

## 6.5 Alignment Modifications

Minor adjustments to the proposed anticipated alignment within a given route or route alternative (i.e., alignment modifications), were proposed during the scoping period as described in Section 4.3. The purpose for each alignment modification is to avoid a specific issue raised by the commenters (e.g., sensitive lands, houses, following existing corridors). In the sections that follow, only the issues that differ between the proposed route and the alignment modification are described. Specific alignment modifications may be incorporated in the MN PUC Route Permit as a special condition should the MN PUC find they are warranted. Details for all the alignment modifications are provided in Appendix E.

### 6.5.1 West Section

There are no alignment modifications identified in the West Section.

### 6.5.2 Central Section

There are four alignment modifications proposed for the Central Section: Silver Creek WMA, Airstrip, Mizpah, and Gravel Pit (Map 4-8). These alignment modifications are described below in sections 6.5.2.1 through 6.5.2.4.

#### 6.5.2.1 Silver Creek WMA Alignment Modification

The Silver Creek WMA Alignment Modification is located in the north-central portion of the Pine Island Variation Area (Map 4-9). The alignment modification is the same length as the comparable segment of the Proposed Blue Route (Table 4-4, Map 6-66). The Proposed Blue Route follows the south side of the existing 230 kV transmission line, which parallels the southern edge of the USFWS lands and the Silver Creek WMA. Land ownership includes private, state forest, and federal lands.

The Silver Creek WMA Alignment Modification shifts the anticipated alignment approximately 150 feet south onto state forest land and avoids impacts to federal land and the Silver Creek WMA. The alignment modification does not parallel an existing corridor like the Proposed Blue Route so would require creation of new corridor for its entire length (Map 6-66). Because of this, the alignment modification would result in more fragmentation of intact state forest.

#### 6.5.2.2 Airstrip Alignment Modification

The Airstrip Alignment Modification is located in the east portion of the C2 Segment Option Variation Area (Map 4-12). This alignment modification is the same length as the comparable segment of the Proposed C2 Segment Option Route (Table 4-4, Map 6-67). The Proposed C2 Segment Option Route follows the west side of the existing 230 kV transmission line for over half of its length. Land ownership includes private, corporate, county-administered state, and state trust lands.

The Airstrip Alignment Modification shifts the anticipated alignment approximately 725 feet west to avoid impacts to the private airstrip located east of the existing 230 kV transmission line. The height of the proposed transmission line would be taller than the existing 230 kV transmission line and located northwest of the north end of the airstrip, so use of the airstrip may be affected since it has a northwest/southeast orientation. This alignment modification would be located approximately 1,000 feet west of the existing 230 kV transmission line so would provide additional distance for use of the airstrip (Map 6-67). Land ownership remains the same mix of private and state lands as described for the Proposed C2 Segment Option Route.

#### 6.5.2.3 Mizpah Alignment Modification

The Mizpah Alignment Modification is located in the northwest portion of the J2 Segment Option Variation Area (Map 4-13). This alignment modification is the same length as the comparable segment of the Proposed Orange Route (Table 4-4, Map 6-68). Land ownership includes both private, county-administered state, and state forest lands.

The Mizpah Alignment Modification shifts the anticipated alignment north from a mix of private and state lands onto only state lands. Both the Proposed Orange Route and this alignment modification would require creation of new corridor for their entire length (Map 6-68). Because of this, both options would result in fragmentation of intact forest.

#### 6.5.2.4 Gravel Pit Alignment Modification

The Gravel Pit Alignment Modification is located in the southeast portion of the J2 Variation Area (Map 4-13). This alignment modification is the same length as the comparable segment of the Proposed Orange Route (Table 4-4, Map 6-69). The Proposed Orange Route includes an existing private gravel pit and the existing Effie dump (MPCA State Assessment Site SA7836) within 100 feet of the west edge of the ROW (Map 6-69). Land ownership includes private,

corporate, county-administered state, and state fee lands.

The Gravel Pit Alignment Modification shifts the anticipated alignment approximately 750 feet east to avoid impacts to the private gravel pit and no privately-owned land would be located within the ROW. In addition, the Effie dump would be located more than 100 feet west and outside of the ROW (Map 6-69). Land ownership includes corporate, county-administered state, and state fee lands.

### 6.5.3 East Section

There are five alignment modifications proposed for the East Section: Bass Lake, Wilson Lake, Grass Lake, Dead Man's Pond, and Trout Lake (Map 4-14). These alignment modifications are described below in Section 6.5.3.1 through Section 6.5.3.5

#### 6.5.3.1 Bass Lake Alignment Modification

The Bass Lake Alignment Modification is located in the central portion of the Effie Variation Area (Map 4-15). This alignment modification is slightly longer (0.1 mile) than the comparable segment of the Proposed Blue/Orange Route (Table 4-5, Map 6-70). The Larson Lake State Forest Campground (George Washington State Forest) is located south of the Proposed Blue/Orange Route on the west side of Larson Lake. The Bass Lake County Park and Campground (managed by the Itasca County Land Department Park System, Grand Rapids, Minnesota) is located to the north of the Proposed Blue/Orange Route and surrounds Bass Lake. The Proposed Blue/Orange Route crosses lands designated as Outstanding Rank for the Preliminary MBS Sites of Biodiversity Significance (for more details, see Section 6.4.1). Land ownership includes corporate and state forest lands.

The Bass Lake Alignment Modification shifts the anticipated alignment approximately 750 feet southwest and away from the Bass Lake Itasca County Park (which includes a campground); however, it shifts the alignment closer to the Larson Lake State Forest campground (Map 6-70). This alignment modification crosses lands designated as Outstanding Rank for the Preliminary MBS Sites of Biodiversity Significance (for more details, see Section 6.4.1). Land ownership includes slightly more state land and less private corporate land compared to the Proposed Blue/Orange Route.

#### 6.5.3.2 Wilson Lake Alignment Modification

The Wilson Lake Alignment Modification is located in the central portion of the Effie Variation Area (Map 4-15). This alignment modification is the same

length as the comparable segment of the Proposed Blue Route (Table 4-5, Map 6-71). The Proposed Blue Route crosses lands designated as Moderate Rank for the Preliminary MBS Sites of Biodiversity Significance (for more details, see Section 6.4.1). Land ownership includes corporate and state forest.

The Wilson Lake Alignment Modification shifts the anticipated alignment approximately 500 feet east from corporate and state forest lands onto an alignment with a greater percentage of state forest land (Map 6-71). This alignment modification crosses lands designated as Moderate Rank for the Preliminary MBS Sites of Biodiversity Significance (for more details, see Section 6.4.1).

#### 6.5.3.3 Grass Lake Alignment Modification

The Grass Lake Alignment Modification is located in the northeast portion of the Balsam Variation Area (Map 4-17). The alignment modification is the same length as Proposed Blue Route (Table 4-5, Map 6-72). The Proposed Blue Route crosses Grass Lake, a MnDNR PWI waterbody and also a wild rice waterbody. There is one residence located within 1,000 feet west of the Proposed Blue Route, south of Grass Lake. Land ownership includes private, corporate, and county-administered state lands; part of the Proposed Blue Route follows a boundary between private and corporate lands.

The Grass Lake Alignment Modification shifts the anticipated alignment approximately 900 feet east to avoid crossing Grass Lake (Map 6-72). In addition, this alignment modification also shifts the transmission line east and away from one residence on the south end of Grass Lake, but shifts the alignment closer to six residences on the west side of Bray Lake. Land ownership includes corporate and state forest lands, and avoids private land.

#### 6.5.3.4 Dead Man's Pond Alignment Modification

The Dead Man's Pond Alignment Modification is located in the central portion of the Dead Man's Pond Variation Area (Map 4-17). This alignment modification is the same length as the comparable segment of the Proposed Blue Route (Table 4-5, Map 6-73). There is one residence located east of and within 1,000 feet of the Proposed Blue Route. The Proposed Blue Route crosses and then follows the west side of CSAH 8 for about one-third of its length. Land ownership includes private, corporate, and county-administered state forest lands; part of the Proposed Blue Route follows a boundary between private and county-administered state forest lands.

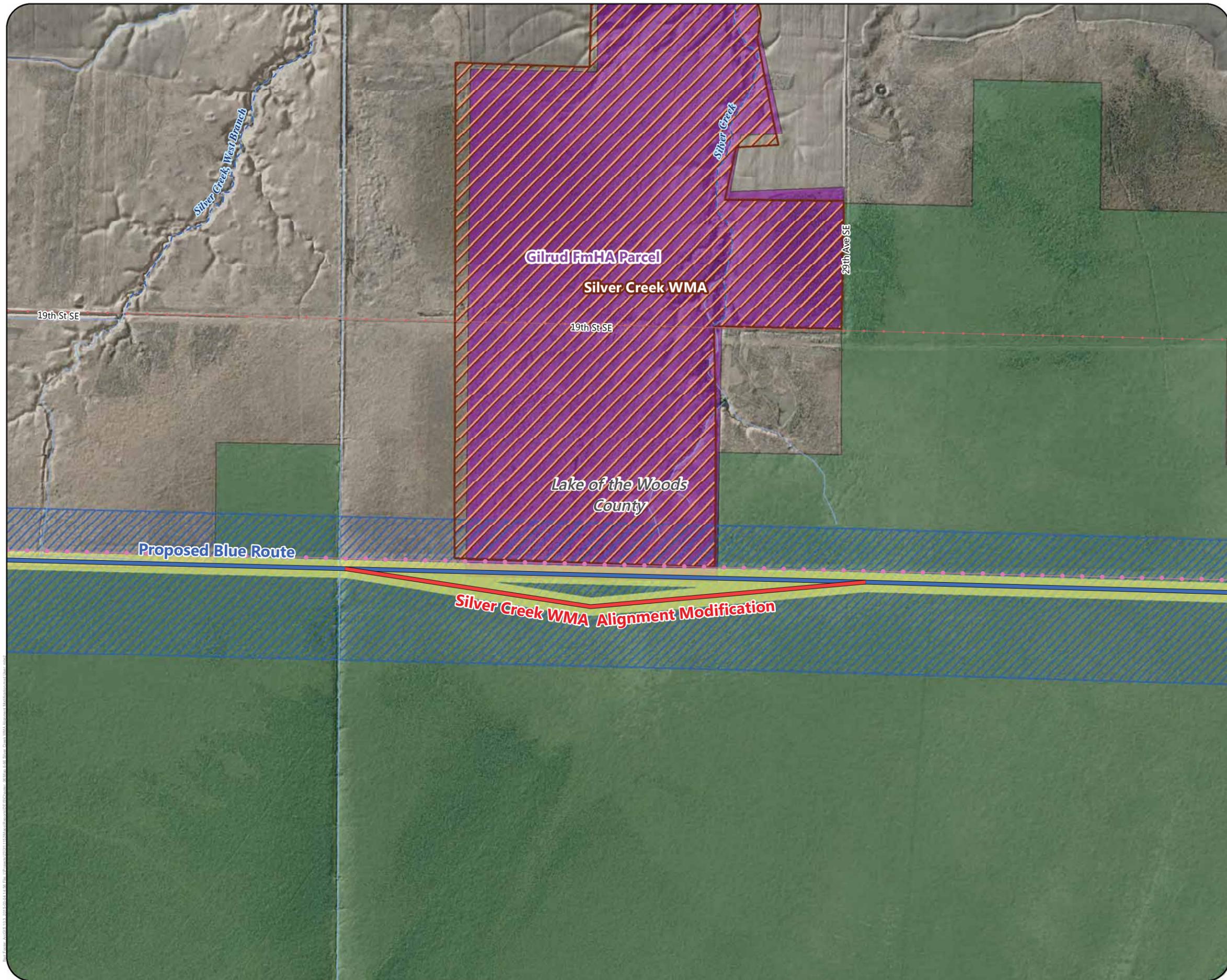
The Dead Man's Pond Alignment Modification shifts the anticipated alignment approximately 1,000 feet west and away from one residence located near CSAH 8. However this modification shifts the alignment closer to two residences located along CSAH 57 and on to more private land. In addition, while this alignment modification crosses the CSAH 8 and CSAH 57, it does not parallel the highway corridors (Map 6-73). The alignment modification crosses Dead Man's Pond, a MnDNR PWI waterbody. In addition, this alignment modification crosses lands designated as Moderate Rank for the Preliminary MBS Sites of Biodiversity Significance (for more details, see Section 6.4.4). Land ownership includes more private, corporate, and county-administered state forest lands; but shifts the alignment west from the boundary between private and county-administered state forest lands onto private land.

#### **6.5.3.5 Trout Lake Alignment Modification**

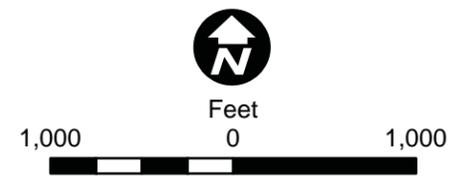
The Trout Lake Alignment Modification is located in the central portion of the Blackberry Variation Area (Map 4-17). This alignment modification is the same length as the comparable segment of the Proposed Blue Route (Table 4-5, Map 6-74). There are three residences within 1,000 feet of the Proposed Blue Route. For about half of its length (north end), the Proposed Blue Route crosses corporate land, and then it follows the boundary between corporate and private land.

The Trout Lake Alignment Modification shifts the anticipated alignment away from the two residences located west of the Proposed Blue Route, so only the one residence located within 1,000 feet to the southeast (south of CSAH 70) is still within 1,000 feet of this alignment (Map 6-74). Land ownership is corporate.

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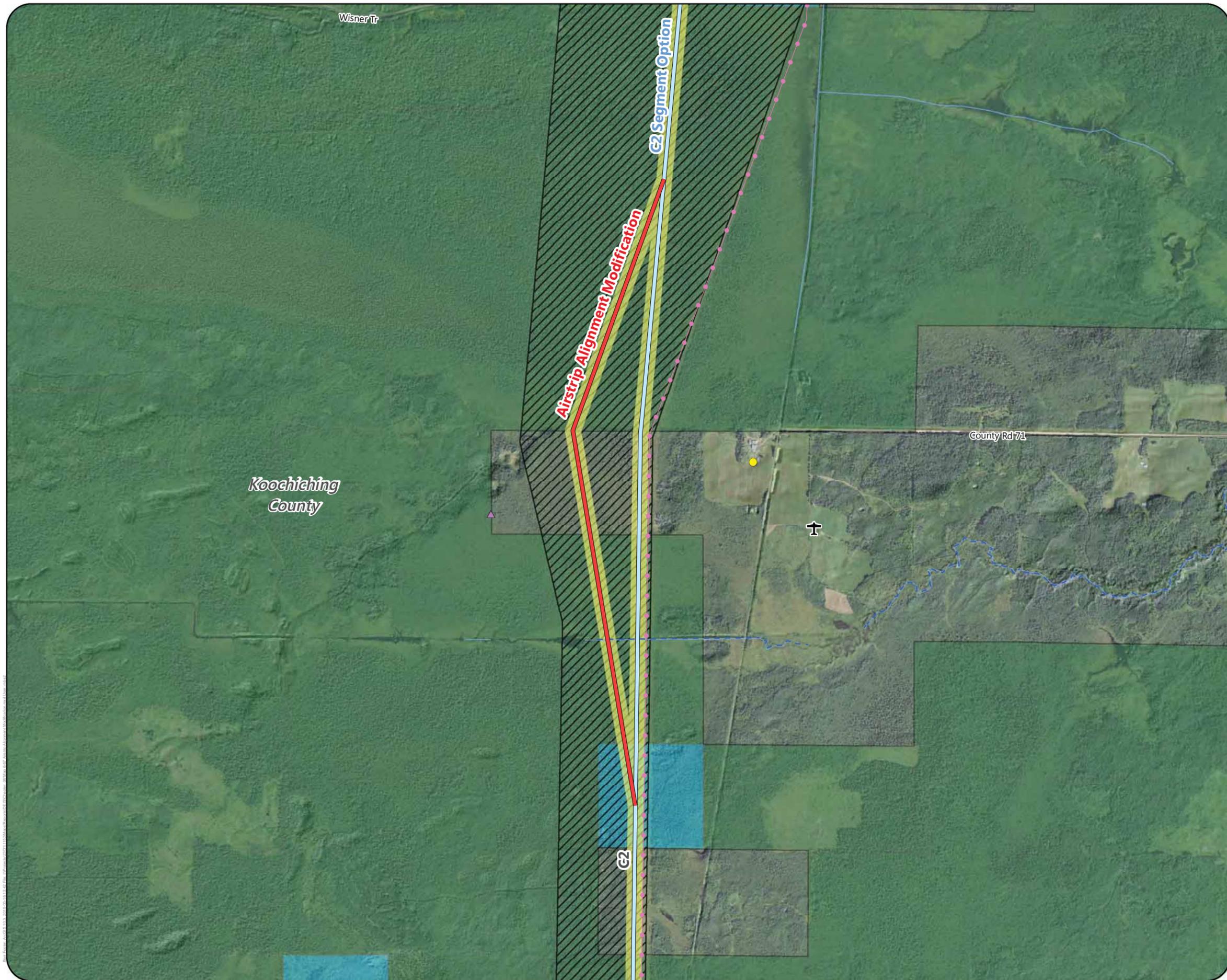
- Proposed Routes**
- Blue Route Anticipated Alignment
  - Blue Route Corridor
- Alternatives**
- Silver Creek WMA Alignment Modification
  - Anticipated Right-of-Way
- Existing Transmission Lines**
- 69 or 115 kV
  - 230 kV
  - NHD Watercourse
  - PWI Watercourse
  - Wildlife Management Area (WMA)
- Land Ownership (Assumed)**
- Private Land
  - State Land
  - USFWS Interest Lands



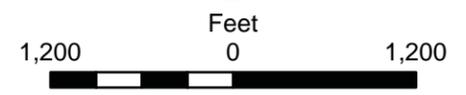
Map 6-66

**SILVER CREEK WMA  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





- Proposed Route**
- C2 Segment Option Anticipated Alignment
  - C2 Segment Option Route Corridor
- Alternatives**
- Airstrip Alignment Modification
  - Anticipated Right-of-Way
- Existing Transmission Lines**
- 230 kV
  - Residence
  - Private Airstrip
  - Aggregate Source Location
  - NHD Watercourse
  - PWI Watercourse
- Land Ownership (Assumed)**
- Private Land
  - Corporate
  - State Land



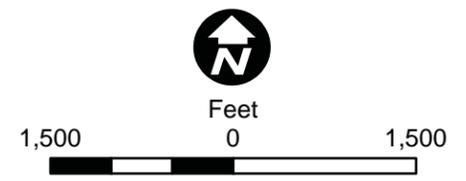
Map 6-67

**AIRSTRIP  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





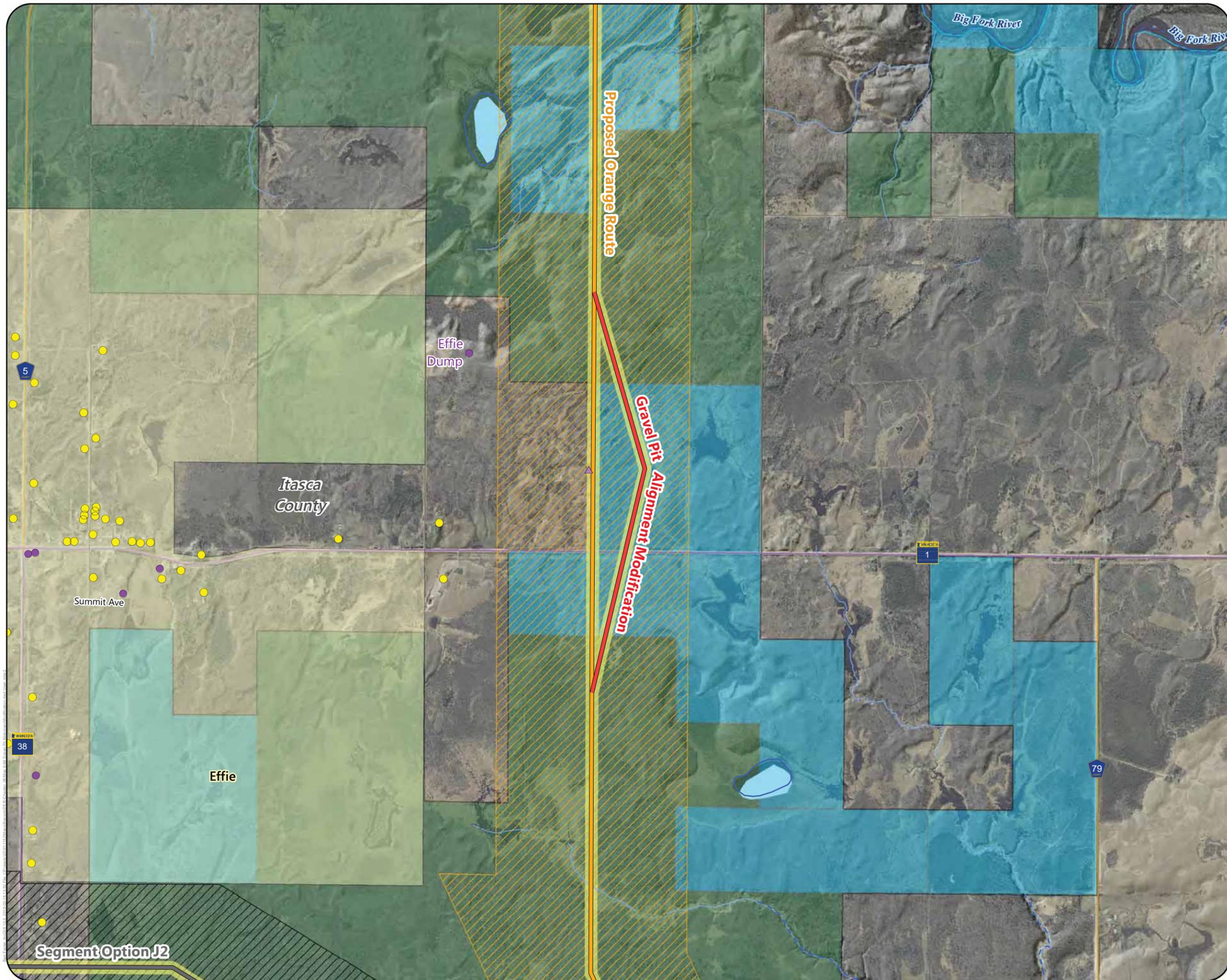
- Proposed Route**
- Orange Route Anticipated Alignment
  - Orange Route Corridor
- Alternative**
- Alignment Modification
  - Anticipated Right-of-Way
  - Residence
  - NHD Watercourse
  - PWI Watercourse
- Land Ownership (Assumed)**
- Private Land
  - State Land



Map 6-68

**MIZPAH  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





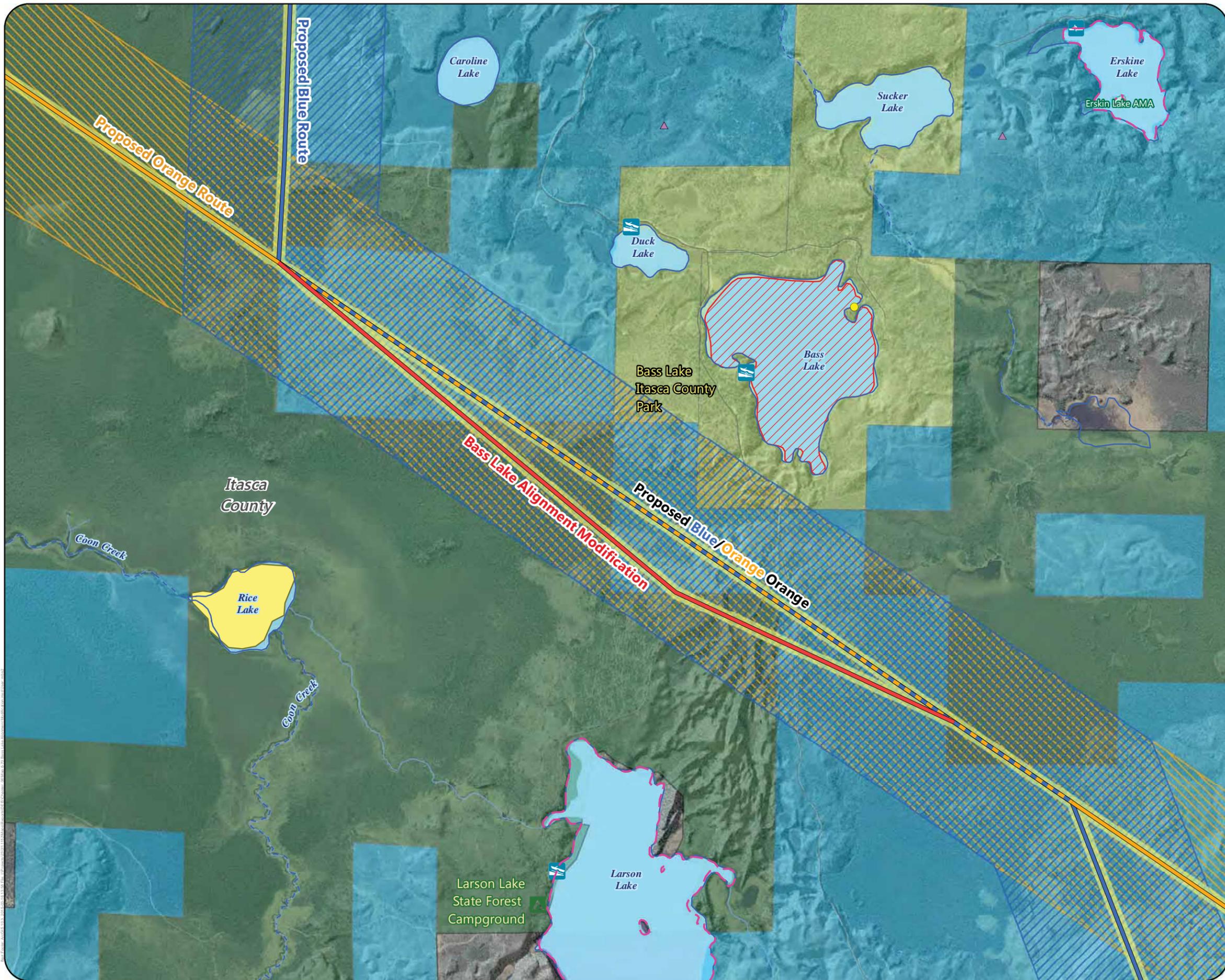
- Proposed Route**
- Orange Route Anticipated Alignment
  - J2 Segment Option Anticipated Alignment
  - Orange Route Corridor
  - J2 Segment Option Route Corridor
- Alternative**
- Gravel Pit Alignment Modification
  - Anticipated Right-of-Way
  - Residence
  - Aggregate Source Location
- MPCA Database**
- Multiple Activities
  - NHD Watercourse
  - PWI Watercourse
  - Municipal Boundary
- Land Ownership (Assumed)**
- Private Land
  - Corporate
  - State Land



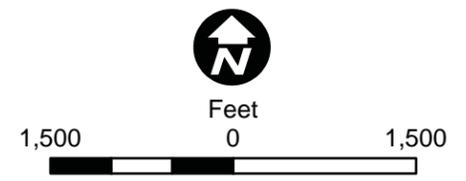
Map 6-69

**GRAVEL PIT  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





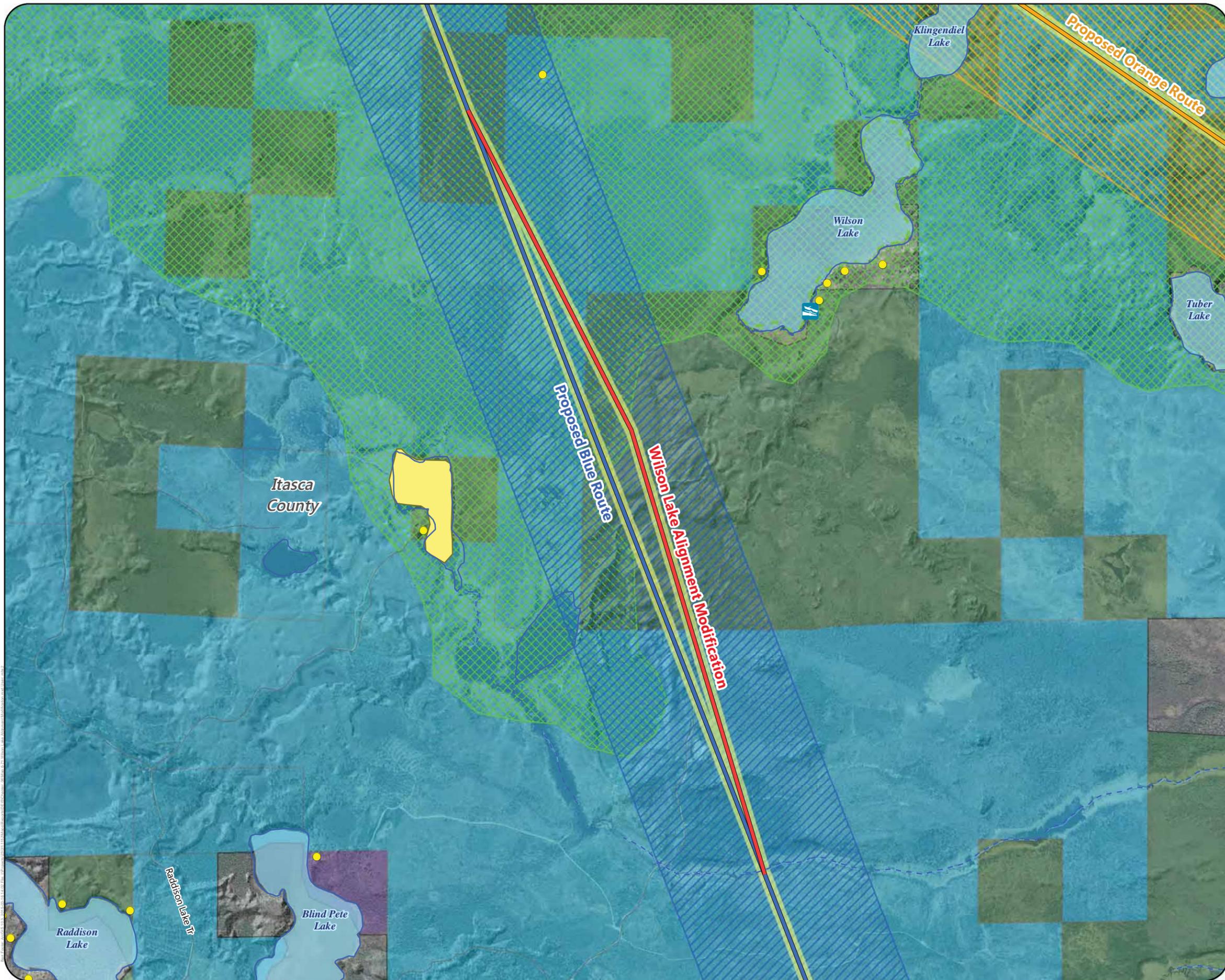
- Proposed Routes**
- Blue/Orange Route Anticipated Alignment
  - Blue Route Anticipated Alignment
  - Orange Route Anticipated Alignment
  - Blue Route Corridor
  - Orange Route Corridor
- Alternative**
- Bass Lake Alignment Modification
  - Anticipated Right-of-Way
  - State Forest Campground
  - Residence
  - Aggregate Source Location
  - NHD Watercourse
  - PWI Watercourse
  - NHD Waterbody
  - PWI Waterbody
  - Trout Lake
  - Wild Rice Lake
  - MPCA Impaired Waterbody
- Land Ownership (Assumed)**
- Private Land
  - County Land
  - Federal Land
  - Corporate
  - State Land



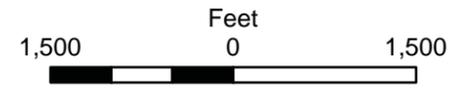
Map 6-70

**BASS LAKE  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





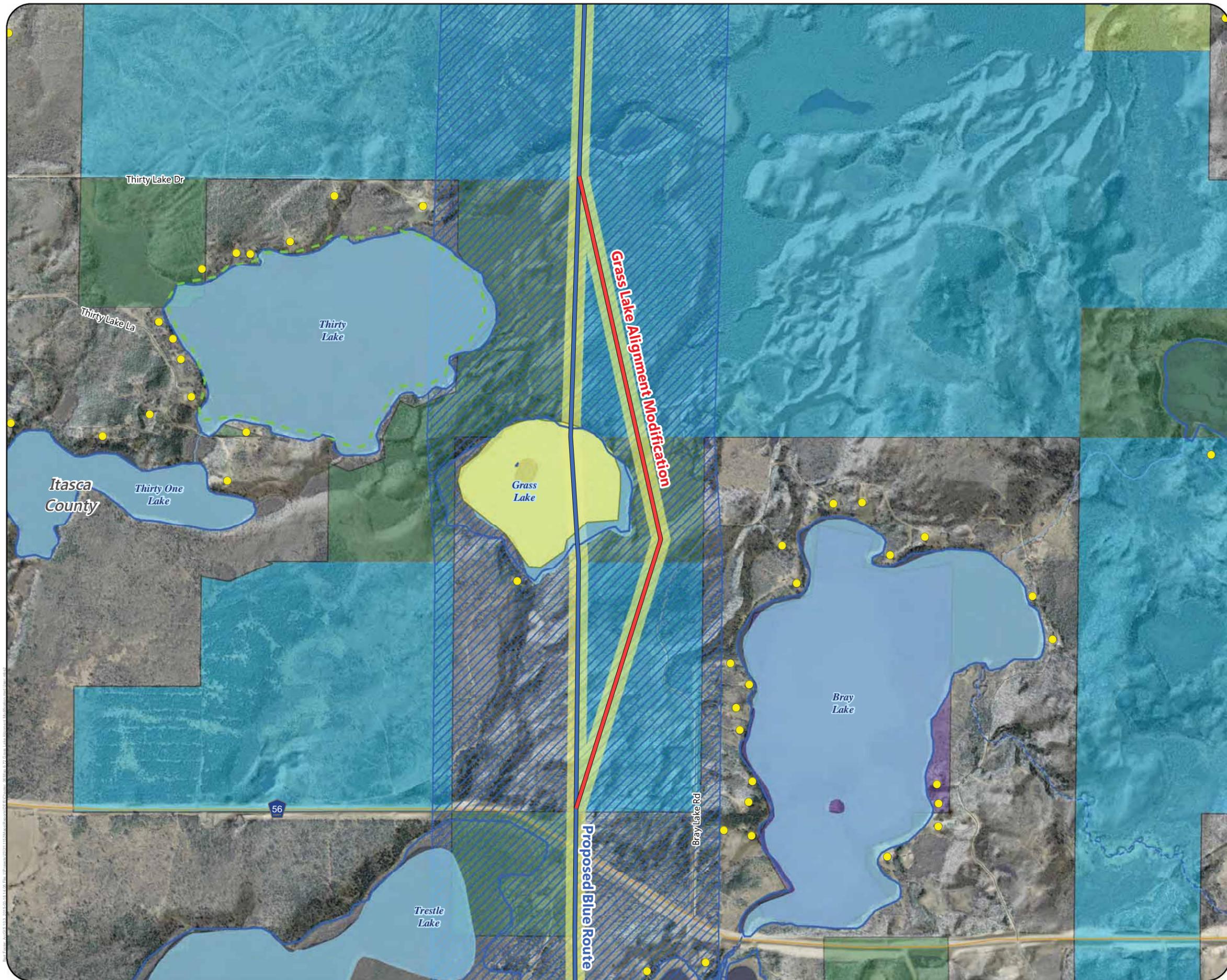
- Proposed Routes**
- Blue Route Anticipated Alignment
  - Orange Route Anticipated Alignment
  - Blue Route Corridor
  - Orange Route Corridor
- Alternative**
- Wilson Lake Alignment Modification
  - Anticipated Right-of-Way
  - Residence
  - Trailer Launch Water Access
  - NHD Watercourse
  - PWI Watercourse
  - NHD Waterbody
  - PWI Waterbody
  - Wild Rice Lake
  - Shallow Lake
- Site of Biodiversity Significance (All Ranks Preliminary)**
- Moderate Significance
- Land Ownership (Assumed)**
- Private Land
  - Federal Land
  - Corporate
  - State Land



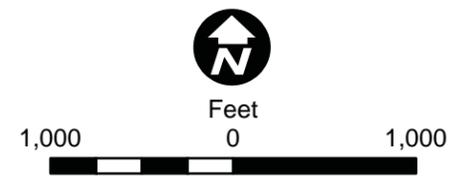
Map 6-71

**WILSON LAKE  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





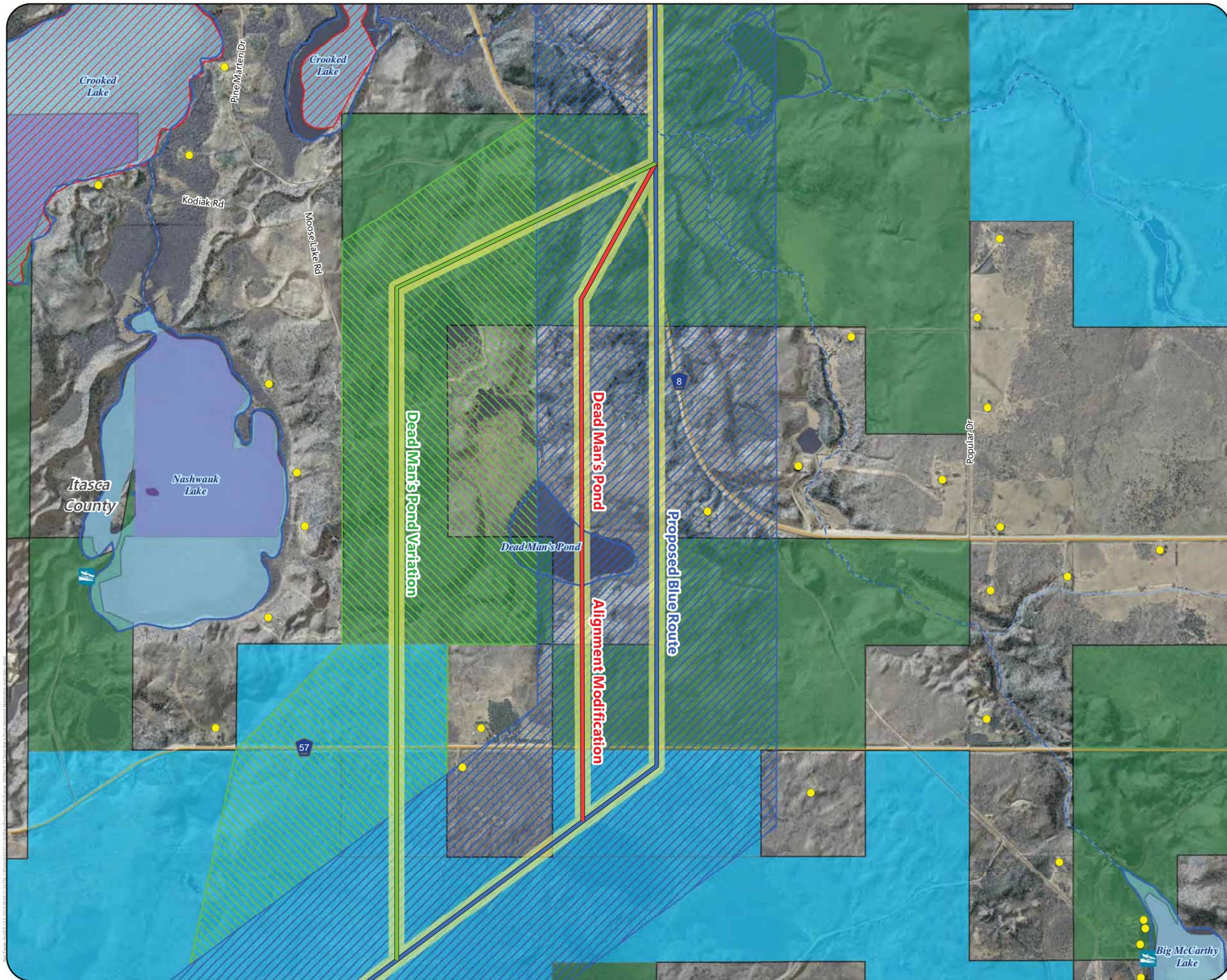
- Proposed Route**
- Blue Route Anticipated Alignment
  - Blue Route Corridor
- Alternative**
- Grass Lake Alignment Modification
  - Anticipated Right-of-Way
  - Residence
  - NHD Watercourse
  - PWI Watercourse
  - NHD Waterbody
  - PWI Waterbody
  - Wild Rice Lake
  - Shallow Lake
- Land Ownership (Assumed)**
- Private Land
  - County Land
  - Federal Land
  - Corporate
  - State Land



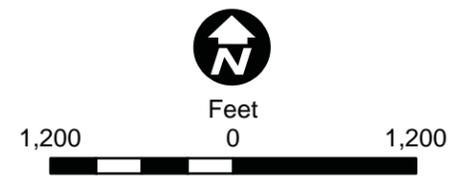
Map 6-72

**GRASS LAKE  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





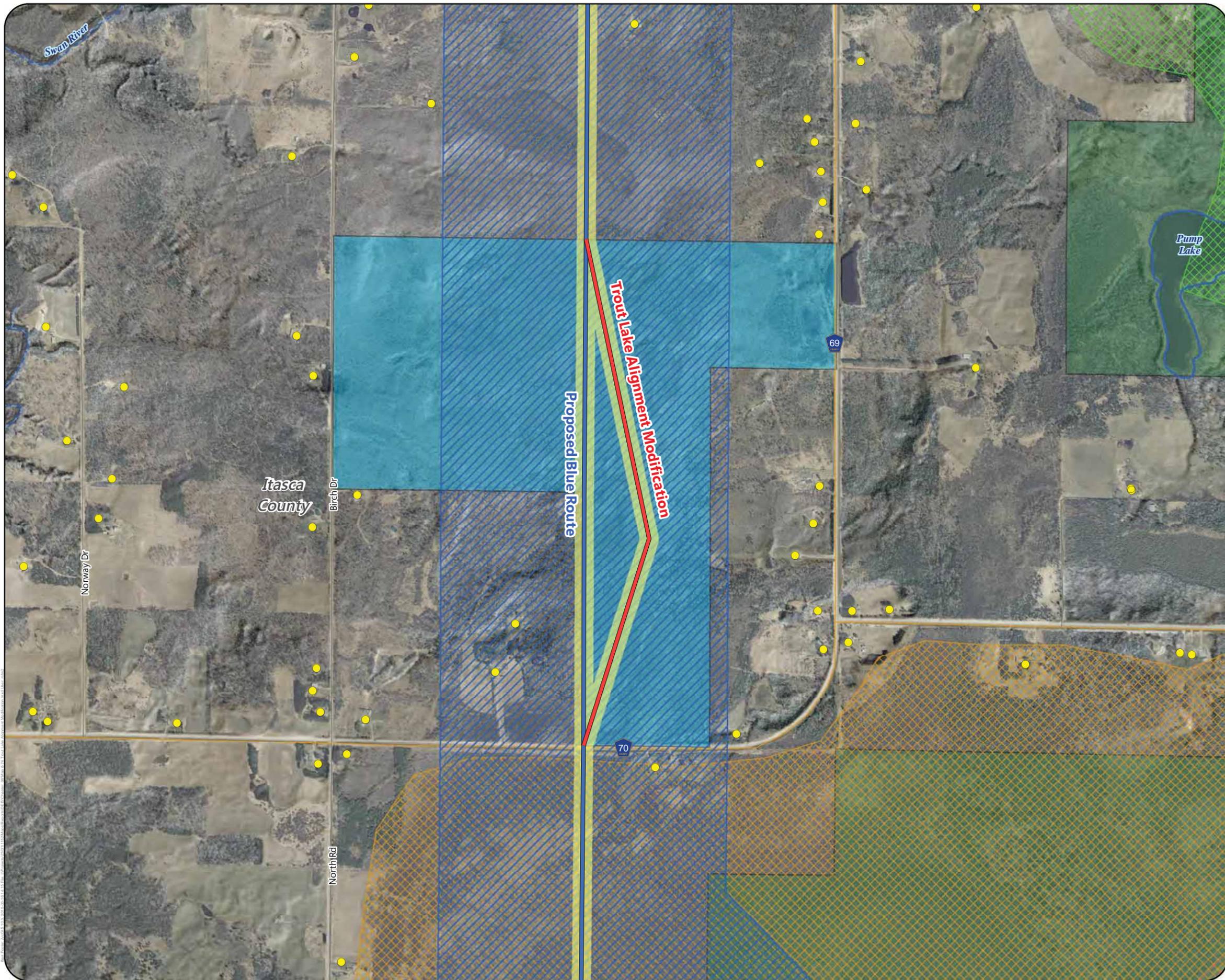
- Proposed Route**
- Blue Route Anticipated Alignment
  - Blue Route Corridor
- Alternatives**
- Dead Man's Pond Variation
  - Dead Man's Pond Alignment Modification
  - Dead Man's Pond Variation Route Corridor
  - Anticipated Right-of-Way
  - Residence
  - Trailer Launch Water Access
  - NHD Watercourse
  - PWI Watercourse
  - NHD Waterbody
  - PWI Waterbody
  - MPCA Impaired Waterbody
- Land Ownership (Assumed)**
- Private Land
  - Federal Land
  - Corporate
  - State Land



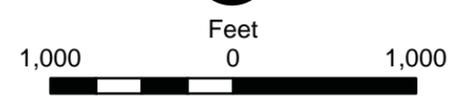
Map 6-73

**DEAD MAN'S POND  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





- Proposed Route**
- Blue Route Anticipated Alignment
- Blue Route Corridor
- Alternative**
- Trout Lake Alignment Modification
- Anticipated Right-of-Way
- Existing Transmission Lines**
- 69 or 115 kV
- Residence
- NHD Watercourse
- PWI Watercourse
- PWI Waterbody
- Site of Biodiversity Significance (All Ranks Preliminary)**
- Moderate Significance
- High Significance
- Land Ownership (Assumed)**
- Private Land
- Corporate
- State Land



Map 6-74

**TROUT LAKE  
ALIGNMENT MODIFICATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement



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## 6.6 Hops

There are five hops identified for the proposed Project as described in Chapter 4. Additional details are provided in Appendix E.

### 6.6.1 West Section

There are five hops identified for the proposed Project in the West Section – Hops 1, 2, 3, 4, and 5. Hops 1, 2, and 3 provide a connection for the Proposed Blue/Orange Route and Variation in the Cedar Bend WMA Variation Area to the variations in the Beltrami North and Beltrami North Central variation areas. Hops 3 and 4 provide a connection for the Proposed Blue/Orange Route and Beltrami North Variation 1 in the Beltrami North Variation Area to the Beltrami North Central Variations 3 and 4 in the Beltrami North Central Variation Area. Hop 5 provides a connection from the south end of Beltrami North Central variations 4 and 5 west to the Proposed Orange Route

#### Hop 1

Hop 1 is located in the southeastern portion of the Cedar Bend WMA Variation Area (Map 4-5) and the northwestern corner of the Beltrami North Central Variation Area (Map 4-7). The length of Hop 1 is approximately 0.7 miles (Map 6-75). The closest residence to this hop is approximate 0.7 miles to the northwest. Land ownership includes only state forest lands; it crosses Lake of the Woods and Beltrami Island state forests (Map 6-13). Hop 1 crosses the existing 500 kV transmission line. The entire length of the hop crosses either shrub or forested wetlands (Map 6-13). This hop crosses MBS Sites of Biodiversity Significance ranked as high or moderate significance (Map 6-14).

#### Hop 2

Hop 2 is located in the southeastern portion of the Cedar Bend WMA Variation Area (Map 4-5) and the northwestern corner of the Beltrami North Central Variation Area (Map 4-7). The length of Hop 2 is approximately one mile (Map 6-75). The closest residence to this hop is approximate 0.7 miles to the northwest. Land ownership includes only state forest lands. The hop crosses Lake of the Woods and Beltrami Island state forests (Maps 6-13 and 6-23). Hop 2 parallels an existing 230 kV transmission line for its entire length. The entire length of the hop crosses either shrub or forested wetlands (Maps 6-13 and 6-23). This hop crosses MBS Sites of Biodiversity Significance ranked as high or moderate significance (Maps 6-14 and 6-24).

#### Hop 3

Hop 3 is located in the southeastern portion of the Cedar Bend WMA Variation Area (Map 4-5) and the northwestern corner of the Beltrami North Central Variation Area (Map 4-7). The length of Hop 3 is approximately 1.2 miles (Map 6-75). The closest residence to this hop is approximate 1.3 miles to the northwest. Land ownership includes only state forest lands; it crosses Beltrami Island state forest (Map 5-5). Hop 3 crosses the existing 500 kV transmission line. The entire length of the hop crosses either shrub or forested wetlands (Maps 6-13 and 6-23). This hop crosses MBS Sites of Biodiversity Significance ranked as high or moderate significance (Maps 6-14 and 6-24).

#### Hop 4

Hop 4 is located in the eastern portion of the Beltrami North Variation Area (Map 4-6) and the northwestern corner of the Beltrami North Central Variation Area (Map 4-7). The length of Hop 4 is approximately one mile (Map 6-75). The closest residence to this hop is approximate 1.2 miles to the northwest. Land ownership includes only state forest lands; it crosses Beltrami Island state forest (Map 6-18). Hop 4 does not cross any existing transmission lines. The entire length of the hop crosses either shrub or forested wetlands (Map 6-18). This hop crosses MBS Sites of Biodiversity Significance ranked as high significance (Map 6-19).

#### Hop 5

Hop 5 is located in the southwestern portion of the Beltrami North Central Variation Area (Map 4-7). The length of Hop 5 is approximately 3.5 miles (Map 6-76). The closest residence to this hop is approximate 0.4 miles to the north. Land ownership includes private and state forest; it crosses Lake of the Woods and Beltrami Island state forests (Map 6-18). The Border Trails snowmobile trail crosses this hop once (Map 5-5). The eastern end of the hop crosses an unnamed watercourse (Map 6-76). Hop 5 crosses the existing 500 kV transmission line. The entire length of the hop crosses emergent, shrub, or forested wetlands (Map 6-18). This hop crosses MBS Sites of Biodiversity Significance ranked as high or unknown significance (Map 6-19).

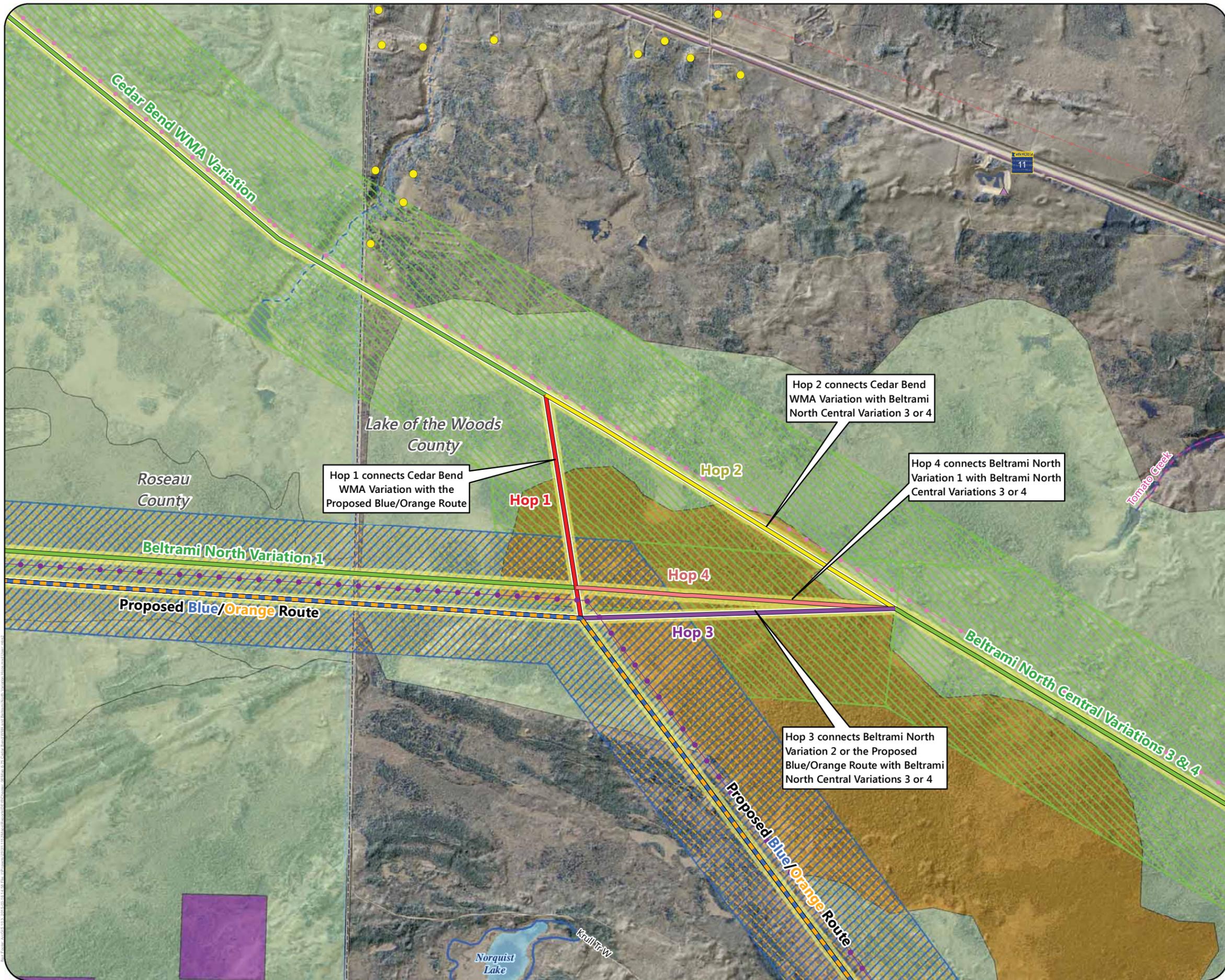
### 6.6.2 Central Section

There are no hops identified in the Central Section.

### 6.6.3 East Section

There are no hops identified in the East Section.

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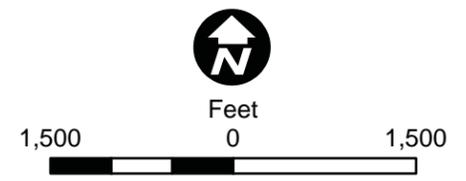
- Proposed Route**
- Blue/Orange Route Anticipated Alignment
  - Blue/Orange Route Corridor
- Alternatives**
- Route Variation Anticipated Alignment
  - Hop 1 Anticipated Alignment
  - Hop 2 Anticipated Alignment
  - Hop 3 Anticipated Alignment
  - Hop 4 Anticipated Alignment
  - Route Variation/Hop Route Corridor
  - Anticipated Right-of-Way
- Existing Transmission Lines**
- 69 or 115 kV
  - 230 kV
  - 500 kV
- Other Features**
- Residence
  - Aggregate Source Location
  - NHD Watercourse
  - PWI Watercourse
  - Trout Stream
  - NHD Waterbody
  - PWI Waterbody
  - USFWS Interest Lands
- MBS Site of Biodiversity Significance**  
(Ranks Preliminary Except for Roseau County)
- Moderate Significance
  - High Significance
  - County Boundary

Hop 1 connects Cedar Bend WMA Variation with the Proposed Blue/Orange Route

Hop 2 connects Cedar Bend WMA Variation with Beltrami North Central Variation 3 or 4

Hop 4 connects Beltrami North Variation 1 with Beltrami North Central Variations 3 or 4

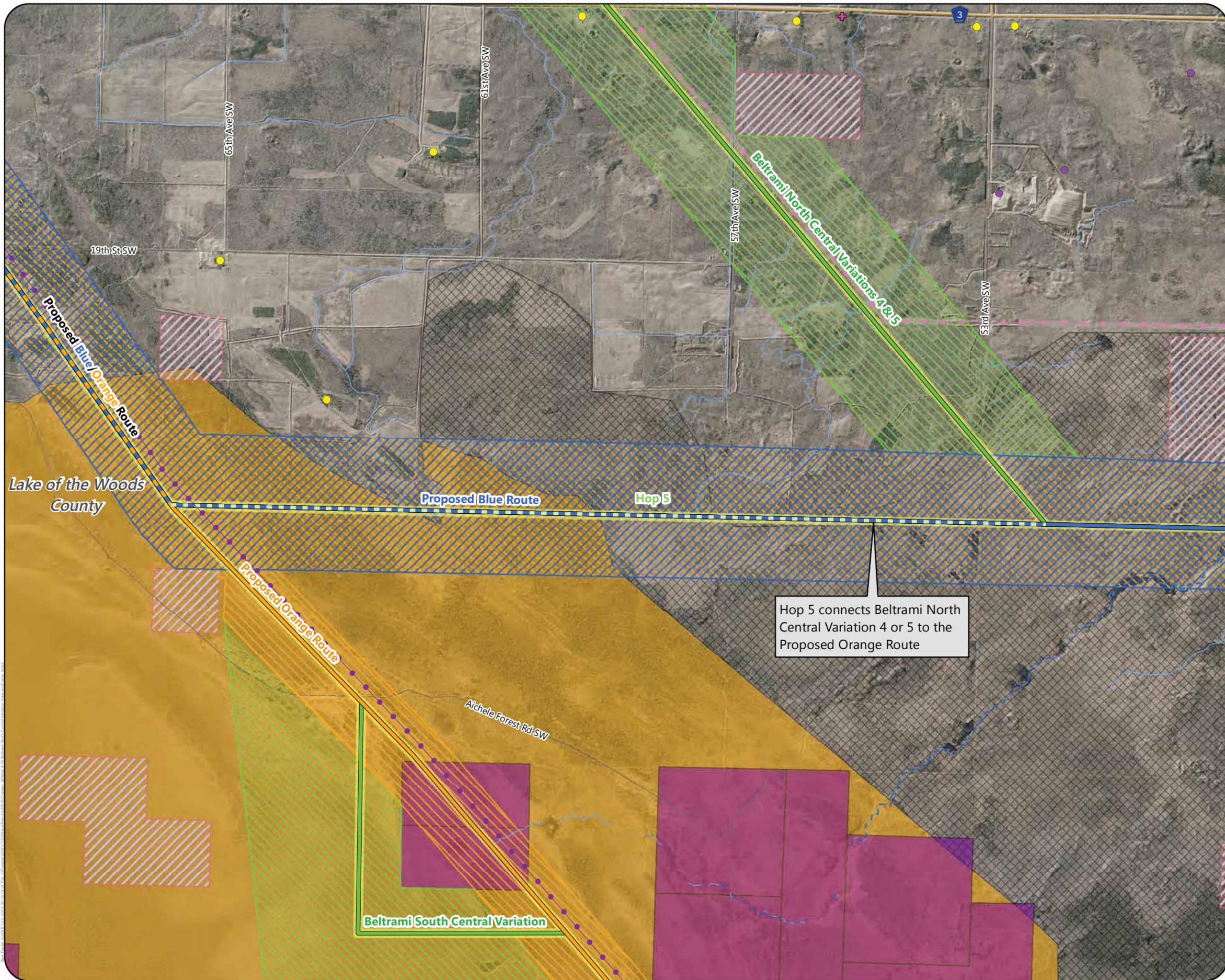
Hop 3 connects Beltrami North Variation 2 or the Proposed Blue/Orange Route with Beltrami North Central Variations 3 or 4



Map 6-75

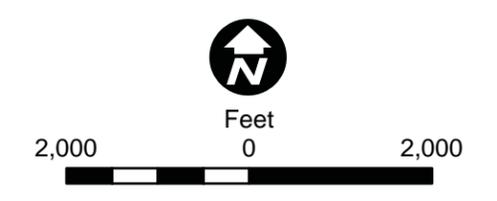
**CEDAR BEND WMA AND BELTRAMI NORTH VARIATION HOPS**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





- Proposed Route**
- Blue/Orange Anticipated Alignment
  - Blue Route Anticipated Alignment
  - Orange Route Anticipated Alignment
  - Blue/Orange Route Corridor
  - Blue Route Corridor
  - Orange Route Corridor
- Alternatives**
- Route Variation Anticipated Alignment
  - Hop 5 Anticipated Alignment
  - Route Variation Route Corridor
  - Anticipated Right-of-Way
- Existing Transmission Lines**
- 230 kV
  - 500 kV
  - Residence
  - NHD Watercourse
  - PWI Watercourse
  - USFWS Interest Lands
  - Indian Reservation Land
- MBS Site of Biodiversity Significance**  
(All Ranks Preliminary)
- Rank Unknown
  - High Significance
  - County Boundary

Hop 5 connects Beltrami North Central Variation 4 or 5 to the Proposed Orange Route



Map 6-76

**BELTRAMI NORTH  
CENTRAL VARIATION HOP**  
Great Northern Transmission Line  
Draft Environmental Impact Statement



## 6.7 Associated Facilities

The associated facilities for the proposed Project include the 500 kV compensation station, regeneration stations, and Blackberry 500 kV Substation. Information regarding these associated facilities are provided in Chapter 2. Additional details are provided in Appendix E.

### 6.7.1 West Section

The associated facility located in the West Section are two regeneration stations and the proposed 500 kV series compensation station.

#### 6.7.1.1 Proposed Regeneration Stations

There are two proposed regeneration stations located along the Proposed Blue/Orange Route within the West Section (Map 6-77). The Warroad SCS and Rd 2 regeneration stations are located in the central portion of the Beltrami North Variation Area (Map 4-6) and Beltrami North Central Variation Area (Map 4-7), respectively.

The site for the Warroad SCS regeneration station is located in an upland area adjacent to the Proposed Blue/Orange Route on the east side of CSAH 2 (Map 6-18). There is a residence located approximately 0.6 miles northwest of the site (Map 6-16). Winter Road River is located approximately 0.1 mile north of the site (Map 6-18). Land ownership consists of private lands (Map 6-16).

The site for the Rd 2 regeneration station is located in an upland area adjacent to Route 5 (Map 6-23). There is a residence located approximately 0.13 miles south of the site (Map 6-21). Land ownership is private lands (Map 6-21).

#### 6.7.1.2 Proposed 500 kV Series Compensation Station

The 60-acre site for the proposed 500 kV series compensation station is located in the central portion of the Beltrami North Variation Area (Map 4-6). The nearest residence is located approximately 0.4 miles north of the site (Map 6-78). Land ownership includes private land with MnDNR-identified potential mineral resources (Map 6-16) and scattered NWI-identified emergent wetlands (Map 6-78). Based on U.S. Geological Survey (USGS) GAP land cover data, the southern half of the site is in the USDA-Farm Service Agency Conservation Reserve Program.

The compensation station would contain 500 kV series capacitor banks and other large-scale electrical equipment and structures similar to those

comprising most large substations. Depending on its location and surrounding elements in the landscape, the compensation station could contrast strongly with its surroundings. It may be noticeable in foreground or middleground views from residences or other sensitive visual resources, therefore it has the potential to result in significant aesthetic impacts.

### 6.7.2 Central Section

The associated facilities located in the Central Section are the four proposed regeneration stations.

#### 6.7.2.1 Proposed Regeneration Stations

There are four proposed regeneration stations located along the Proposed Blue Route and one proposed regeneration station located along the Proposed Orange Route within the Central Section (Map 6-77). The Rd 158 regeneration station is located in the northern portion of the Pine Island Variation Area. The two options for the Hwy 71 regeneration station are located in the southern portion of the C2 Segment Option Variation Area. The third Hwy 71 regeneration station is located in the northern portion of the J2 Segment Option Variation Area.

The site for the Rd 158 regeneration station is located in an upland area adjacent to Route 5 (Map 6-28). There is a residence located approximately 0.1 miles and 0.2 miles to the southeast and northeast of the site, respectively (Map 6-26). Land ownership is private lands (Map 6-26).

The site for the Hwy 71 regeneration station (option 1) is located in an emergent and forested wetland area adjacent to State Highway 71 (Map 6-43). There is a residence located approximately 2.5 north of the site (Map 6-41). Land ownership is state forest lands (Map 6-41). This site is located within a MBS Site of Biodiversity Significance ranked as unknown significance (Map 6-44).

The site for the Hwy 71 regeneration station (option 2) is located in an upland area adjacent to State Highway 71 (Map 6-43). There is a residence located approximately 2 miles north of the site (Map 6-41). An unnamed river is located approximately 0.1 mile northeast of the site (Land ownership is state forest lands (Map 6-43). Land ownership is state forest lands (Map 6-43).

The site for the third Hwy 71 regeneration station is located in an upland area between State Highway 71 to the west and a forest wetland to the east (Map 6-48). There is a residence located

approximately 1.4 miles southwest of the site (Map 6-46). Land ownership is state forest lands (Map 6-46). This site is located within a MBS Site of Biodiversity Significance ranked as unknown significance (Map 6-49). The regeneration stations consist of fairly small buildings that house infrastructure to boost the data signal passing through the optical fiber cable associated with the transmission line. Although the regeneration stations may contrast somewhat with their surroundings, the new transmission line nearby would produce stronger contrast and be more dominant due to its substantially taller height and contrasting form.

### 6.7.3 East Section

The associated facility located in the East Section is the two proposed regeneration stations and the proposed 500 kV Blackberry Substation.

#### 6.7.3.1 Proposed Regeneration Stations

There is one proposed regeneration station located along the Proposed Blue Route and one proposed regeneration station located along the Proposed Orange Route within the East Section (Map 6-77). The Rd 287 and Hwy 1 regeneration stations are located in the southeastern portion of the Effie Variation Area.

The site for the Rd 287 regeneration station is located in an upland area just south of the intersection of CSAH 42 and CR 287 (Map 6-53). There is a residence located approximately 0.4 miles southwest of the site (Map 6-51). The Big Fork River is located approximately 0.5 miles west of the site (Map 6-53). Land ownership is private lands (Map 6-51).

The site for the Hwy 1 regeneration station is located in an upland area near the intersection of State Highway 1 and Township Road 751 (Map 6-53). The closest residence is located approximately 0.2 miles northwest of the site (Map 6-51). Land ownership is county-administered state forest lands (Map 6-51).

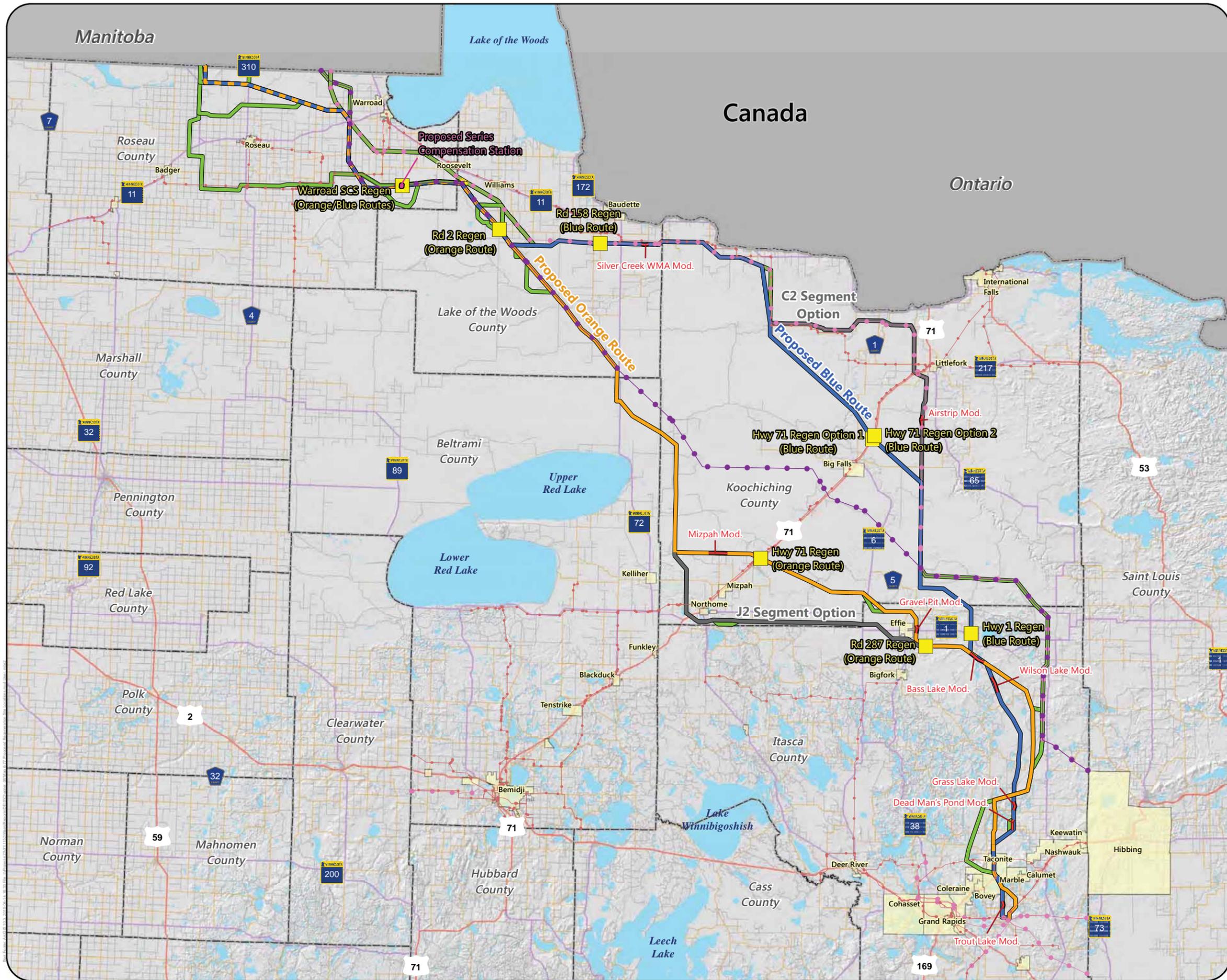
#### 6.7.3.2 Proposed Blackberry 500 kV Substation

The proposed Blackberry Substation would be located at the terminus of the Proposed Blue Route or the Proposed Orange Route adjacent to and approximately 0.25 miles east of the existing Blackberry Substation in the Blackberry Variation Area in the East Section (Map 6-79). There are existing transmission line corridors on the southwest and southeast sides of the fenced substation area. Three residences are located north of the fenced substation site: 0.14 miles north from the northwest

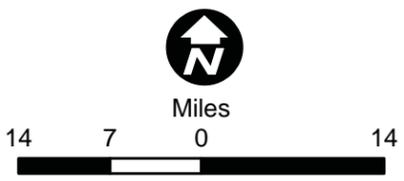
corner, 0.11 miles northeast of the northeast corner, and 0.24 miles northeast of the northeast corner (Map 6-79). Noise levels for the proposed Blackberry 500 kV Substations are discussed in Section 5.2.1.2.

The fenced area of the substation is approximately 17.4 acres (Map 6-79). There are two access roads that connect from CR 434 to the northeast and northwest areas of the substation. The access roads cross upland areas and are each 0.5 miles in length. Near CR 434, the access roads are 20 feet wide and lead to a parking lot just outside the fenced area that is approximately 70 feet by 60 feet. The north-central portion of the fenced area of the substation directly impacts 0.3 acres of a shallow marsh/forested wetland complex (Map 6-79). Wetlands are identified south of the fenced substation site, but would not be impacted by the proposed Project. No other natural resources were identified within or nearby the fenced substation area.

The proposed Blackberry Substation would contain many of the same elements as the existing substation and be similar in appearance and scale to it. Several existing large transmission lines extend through the area in the immediate vicinity of the new substation and enter the existing substation nearby. Because the proposed Blackberry Substation would be visible in the same views from surrounding locations, the addition of the proposed substation adjacent to the existing substation and transmission lines would result in only an incremental increase in contrast for these views. The incremental increase in contrast would be slightly greater where the proposed substation is located between the existing substation and viewers and slightly less where the proposed substation is located on the opposite side of the existing substation from viewers.



- Proposed Regeneration Site
- Proposed Series Compensation Station
- Proposed Routes**
- Blue/Orange Route
- Blue Route
- Orange Route
- Segment Option
- Alternatives**
- Route Variation
- Route Variation Hop
- Alignment Modification
- Existing Transmission Lines**
- 69 or 115 kV
- 230 kV
- 500 kV
- Streets and Highways**
- US Highway
- State Trunk Highway
- County State Aid Highway
- Local Road
- Municipal Boundary
- County Boundary
- International Boundary

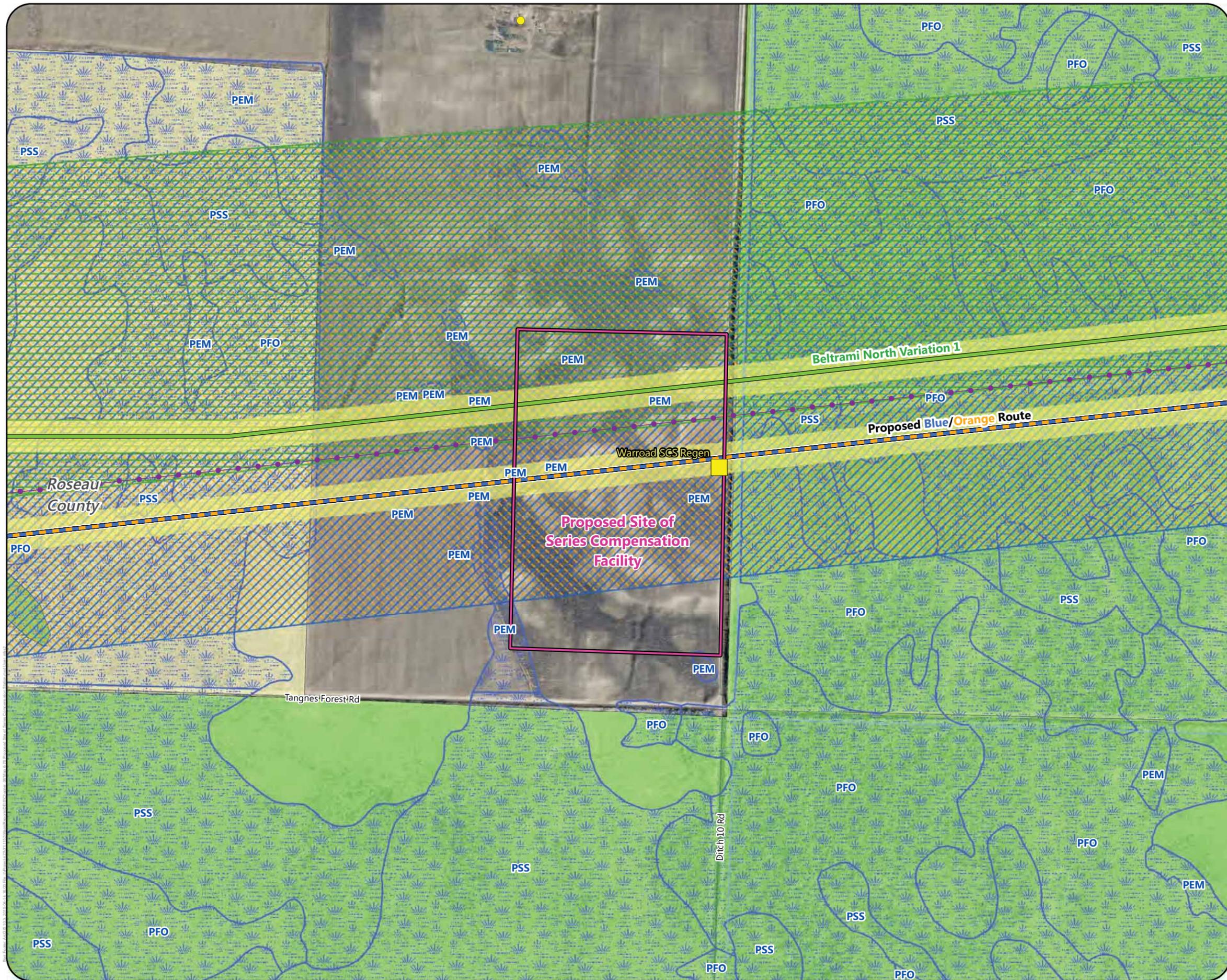


Map 6-77

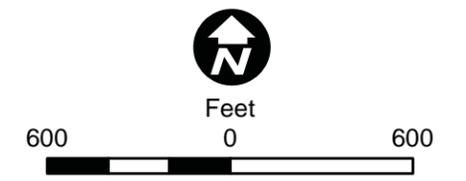
**PROPOSED REGENERATION  
SITE LOCATIONS**

Great Northern Transmission Line  
Draft Environmental Impact Statement





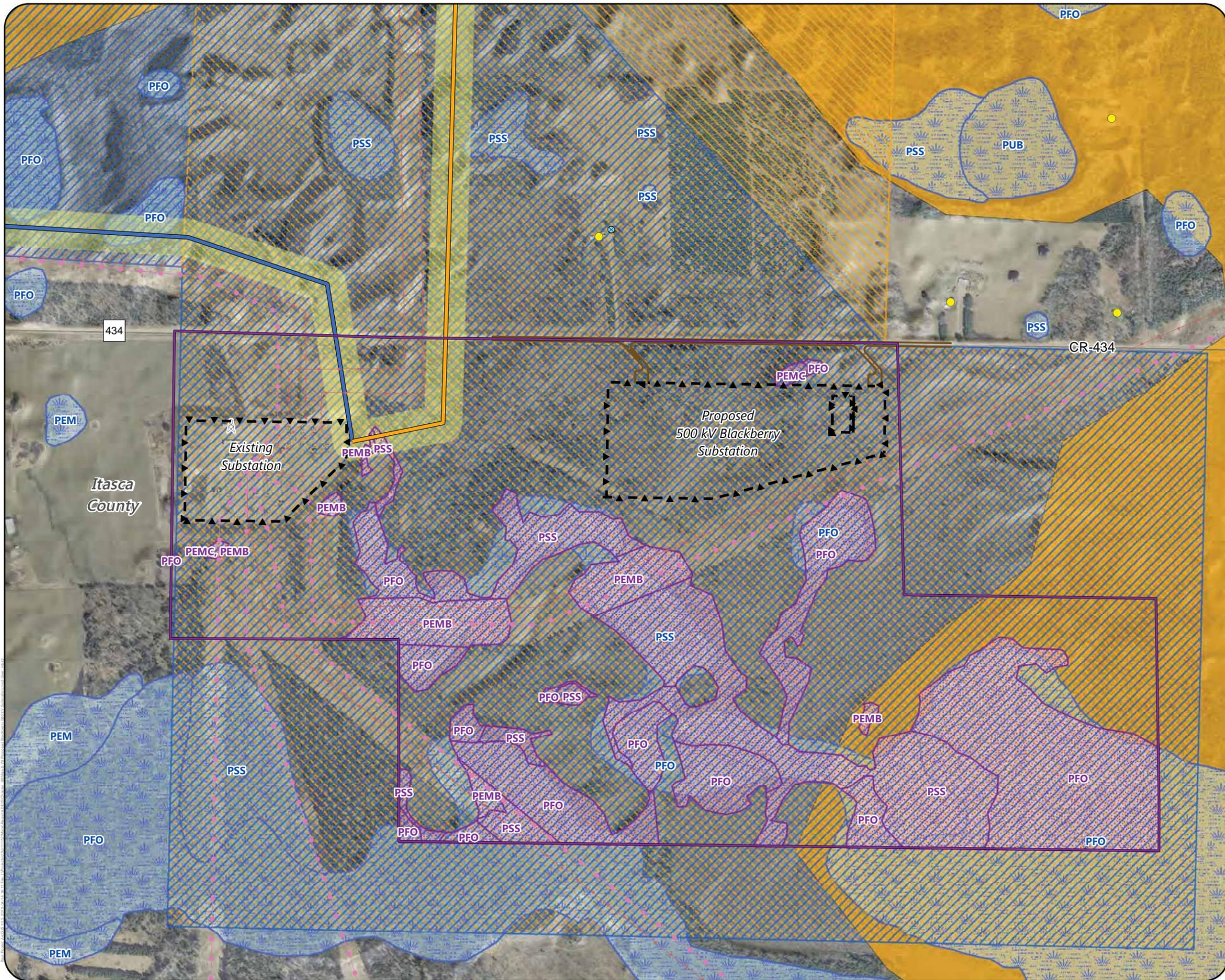
- Proposed Regeneration Site Location
- Proposed Series Compensation Station Boundary
- Proposed Route**
- Blue/Orange Route Anticipated Alignment
- Alternatives**
- Route Variation Anticipated Alignment
- Anticipated Right-of-Way
- Proposed Blue Route
- Proposed Orange Route
- Variation Route
- Existing Transmission Lines**
- 500 kV
- Residence
- NHD Watercourse
- National Wetland Inventory
- MBS Site of Biodiversity Significance**  
(Ranks Preliminary Except for Roseau Co.)
- Below
- Moderate Significance
- County Boundary



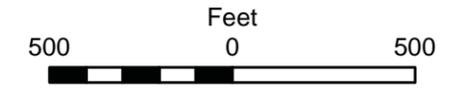
Map 6-78

**PROPOSED SITE OF SERIES COMPENSATION FACILITY**  
Great Northern Transmission Line  
Draft Environmental Impact Statement





- Proposed Routes**
- Blue Route Anticipated Alignment
  - Orange Route Anticipated Alignment
  - Anticipated Right-of-Way
  - Proposed Blue Route
  - Proposed Orange Route
- Proposed Blackberry 500 kV Substation Layout**
- Substation Study Area
  - Fence Line
  - Roads
- Existing Transmission Lines**
- 69 or 115 kV
  - 230 kV
  - Residence
  - Delineated Wetland Boundary
  - National Wetland Inventory
- MBS Site of Biodiversity Significance (All Ranks Preliminary)**
- High Significance
  - County Boundary



Map 6-79

**PROPOSED BLACKBERRY  
500 kV SUBSTATION**  
Great Northern Transmission Line  
Draft Environmental Impact Statement



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