roadway (miles, percent)	0 (0)	0 (0)
	Field, parcel, or section lines (miles, percent)	0.2 (42)	0 (0)
	Total ROW sharing and paralleling (miles, percent)	0.2 (42)	0 (0)
Reliability	Crossing of existing transmission lines (count)	0	0
Estimated Cost	Total estimated cost (2022 dollars in millions)	$2.9	$2.7

6.4.6.1 Human Settlements

Potential project impacts on human settlements are assessed through an evaluation of several elements. For some of the human settlement elements, project impacts are anticipated to be minimal and independent of the route selected and therefore are not discussed in this Chapter. These resources include cultural values, displacement, electronic interference, noise, property values, socioeconomics and EJCs, and zoning and land use.

6.4.6.1.1 Aesthetics

Aesthetic impacts differ by route alternative. Aesthetic impacts can be minimized by placing the transmission line away from residences and by following existing infrastructure and ROW. Proximity of

6.4.6.3 Archaeological and Historic Resources

There are no documented archaeological or historic architectural resources within the 1,000-foot route width of alignment alternative AA14 or the applicants' equivalent. As a result, impacts to cultural resources are anticipated to be minimal and independent of the route selected.

6.4.6.4 Natural Environment

6.4.6.4.1 Water Resources

Impacts to floodplains and groundwater are anticipated to be minimal and independent of the route selected for the project. This routing alternative comparison discussion addresses watercourses and waterbodies and wetlands. **Error! Reference source not found.** shows the water resources along alignment alternative AA14 and the applicants' equivalent.

6.4.6.4.1.1 Watercourses and Waterbodies

Alignment Alternative AA14 and the applicants' equivalent would both cross the Nokasippi River, a PWI stream. The stream crossing would be less than 1,000 long and could be spanned.

6.4.6.4.1.2 Wetlands

Error! Reference source not found. identifies the acreage of wetlands crossed by alignment alternative AA14 (3 acres) and the applicants' equivalent (4 acres). Alignment alternative AA14 would cross less forested and non-forested wetlands than the applicants' equivalent. In addition, alignment alternative AA14 would be able to span wetlands, but the applicants' equivalent would have one wetland crossings over 1,000 feet, which would require replacement of one or more structures in wetland.

6.4.6.4.2 Vegetation

Alignment alternative AA14 and the applicants' equivalent would each impact approximately 11 acres of forested vegetation. Both alternatives would fragment forested areas, and neither alignment would parallel an existing transmission line or road corridor.

6.4.6.4.3 Wildlife

Alignment alternative AA14 and the applicants' equivalent would have similar impacts on wildlife habitat and fragmentation, as they would remove the same amount of forested habitat and neither alignment would parallel existing transmission line or road rights-of-way. However, alignment alternative would traverse approximately two acres of the Wolvert AMA, while the applicants' equivalent would traverse one acre of the Wolvert AMA.~~Neither alternative would traverse any areas that are preserved or managed for wildlife habitat.~~

6.4.6.5 Rare and Unique Natural Resources

Using the NHIS database, it was determined that no federal- or state-protected species, or state species of special concern, have been documented within 1 mile of alignment alternative AA14 or the applicants' equivalent. The ROW of alignment alternative AA14 and the applicants' equivalent would intersect similar amounts of an SBS ranked moderate, with AA14 intersecting slightly less (4 acres) than the applicants' equivalent (5 acres) (**Error! Reference source not found.**). Both alignment alternatives would require establishing a new ROW through the SBS.