



In the Matter of the HVTL Route Permit Application by Minnesota Power for the Great Northern Transmission Line Project and Associated Facilities in Roseau, Lake of the Woods, Beltrami, Koochiching and Itasca Counties, Minnesota

**ENVIRONMENTAL IMPACT STATEMENT
SCOPING DECISION**

PUC DOCKET NO. E015/TL-14-21

The above matter has come before the deputy commissioner of the Department of Commerce (Department) for a decision on the scope of the environmental impact statement (EIS) to be prepared for the Great Northern Transmission Line (GNTL) project proposed by Minnesota Power (MP) in Roseau, Lake of the Woods, Beltrami, Koochiching and Itasca counties, Minnesota.

Project Description

Minnesota Power (Applicant or MP), in partnership with Manitoba Hydro, proposes to construct a high voltage transmission line (HVTL) from the International border that would terminate at the Blackberry Substation in Itasca County.

The GNTL project includes the construction of a new 500 kV transmission line in Minnesota from the United States/Canadian border to the Minnesota Power Blackberry Substation near Grand Rapids, Minnesota. The 500 kV Line will be approximately 235-270 miles in length, subject to final route approval by the Commission, and will be constructed on a 200 foot wide right-of-way (ROW). The line will provide 883 megawatts (MW) of transfer capability.

Minnesota Power is requesting a route width that is 1,000 to 3,000 feet wide, with structures typically ranging in heights from approximately 100 feet to 150 feet above ground. The Applicant currently estimates between 4 to 5 structures per mile of transmission line. A variety of structure types (self-supporting suspension, guyed delta suspension, and guyed-V suspension) may be used along the route.

Minnesota Power anticipates that construction on the project will begin in the fall of 2016, with an in-service date of mid-year 2020.

Project Purpose

As stated by the Applicant, the primary objective of the GNTL project is to provide increased access to Manitoba hydropower. Additionally, MP states that the project facilitates an innovative wind storage provision in the power purchase agreement (PPA) that leverages the flexible and responsive nature of hydropower to optimize the value of MP's significant wind energy investments and compliments MP's EnergyForward resource strategy.

The GNTL project would provide delivery and access to power generated by Manitoba Hydro's hydroelectric stations in Manitoba, Canada. Minnesota Power, states in its certificate of need (CN) application, that the project is required to facilitate delivery of the combined 383 megawatts (MW) (250 MW PPA and the 133 MW Renewable Optimization Agreement) of hydropower and wind storage energy products to serve Minnesota Power, as well as additional hydropower to other utilities in the United States, thereby meeting future state and regional energy needs. Minnesota Power further states that while large hydropower transfers like this do not satisfy the current renewable energy mandates in Minnesota, such a hydropower transfer could support compliance with renewable energy requirements for utilities in Wisconsin and other states.

Regulatory Background

In Minnesota, no person may construct a high voltage transmission line (HVTL) without a route permit from the Minnesota Public Utilities Commission (Commission) (Minnesota Statute 216E.03). A high voltage transmission line is defined as a conductor of electric energy designed for and capable of operation at a voltage of 100 kV or more and greater than 1,500 feet in length (Minnesota Statute 216E.01). The proposed project will consist of approximately 220 miles of new 500 kV transmission line and therefore requires a route permit from the Commission.

Route permit applications are subject to environmental review conducted by Department of Commerce, Energy Environmental Review and Analysis (DOC-EERA) staff. Projects proceeding under the full permitting process require the preparation of an environmental impact statement (EIS) (Minnesota Statute 216E.03, Subd. 5). Public information and scoping meetings are held to solicit comments on the scope of the EIS. The Department of Commerce (Department) determines the scope of the EIS.¹ The Department may include alternative sites or routes suggested by the public in the scope of the EIS if such alternatives will aid in the Commission's decision on the route permit application (Minnesota Rule 7850.2500). The Department must include those site or routes "the Commission deems necessary that [were] proposed in a manner consistent with rules concerning the form, content, and timeliness of proposals for alternate site or routes."²

State (Department) and Federal (DOE) Joint Environmental Review

The Department of Energy (DOE) is the lead federal agency for the GNTL project. Pursuant to Executive Order (EO) 10485 of 1953, as amended by EO 12038, and 10 Code of Federal Regulations (CFR) Section 205.320, a Presidential Permit is required for the GNTL project because it will cross the international boundary between Minnesota and Manitoba, Canada.

Since the GNTL project constitutes a Major Federal Action, the DOE must consider the environmental effects of the project, and reasonable alternatives to the project, pursuant to the National Environmental Policy Act (NEPA). An Environmental Impact Statement (EIS) must be prepared to comply with NEPA and DOE's NEPA implementing regulations, 10 CFR Part 1021.

DOE and the Department intend to jointly develop one EIS that meets both agencies' environmental review requirements to minimize duplication of effort.

¹ Minnesota Rule 7850.2500, Subp. 2.

² Minnesota Statute 216E.03, Subd. 5.

Scoping Process

Commission staff and DOC-EERA staff, along with the DOE, held eight joint public information and environmental impact statement scoping meetings between July 16 and 24, 2014, across the study area.

The meetings provided the public with the opportunity to learn more about the proposed project, to provide comments on potential environmental issues associated with the project and to put forth alternative routes for consideration. A total of 46 people gave oral comments at the meetings, and their comments were transcribed by a court stenographer.³

A comment period, ending on August 15, 2014, provided the public an opportunity to submit comments to DOC-EERA/DOE staff on issues and route alternatives for consideration in the scope of the EIS. DOC-EERA and DOE received scoping comments in the form of 122 written letters, emails or website submittals from private citizens, government agencies, and nongovernmental organizations. Written public comment letters can be found in eDockets (docket No. 14-21 – Public Comments), the DOC web-site (<http://mn.gov/commerce/energyfacilities/Docket.html?id=33847>) and are also contained in whole and abridged in the *Scoping Summary Report*.⁴

The *Scoping Summary Report* describes the public scoping process for the EIS that the DOE (DOE/EIS-0499) and DOC-EERA are preparing for the GNTL project. The purpose of the *Scoping Summary Report* is to describe the scoping process; the report contains information on the manner of public notification, venues, dates and times in which the scoping meetings were held, comments received, information on the Workgroup efforts, and requested alternative route segments/alignment modifications. The *Scoping Summary Report* was released on November 13, 2014.

There were 33 alternative route segment (including five border crossing alternatives) and nine alignment modification requests received through the scoping process.

Commission Review

On December 5, 2014, EERA staff provided the Commission with a summary of the EIS scoping process.⁵ The summary discussed the route and alignment alternatives that were proposed during the scoping process and those alternatives that the DOC-EERA intended to carry forward for inclusion in the scope of the EIS. On January 6, 2015, the Commission considered what action, if any, it should take with respect to the route alternatives to be considered in the EIS.

The Commission took no action.

³ Oral Comments from Public Information and EIS Scoping Meetings, July 16-24, 2014, eDockets Number 20148-102461-01 to 20148-102461-07, [hereinafter Oral Comments].

⁴ Scoping Summary Report, November, 2014. eDockets Numbers: 201411-104621-01 to 10, 104622-01 to 09, 104623-01 to 10, 104624-01 to 08, 104625-01 to 07, and 104625-01 to 03.

⁵ Department of Commerce, Comments and Recommendations on EIS Scoping Process, December 5, 2014, eDockets Number 201412-105219-01.

HAVING REVIEWED THE MATTER, consulted with DOC-EERA staff, and in accordance with Minnesota Rule 7850.2500, I hereby make the following scoping decision:

MATTERS TO BE ADDRESSED

The issues outlined below will be analyzed in the EIS for the proposed Great Northern Transmission Line project. The EIS will describe the project and the human and environmental resources of the project area. It will provide information on the potential impacts of the project as they relate to the topics outlined in this scoping decision, including possible mitigation measures. It will identify impacts that cannot be avoided and irretrievable commitments of resources, as well as permits from other government entities that may be required for the project. The EIS will discuss the relative merits of the route alternatives studied in the EIS using the routing factors found in Minnesota Rule 7850.4100.

I. GENERAL DESCRIPTION OF THE PROJECT

- A. Project Description
- B. Project Purpose
- C. Route Description
 - 1. Route Width
 - 2. Right-of-Way
- D. Substation/Compensation Station Description
- E. Project Costs
 - Construction, Operation and Maintenance

II. REGULATORY FRAMEWORK

- A. Certificate of Need
- B. High Voltage Transmission Line Route Permit
 - Buy the Farm Provisions
- C. Environmental Review Process

III. ENGINEERING AND DESIGN

- A. Transmission Line Structures
- B. Transmission Line Conductors
- C. Substations/Compensation Station

IV. CONSTRUCTION

- A. Right-of-Way Acquisition
- B. Construction
 - 1. Transmission Line
 - 2. Substation/Compensation Station
- C. Restoration
- D. Damage Compensation
- E. Operation and Maintenance
 - Danger trees determination
 - Vegetation management
- F. Decommissioning

V. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

The EIS will include a discussion of the human and environmental resources potentially impacted by the proposed project and the route and alignment alternatives described herein (Section VI). Potential impacts, both positive and negative, of the project and each alternative will be described. Based on the impacts identified, the EIS will describe mitigation measures that could reasonably be implemented to reduce or eliminate the identified impacts. The EIS will describe any unavoidable impacts resulting from implementation of the proposed project.

- A. Environmental Setting
- B. Socioeconomics
 - Environmental Justice
- C. Human Settlements
 - 1. Noise
 - Blackberry Substation
 - 2. Aesthetics
 - Big Bog State Recreation Area
 - Itasca County Bass Lake Park
 - 3. Displacement
 - Eminent Domain
 - Balsam Bible Chapel expansion
 - 4. Property Values
 - 5. Public Services
 - a) Roads and Highways
 - MnDOT's Utility Accommodation Policy
 - b) Airports
 - c) Utilities
 - ROW Sharing/paralleling
 - d) Emergency Services
 - 6. Electronic Interference
 - a) Radio
 - b) Television
 - c) Wireless Phone/Internet Services
- D. Public Health and Safety
 - 1. Electric and Magnetic Fields
 - 2. Implantable Medical Devices
 - Cardiac Pacemakers
 - 3. Stray Voltage
 - 4. Induced Voltage
- E. Land Based Economies
 - 1. Agriculture
 - a) Compaction
 - b) Tile Damage
 - c) Aerial Spraying
 - d) GPS Systems / Real Time Kinetic Systems
 - e) Structure Foundations Obstruction

- f) Livestock (including wood bison)
- g) Crop production (including organic)
- 2. Forestry
 - Harvestable Product within ROW
- 3. Mining
 - Current and Future
- 4. Recreation and Tourism
 - Snowmobile and ATV Trails
- F. Archaeological and Historic Resources
 - Conservation Corps Camp 53
- G. Natural Environment
 - 1. Air Quality
 - Green House Gas
 - 2. Water Resources
 - a) Surface Waters and Floodplains
 - b) Groundwater
 - Wellhead Protection Areas
 - c) Wetlands
 - Type Conversion
 - 3. Soils
 - Peatland Soils
 - 4. Flora
 - Invasive Species
 - Habitat Fragmentation
 - 5. Fauna
- H. Threatened / Endangered / Rare and Unique Natural Resources
- I. Zoning and Land Use Compatibility
 - Use of Existing Rights-of-Way
- J. Cumulative Effects
- K. Adverse Impacts that Cannot be Avoided
- L. Irreversible and Irretrievable Commitments of Resources

The above outline is not intended to serve as a “Table of Contents” for the EIS document, and as such, the organization of the information and data may not be similar to that appearing in the EIS.

VI. ROUTES AND SITES TO BE EVALUATED IN THE ENVIRONMENTAL IMPACT STATEMENT

The EIS will evaluate the routes and associated facilities proposed in Minnesota Power’s HVTL route permit application – aka the Blue Route (including C-1 and C-2) and the Orange Route (including J-1 and J-2).

In addition, the following alternative route segments and alignment modifications will be evaluated in the EIS (see description below and attached maps). Alternatives are presented here in a north-to-south fashion – from the border crossing in Roseau County to the terminus at the Blackberry Substation in Itasca County.

Pine Creek Border Crossing Alternative Route Segment (Figure 1). This alternative crosses the border just west of Piney Creek, with the alternative route paralleling 320th Avenue as it runs south along the quarter-sections of Sections 27 and 34 in T164N, Range 41W and continuing through Section 3 of T163N, Range 41W where it joins Minnesota Power's proposed route.

Hwy 310 Border Crossing Alternative Route Segment (Figure 2). This alternative crosses the border east of the Sprague Creek Peatland SNA and follows State Highway 310 until it joins Minnesota Power's proposed route.

500kV Border Crossing Alternative Route Segment (Figure 3). The 500 kV Border Crossing follows the existing 500 kV transmission line from the international border until it joins Minnesota Power's proposed route.

230kV Border Crossing Alternative Route Segment (Figure 4). This alternative follows the existing 230 kV transmission line from the international border until it joins Minnesota Power's proposed route.

Roseau Lake WMA Alternative Route Segment 1 (Figure 5). This alternative follows MN-89 south, crosses MN-11, stair-steps its way south to CR-126, then continues north and east to join Minnesota Power's proposed route.

Roseau Lake WMA Alternative Route Segment 2 (Figure 6). This proposal follows MN-89 south, and then continues east on the south side of the Roseau Lake WMA to 360th Street, and east to the intersection with Minnesota Power's proposed route.

Cedar Bend WMA Alternative Route Segment (Figure 7). This alternative follows the existing 230 kV transmission line from where it intersects Minnesota Power's proposed route, and then turns southeast to continue along the existing 230kV transmission line.

Beltrami WMA Alternative Route Segment 1 North (Figure 8). This alternative crosses the existing 500 kV transmission line south of CSAH 2 and angles to the southeast but north of USFWS parcels. The alternative then follows the north side of the existing 500 kV transmission line (Minnesota Power's proposed route) until the existing 500 kV line turns to the southeast where it connects with Beltrami WMA Alternative Route Segment 1 South, described below.

Beltrami WMA Alternative Route Segment 1 South (Figure 9). This alternative extends from Beltrami WMA Alternative Route Segment 1 North where the existing 500 kV line turns to the southeast. From this point, the alternative crosses to the south side of the existing 230 kV transmission line and continues southeast to join Minnesota Power's proposed Blue Route and thereby passes to the east of USFWS parcels.

Beltrami WMA Alternative Route Segment 2 (Figure 10). This alternative diverges from Minnesota Power's proposed route that parallels the existing 500kV transmission line, goes south around USFWS parcels, then goes north to join Minnesota Power's proposed route.

Beltrami WMA Alternative Route Segment 3 (Figure 11). This alternative diverges from Minnesota Power's proposed route that parallels the existing 500 kV transmission line, goes south and east around USFWS parcels, and then joins with Minnesota Power's proposed route.

Beltrami WMA Alternative Route Segment 4 (Figure 12). This alternative diverges east from Minnesota Power's proposed route that parallels the existing 500 kV transmission line north the USFWS parcels, and connects with the Beltrami WMA Alternative Route Segment 1 on the south side of the existing 230 kV transmission line.

Beltrami WMA Alternative Route Segment 5 (Figure 13). This alternative connects Beltrami WMA Alternative Route Segments 1 and 4, which parallel the existing 230 kV transmission line, south to join Minnesota Power's proposed Blue/Orange route. This alternative retains the viability of Minnesota Power's proposed Orange Route if Beltrami WMA Alternative Route Segments 1 or 4 are selected.

Beltrami WMA Alternative Route Segment 7 (Figure 14). This alternative diverges from the proposed route to create an "L" shape around a USFWS parcel to avoid it.

Beltrami WMA Alternative Route Segment 8 (Figure 15). This alternative diverges from the proposed route to create an "L" shape around three USFWS parcels to avoid them.

Silver Creek WMA Alignment Modification (Figure 16). The modification shifts the anticipated alignment approximately 150 feet south from Minnesota Power's proposed route, creating a new ROW corridor that is separate from the existing 230 kV transmission line ROW corridor.

North Black River Alternative Route Segment (Figure 17). This alternative diverges from Minnesota Power's proposed route and continues along the existing 230 kV transmission line north and east before it joins Minnesota Power's proposed route further east.

Airstrip Alignment Modification (Figure 18). This modification is located approximately 725 feet west of Minnesota Power's proposed C2 Route Alternative. This modification increases the distance between the private airstrip and the anticipated centerline of Minnesota Power's proposed Route Alternative C2.

Mizpah Alignment Modification (Figure 19). This modification shifts the anticipated alignment further to the north from Minnesota Power's proposed route to limit ROW impacts to public lands.

Northome Alternative Route Segment (Figure 20). This alternative moves the route approximately 3,000 feet south from Minnesota Power's proposed alignment and away from the proponent's private property and from USFWS FmHA parcels.

Cutfoot Alternative Route Segment (Figure 21). This alternative moves the route to the southwest from Minnesota Power's proposed route and shifts impacts from private land onto state, county, and corporate lands.

Gravel Pit Alignment Modification (Figure 22). This modification moves the alignment approximately 750 feet to the east of Minnesota Power's proposed alignment. The move places the entire ROW onto public and corporate lands and away from the proponent's gravel pit operation.

Effie Alternative Route Segment (Figure 23a and 23b). This alternative diverges from Minnesota Power's proposed blue route, parallels the existing 230 kV and 500 kV transmission lines located east of Minnesota Power's proposed routes, and joins Minnesota Power's proposed Orange Route.

Bass Lake Alignment Modification (Figure 24). This modification moves Minnesota Power's proposed alignment approximately 750 feet southwest.

Wilson Lake Alignment Modification (Figure 25). This modification moves Minnesota Power's proposed alignment approximately 500 feet to the east.

East Bear Lake Alternative Route Segment (Figure 26). This alternative diverges from Minnesota Power's proposed route, follows the existing 230kV and 500kV transmission line for approximately 4 miles, and then joins Minnesota Power's proposed route.

Grass Lake Alignment Modification (Figure 27). The modification moves Minnesota Power's proposed alignment approximately 900 feet east onto public and corporate lands, while splitting the distance between private residences on Grass and Bray Lakes.

Dead Man's Pond Alignment Modification (Figure 28). This modification moves Minnesota Power's proposed alignment approximately 1,000 feet west across Dead Man's Pond and undeveloped land.

Dead Man's Pond Alternative Route Segment (Figure 29). This alternative moves Minnesota Power's proposed route west of Dead Man's Pond onto public and corporate land and away from the proponent's private property.

Balsam Alternative Route Segment 1 (Figure 30). This alternative diverges from Minnesota Power's proposed Yellow Route to follow the abandoned Minnesota Power 230 kV transmission line, then joins Minnesota Power's proposed Blue/Yellow Route.

Trout Lake Alignment Modification (Figure 31). This modification moves Minnesota Power's proposed alignment further east onto corporate land.

VII. IDENTIFICATION OF PERMITS

The EIS will include a list and description of permits from other government entities that may be required for the proposed project.

ISSUES OUTSIDE THE SCOPE OF THE ENVIRONMENTAL IMPACT STATEMENT

The EIS for the GNTL project will not consider the following:

- A. Any route alternative not specifically identified for study in this scoping decision.
- B. Policy issues concerning whether utilities or local governments should be liable for the cost to relocate utility poles when roadways are widened.
- C. The manner in which land owners are paid for transmission line right-of-way easements.
- D. Issues/impacts associated with the development and construction of those components of the project that are occurring within the Canadian jurisdiction and subject to the environmental review procedures of the provincial government.
- E. Of the 33 alternative route segments proposed during the scoping process 11 will not be included for further study in the EIS, they are:
 - International Boundary Alternative Route Segment (Scoping Summary Report, Appendix F, Figure 1)
 - Williams Alternative Route Segment 1 (Scoping Summary Report, Appendix F, Figure 14)
 - Williams Alternative Route Segment 2 (Scoping Summary Report, Appendix F, Figure 15)
 - Beltrami WMA Alternative Route Segment 6 (Scoping Summary Report, Appendix F, Figure 16)
 - Williams Alternative Route Segment 3 (Scoping Summary Report, Appendix F, Figure 17)
 - Highway 65 Alternative Route Segment (Scoping Summary Report, Appendix F, Figure 30)
 - Balsam Alternative Route Segment 2 (Scoping Summary Report, Appendix F, Figure 35)
 - Balsam Alternative Route Segment 3 (Scoping Summary Report, Appendix F, Figure 36)
 - East Bear Lake Extended Alternative Route Segment (Scoping Summary Report, Appendix F, Figures 39a/39b)
 - Effie Extended Alternative Route Segment (Scoping Summary Report, Appendix F, Figures 39a/38b)
 - Peatlands Alternative Route Segment (Scoping Summary Report, Appendix F, Figures 40a/40b)

SCHEDULE

The draft EIS is anticipated to be completed and available in June 2015. Public meetings and a comment period on the draft EIS will follow. Timely and substantive comments on the draft EIS will be responded to in a final EIS. Public hearings will be held in the project area after issuance of the draft EIS and are anticipated to occur in July 2015.

Signed this 8th day of January, 2015

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE



William Grant, Deputy Commissioner

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Department of Commerce
Environmental Impact Statement Scoping Decision**

Docket No. E015/TL-14-21

Dated this 9th day of January 2015

/s/Sharon Ferguson

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Burl W.	Haar	burl.haar@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota Street St. Paul, MN 551012134	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
Michael	Kaluzniak	mike.kaluzniak@state.mn.us	Public Utilities Commission	Suite 350 121 Seventh Place East St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_14-21_Official CC Service List
Ann	O'Reilly	ann.oreilly@state.mn.us	Office of Administrative Hearings	PO Box 64620 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
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Tracy	Smetana	tracy.smetana@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
William	Storm	bill.storm@state.mn.us	Department of Commerce	Room 500 85 7th Place East St. Paul, MN 551012198	Electronic Service	Yes	OFF_SL_14-21_Official CC Service List
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_14-21_Official CC Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Sarah	Beimers	sarah.beimers@mnhs.org	Minnesota Historical Society	345 Kellogg Boulevard West St. Paul, MN 55102	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Tamara	Cameron	tamara.e.cameron@usace.army.mil	U.S.Army Corps of Engineers	180 5th St # 700 Saint Paul, MN 55101	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Travis	Germundson	travis.germundson@state.mn.us		Board of Water & Soil Resources 520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Brooke	Haworth	Brooke.Haworth@state.mn.us	Department of Natural Resources	500 Lafayette Road Saint Paul, MN 55155	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Susan	Heffron	susan.heffron@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Kari	Howe	kari.howe@state.mn.us	DEED	332 Minnesota St, #E200 1ST National Bank Bldg St. Paul, MN 55101	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Ray	Kirsch	Raymond.Kirsch@state.mn.us	Department of Commerce	85 7th Place E Ste 500 St. Paul, MN 55101	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Stacy	Kotch	Stacy.Kotch@state.mn.us	MINNESOTA DEPARTMENT OF TRANSPORTATION	395 John Ireland Blvd. St. Paul, MN 55155	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Debra	Moynihan	debra.moynihan@state.mn.us	MN Department of Transportation	395 John Ireland Blvd MS 620 St. Paul, MN 55155-1899	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Bob	Patton	bob.patton@state.mn.us	MN Department of Agriculture	625 Robert St N Saint Paul, MN 55155-2538	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21

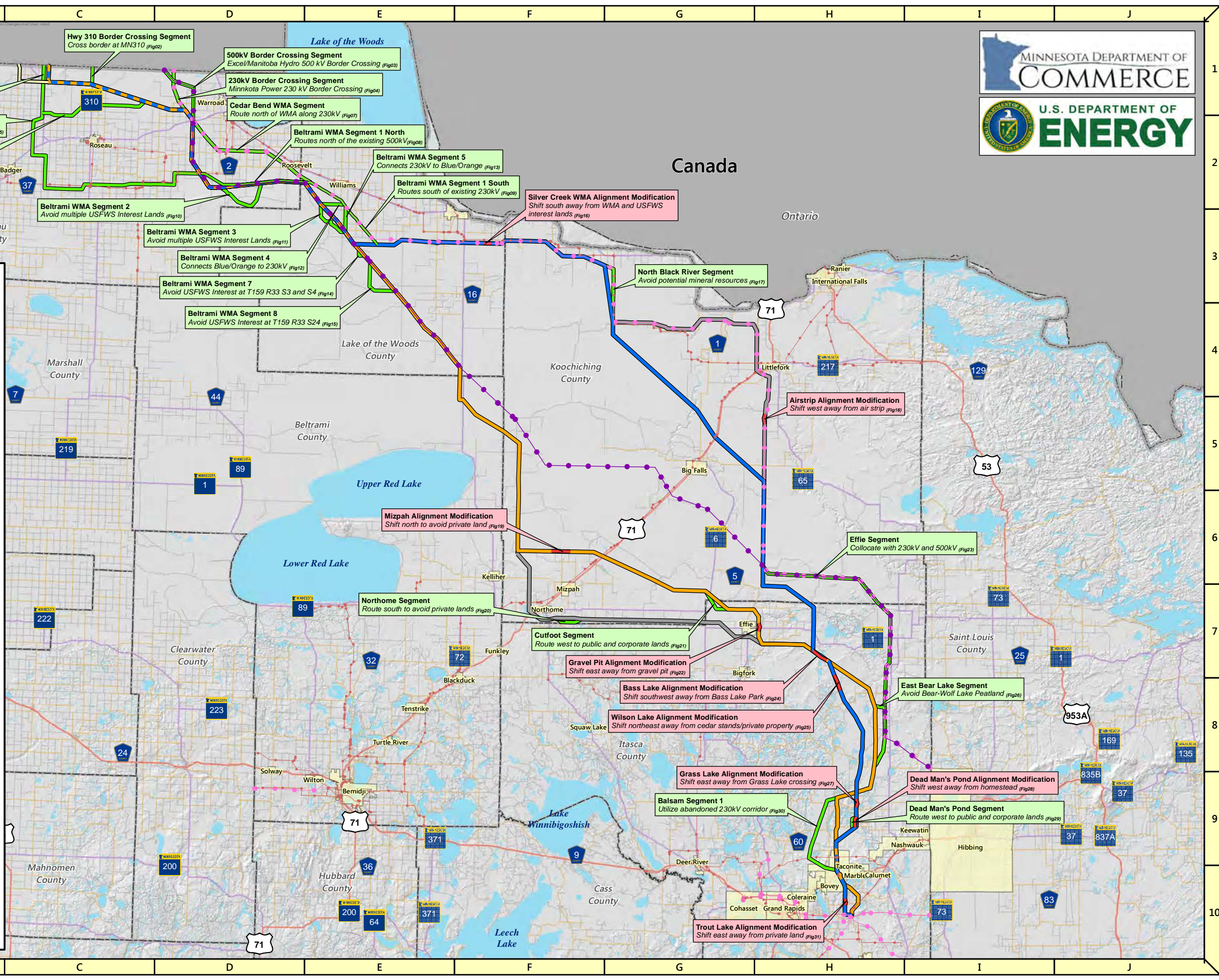
First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Margaret	Rheude	Margaret_Rheude@fws.gov	U.S. Fish and Wildlife Service	Twin Cities Ecological Services Field Office 4101 American Blvd. E. Bloomington, MN 55425	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Michele	Ross	michele.ross@state.mn.us	Department of Health	625 N Robert St Saint Paul, MN 55101	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Jamie	Schrenzel	jamie.schrenzel@state.mn.us	Minnesota Department of Natural Resources	500 Lafayette Road Saint Paul, MN 55155	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
David	Seykora	dave.seykora@state.mn.us	MN Department of Transportation	395 John Ireland Boulevard Mail Stop 130 St. Paul, MN 55155-1899	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Bruce	West	Bruce.West@state.mn.us	Department of Public Safety	Box 145 444 Cedar Street St. Paul, MN 55151	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21
Jonathan	Wolfgram	Jonathan.Wolfgram@state.mn.us	Department of Public Safety	445 Minnesota Street Suite 147 St. Paul, MN 55101-1547	Electronic Service	No	SPL_SL_14-21_Agency Reps 14-21

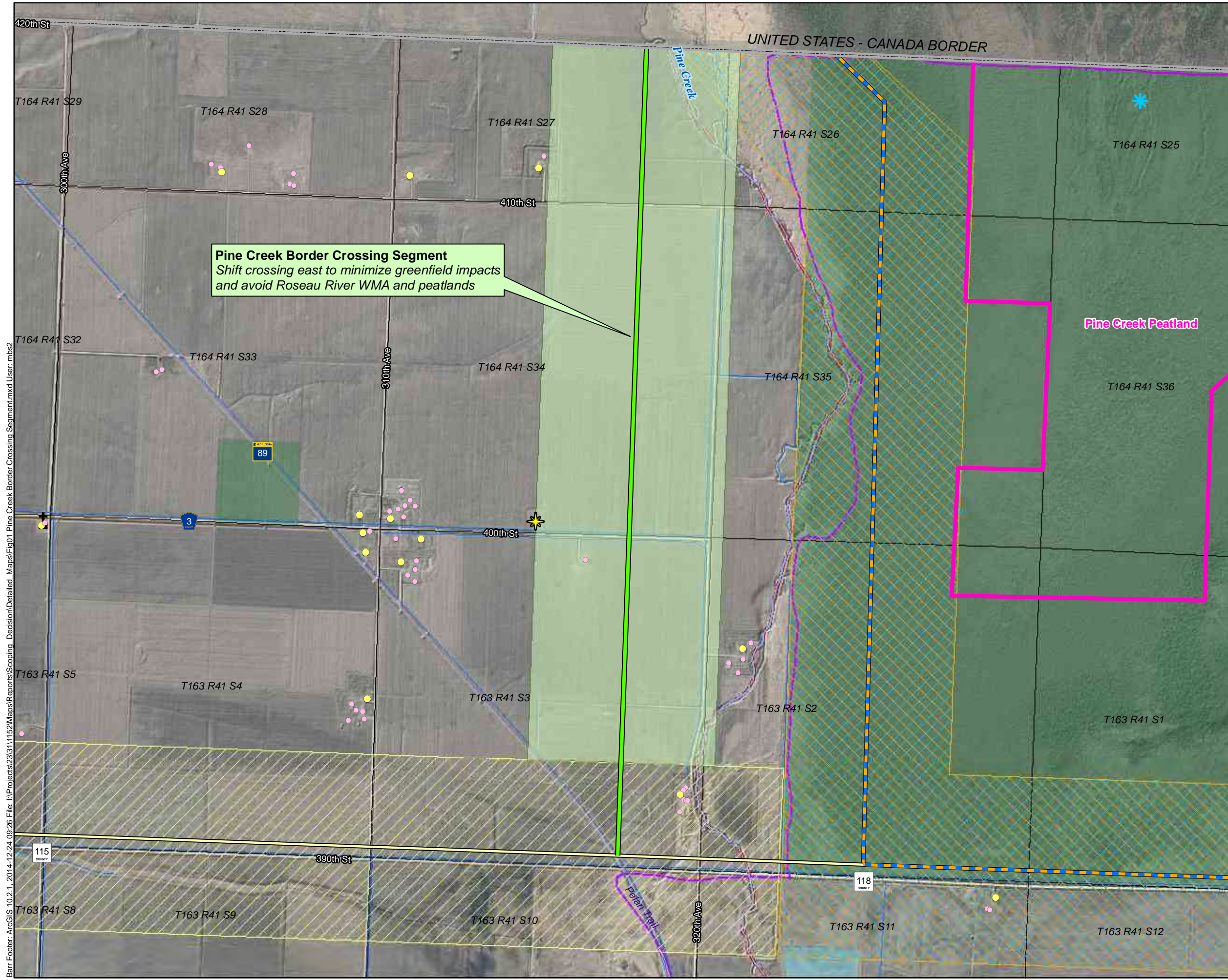
- Proposed Routes**
- Proposed Blue Route
 - Proposed Orange Route
 - Proposed Blue/Orange Shared Route
 - Proposed Alternative Route
 - Originally Proposed Route
- Scoping Process**
- Alignment Modification
 - Alternative Route Segment
- Existing Transmission Lines**
- 69 or 115 kV
 - 230 kV
 - 500 kV
- Streets and Highways**
- US Highway
 - State Trunk Highway
 - County State Aid Highway
 - Local Road
 - Municipal Boundary
 - County Boundary



Figure 0

ALTERNATIVE ROUTE SEGMENTS AND ALIGNMENT MODIFICATIONS OVERVIEW
Great Northern Transmission Line
Environmental Impact Statement
Scoping Decision





Pine Creek Border Crossing Segment
 Shift crossing east to minimize greenfield impacts
 and avoid Roseau River WMA and peatlands

- Residence
- Non-Residential Structure
- ✝ Church
- ✳ Cemetery
- ✳ Calcareous Fen
- Snowmobile Trail
- PWI Watercourse
- ⊕ Scientific and Natural Area
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue/Orange Shared Route
- Originally Proposed Route
- Proposed Blue Route
- Proposed Orange Route
- Originally Proposed Route

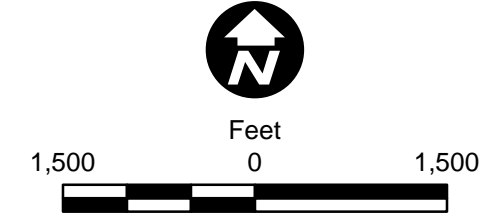
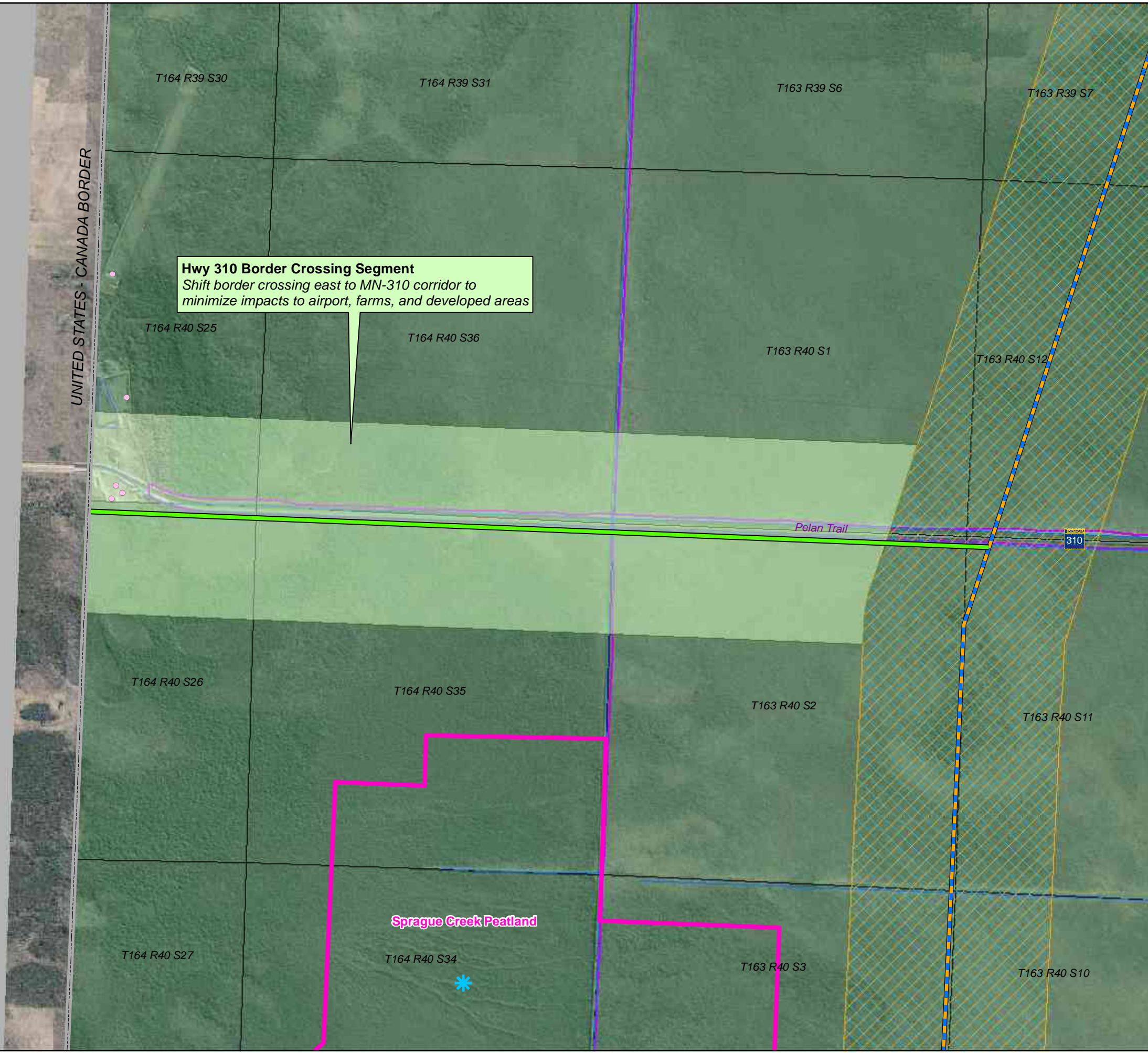


Figure 1
 (Overview Ref. C-1)
PINE CREEK BORDER CROSSING SEGMENT
 Great Northern Transmission Line Scoping Decision

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Bar: Footer: ArcGIS 10.2.1, 2014-12-12 10:15 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig02 Hwy 310 Border Crossing Segment.mxd User: mbs2



Hwy 310 Border Crossing Segment
 Shift border crossing east to MN-310 corridor to minimize impacts to airport, farms, and developed areas

- Non-Residential Structure
- ★ Calcareous Fen
- ∩ Snowmobile Trail
- ⬡ Scientific and Natural Area
- Non-Private Land Ownership (Assumed)
- State Land
- Scoping Process
- ∩ Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- ∩ Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route

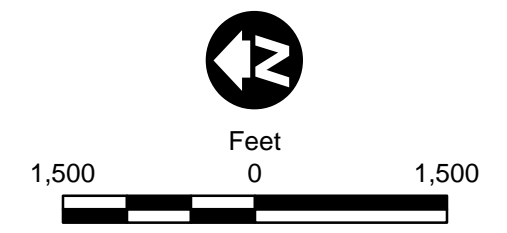
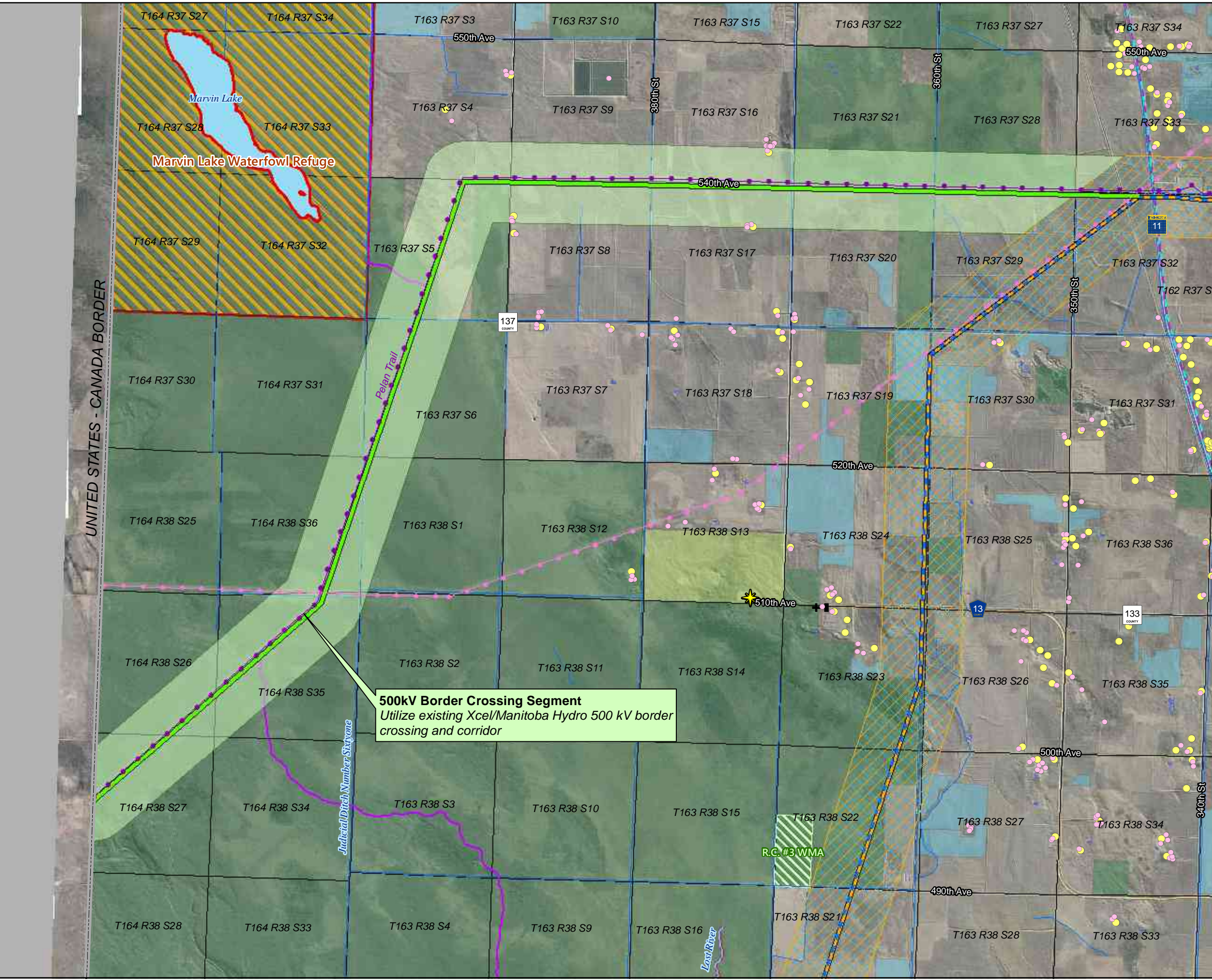


Figure 2
 (Overview Ref. C-1)
HWY 310 BORDER CROSSING SEGMENT
 Great Northern Transmission Line Scoping Decision



Barri Footer: ArcGIS 10.2.1, 2014-12-24 09:33 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig03 500kV Border Crossing Segment.mxd User: mbs2



- Residence
- Non-Residential Structure
- Church
- Cemetery
- Snowmobile Trail
- Scenic Byway
- PWI Watercourse
- PWI Waterbody
- State Game Refuge
- Wildlife Management Area
- Land Ownership (Assumed)
 - County Land
 - Other Public Land
 - Corporate Land
 - State Land
- Existing Transmission Lines
 - 230 kV
 - 500 kV
- Scoping Process
 - Alternative Route Segment Alignment
 - Alternative Route Segment
- Proposed Routes
 - Proposed Blue/Orange Shared Route
 - Proposed Blue Route
 - Proposed Orange Route

500kV Border Crossing Segment
Utilize existing Xcel/Manitoba Hydro 500 kV border crossing and corridor

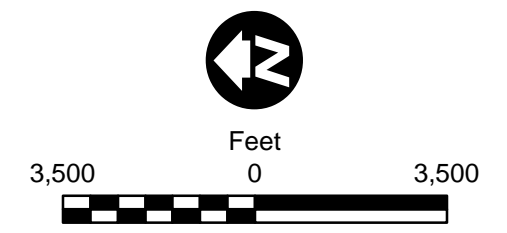
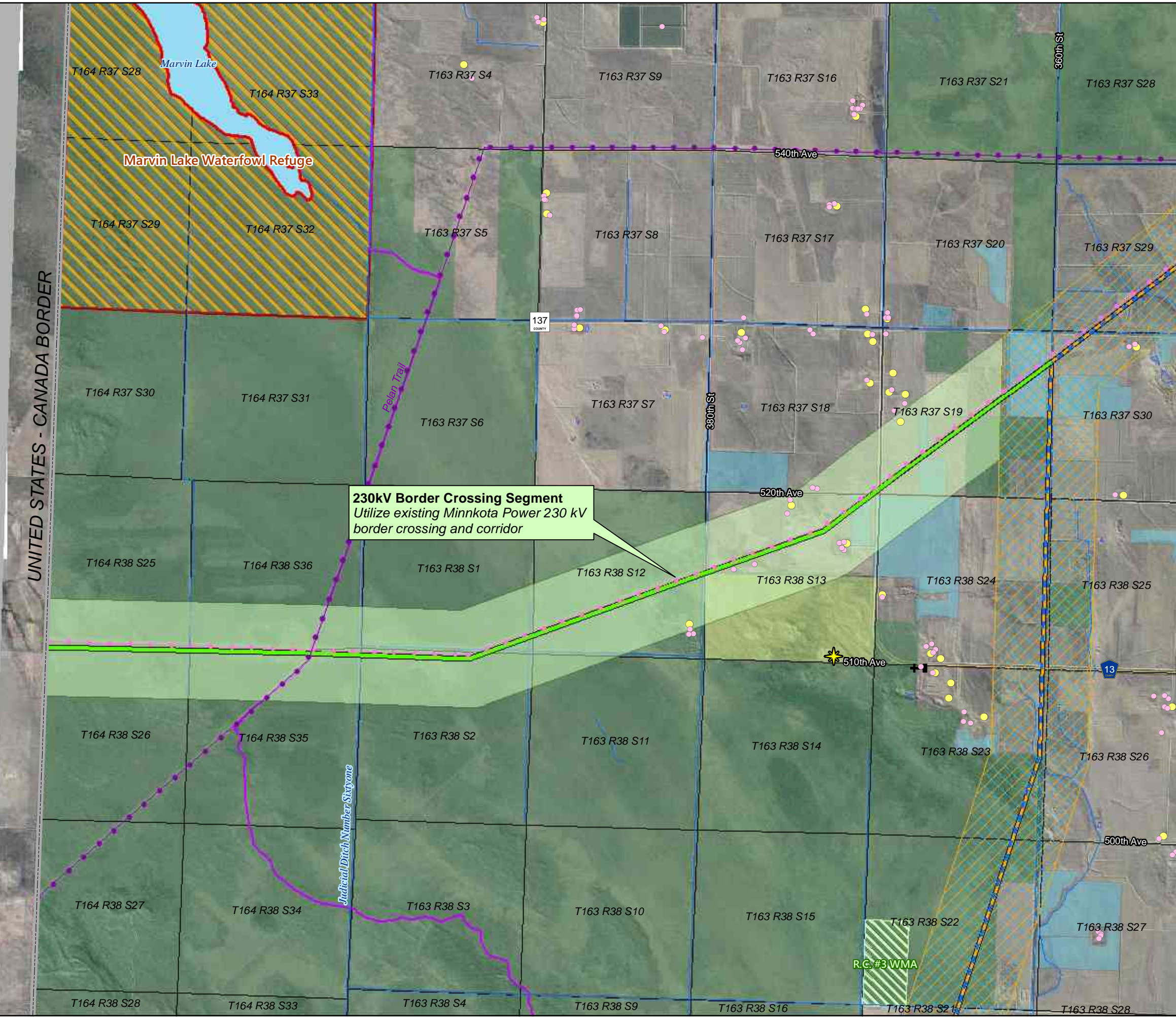


Figure 3
(Overview Ref. D-1)
500kV BORDER CROSSING SEGMENT
Great Northern Transmission Line Scoping Decision



Bar: Footer: ArcGIS 10.2.1, 2014-12-24 09:36 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig04 230kV Border Crossing Segment.mxd User: mbs2



- Residence
- Non-Residential Structure
- ✙ Church
- ✙ Cemetery
- Snowmobile Trail
- PWI Waterbody
- State Game Refuge
- Wildlife Management Area
- Land Ownership (Assumed)
- County Land
- Other Public Land
- Corporate Land
- State Land
- Existing Transmission Lines
- 230 kV
- 500 kV
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route

230kV Border Crossing Segment
 Utilize existing Minnkota Power 230 kV border crossing and corridor

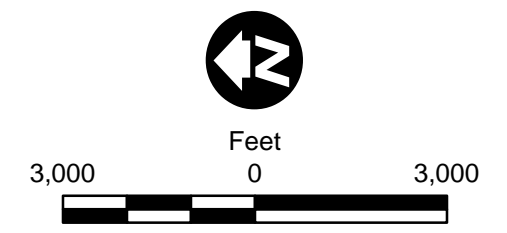
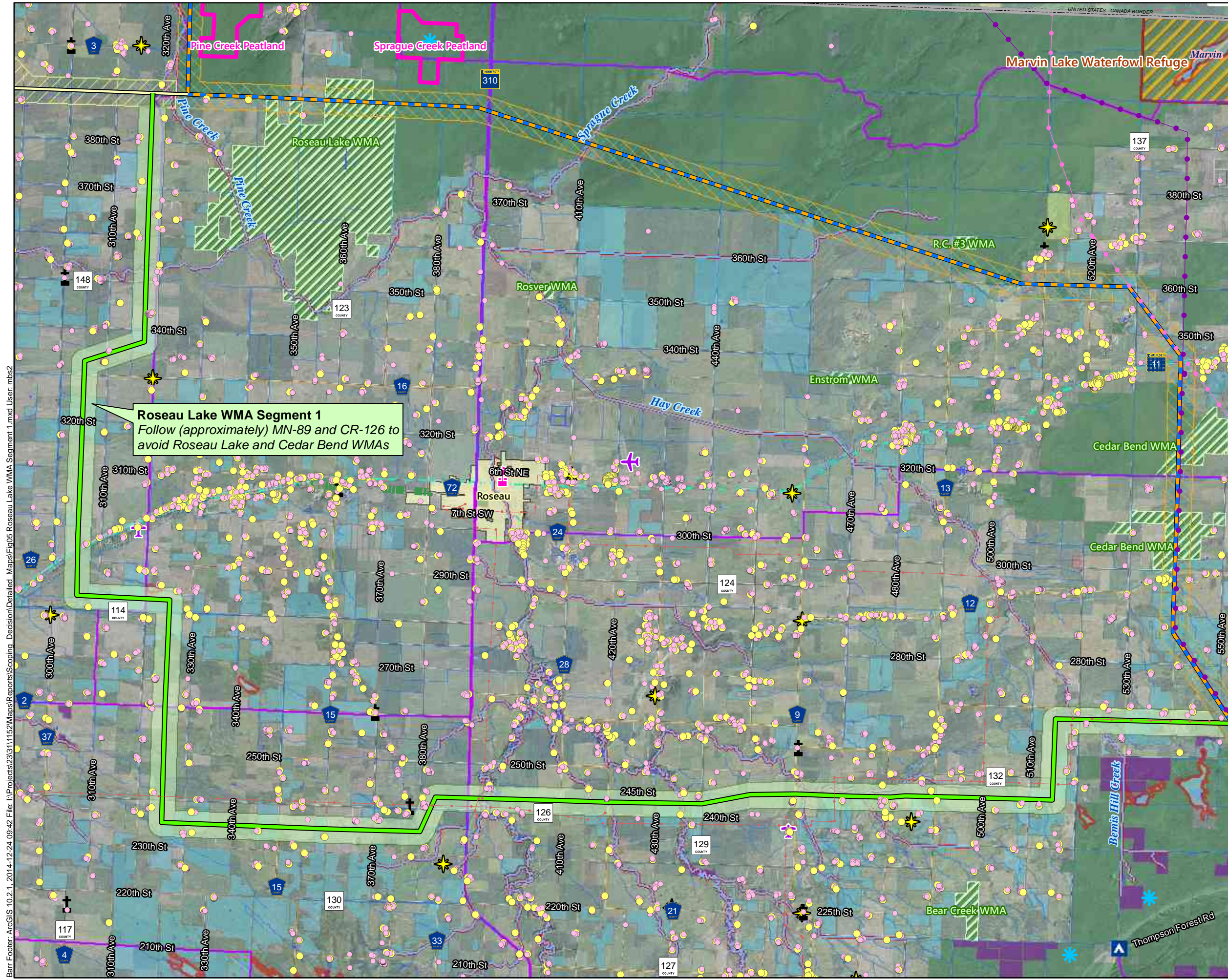


Figure 4
 (Overview Ref. D-1)
230kV BORDER CROSSING SEGMENT
 Great Northern Transmission Line Scoping Decision



- Residence
- Non-Residential Structure
- ✈ Airstrip
- Scenic Byway
- ~ PWI Watercourse
- ~ PWI Waterbody
- ✳ Scientific and Natural Area
- Wildlife Management Area
- Non-Private Land Ownership (Assumed)**
- County Land
- Other Public Land
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Existing Transmission Lines**
- 69 or 115 kV
- 230 kV
- 500 kV
- Scoping Process**
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes**
- Proposed Blue/Orange Shared Route
- Originally Proposed Route
- Proposed Blue Route
- Proposed Orange Route
- Originally Proposed Route

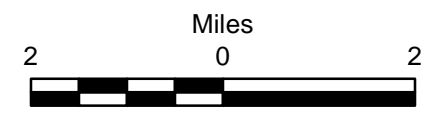
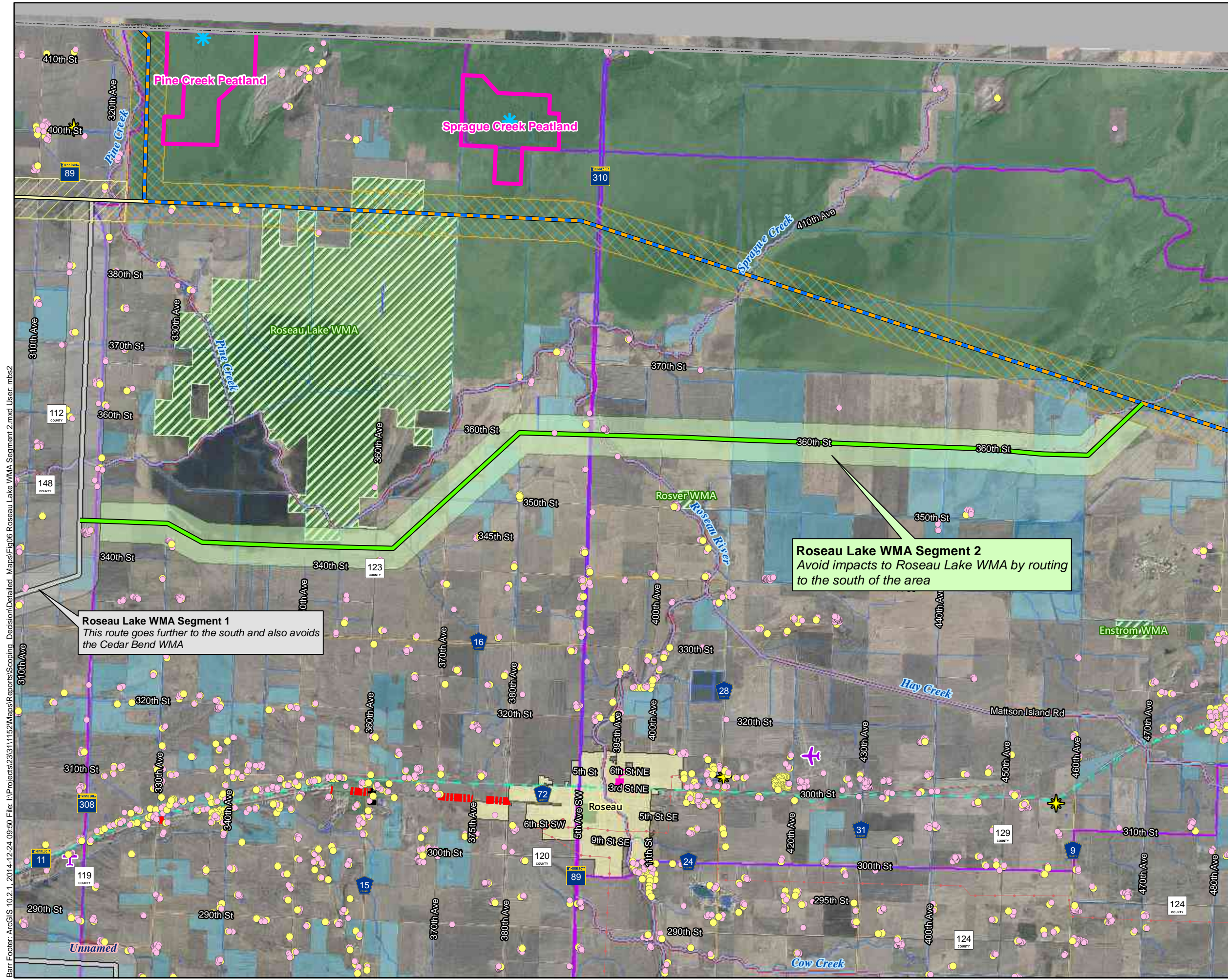


Figure 5
(Overview Ref. C-2)
ROSEAU LAKE WMA SEGMENT 1
Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 09:42 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig05 Roseau Lake WMA Segment 1.mxd User: mbs2



- Residence
- Non-Residential Structure
- ✎ School
- ✎ Church
- ✎ Cemetery
- ✎ Calcareous Fen
- ✎ Airstrip
- ✎ Snowmobile Trail
- Scenic Byway
- ▬▬▬▬ Railroad ROW Prairie
- ~ PWI Watercourse
- PWI Waterbody
- ✎ Scientific and Natural Area
- ▨ Wildlife Management Area
- Non-Private Land Ownership (Assumed)
- ▨ Other Public Land
- ▨ Corporate Land
- ▨ State Land
- Existing Transmission Lines
- ~ 69 or 115 kV
- Scoping Process
- ▬▬▬▬ Alternative Route Segment Alignment
- ▨ Alternative Route Segment
- Proposed Routes
- ▬▬▬▬ Proposed Blue/Orange Shared Route
- ▬▬▬▬ Originally Proposed Route
- ▬▬▬▬ Proposed Blue Route
- ▬▬▬▬ Proposed Orange Route
- ▬▬▬▬ Originally Proposed Route

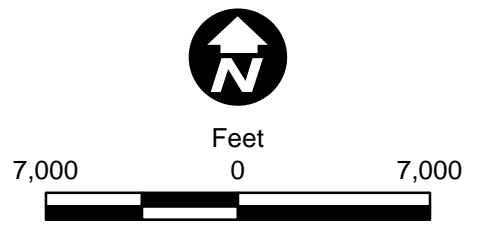
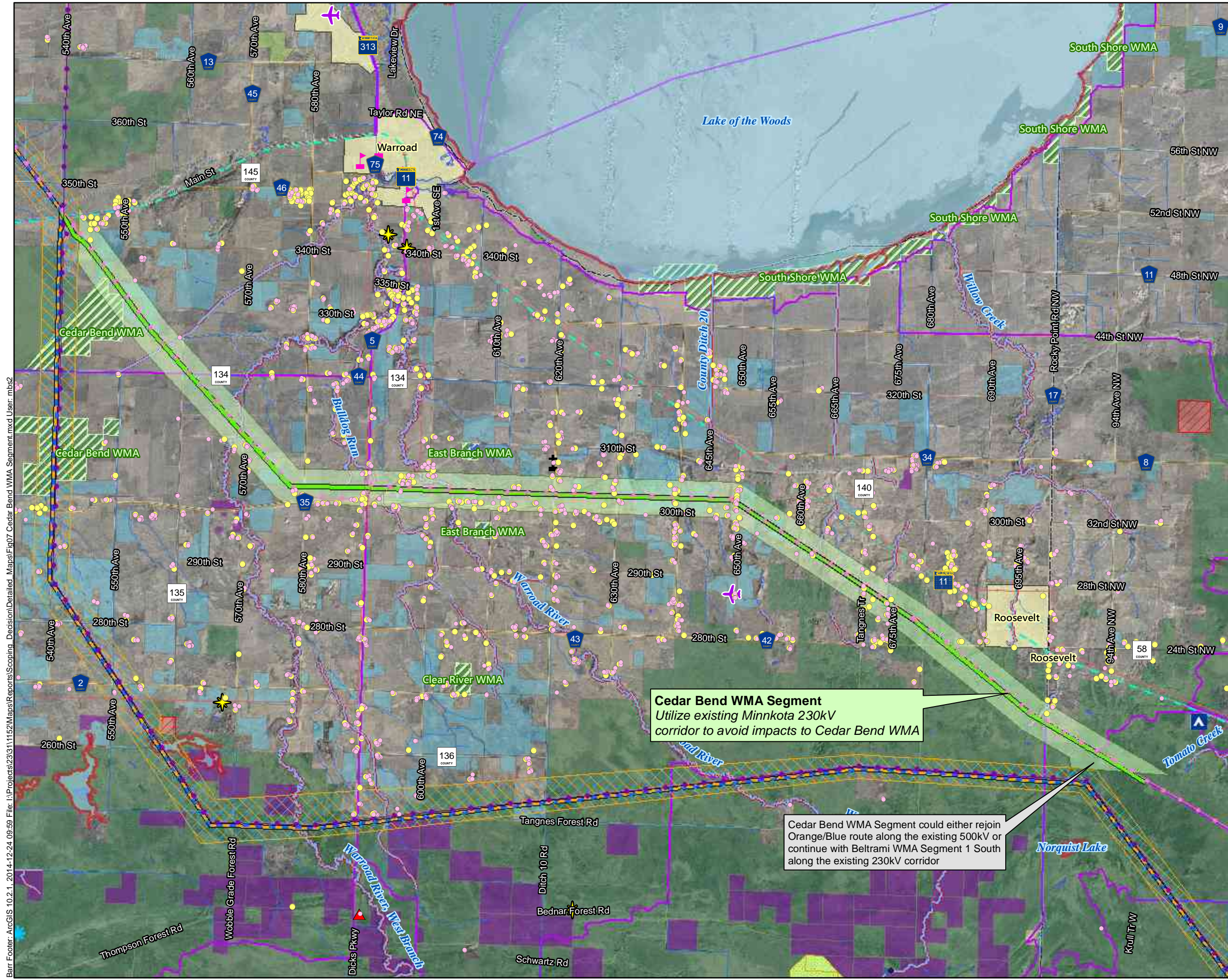


Figure 6
 (Overview Ref. C-1)
ROSEAU LAKE WMA SEGMENT 2
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24 09:50 File: I:\Projects\2311152\MapReports\Scoping_Detailed_Maps\Fig06 Roseau Lake WMA Segment 2.mxd User: mbs2



- Residence
- Non-Residential Structure
- ✎ School
- ✎ Church
- ✎ Airport
- ▲ Fire Tower
- ▲ State Forest Campground
- ✎ Snowmobile Trail
- - - Scenic Byway
- ~ PWI Watercourse
- ▨ Wildlife Management Area
- Land Ownership (Assumed)
- County Land
- Federal Land
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Existing Transmission Lines
- 69 or 115 kV
- 230 kV
- 500 kV
- Scoping Process
- ▬ Alternative Route Segment Alignment
- ▬ Alternative Route Segment
- Proposed Routes
- ▬ Proposed Blue/Orange Shared Route
- ▬ Proposed Blue Route
- ▬ Proposed Orange Route

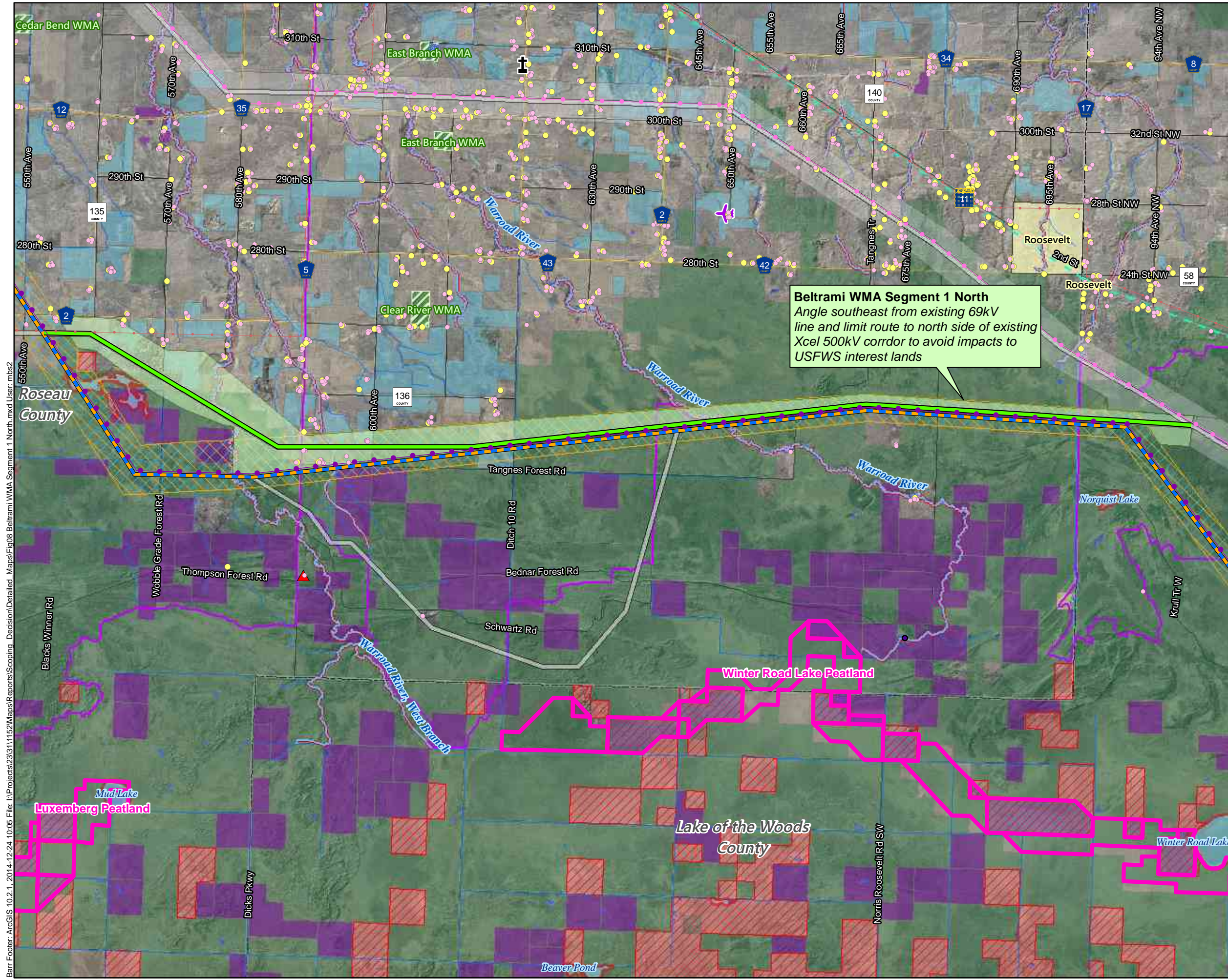
Cedar Bend WMA Segment
Utilize existing Minnkota 230kV corridor to avoid impacts to Cedar Bend WMA

Cedar Bend WMA Segment could either rejoin Orange/Blue route along the existing 500kV or continue with Beltrami WMA Segment 1 South along the existing 230kV corridor




Figure 7
(Overview Ref. D-2)
CEDAR BEND WMA SEGMENT
Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24 09:59 File: I:\Projects\231311152\Maps\Reports\Scoping_Detailed\Map\Fig07 Cedar Bend WMA Segment.mxd User: mbsz



- Residence
- Non-Residential Structure
- † Church
- ▲ Fire Tower
- Snowmobile Trail
- - - Scenic Byway
- ~ PWI Watercourse
- PWI Waterbody
- Scientific and Natural Area
- ▨ Wildlife Management Area
- Non-Private Land Ownership (Assumed)**
- County Land
- Federal Land
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Indian Reservation
- Existing Transmission Lines**
- 69 or 115 kV
- 230 kV
- 500 kV
- Scoping Process**
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes**
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route



Feet

7,000 0 7,000


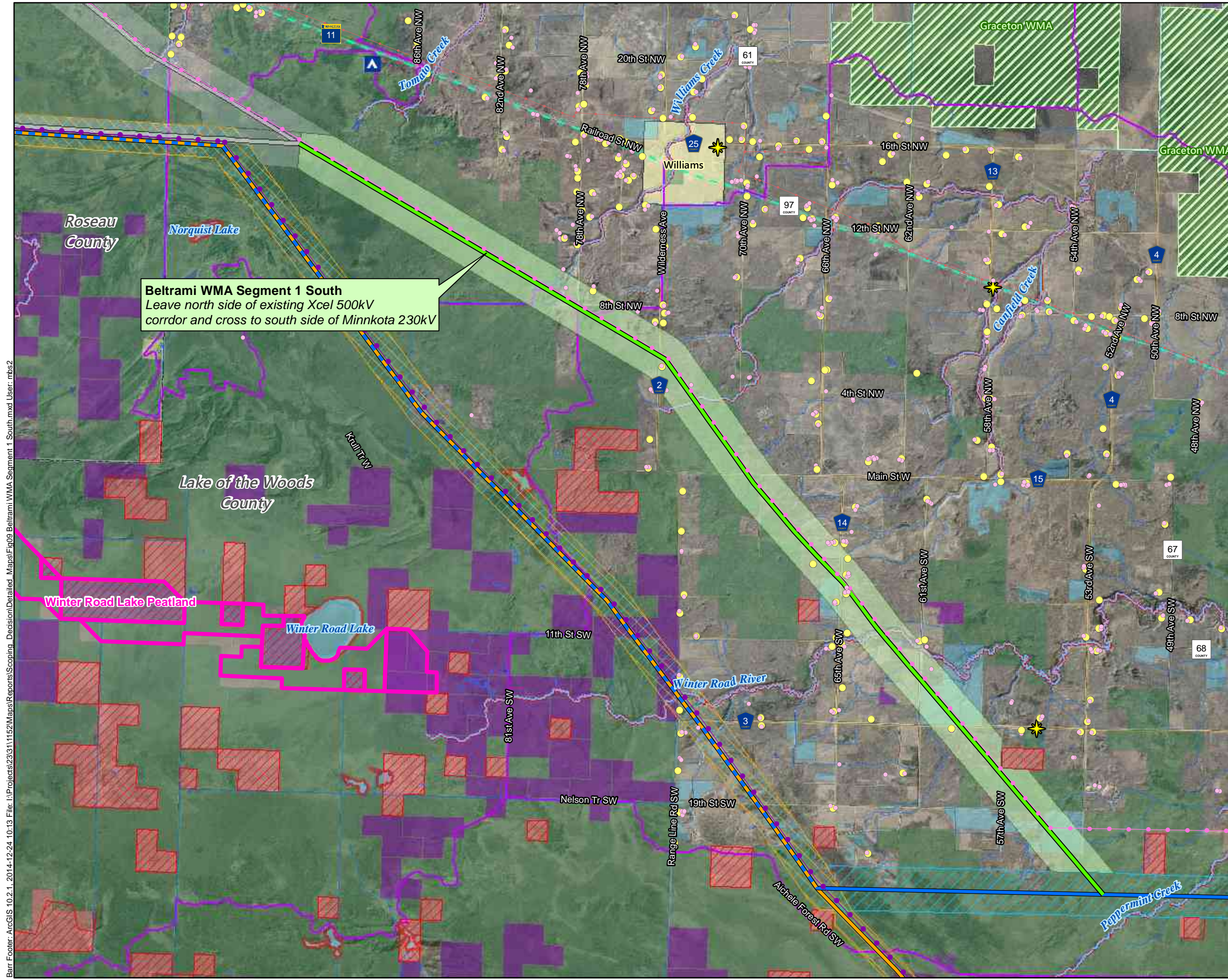


Figure 8
 (Overview Ref. D-2)
BELTRAMI WMA SEGMENT 1 NORTH
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 10:05 File: I:\Projects\231311152\MapReports\Scoping_Detailed\Map\Fig08 Beltrami WMA Segment 1 North.mxd User: mbs2



Beltrami WMA Segment 1 South
 Leave north side of existing Xcel 500kV
 corridor and cross to south side of Minnkota 230kV

- Residence
- Non-Residential Structure
- ✦ Cemetery
- ~ PWI Watercourse
- ◊ PWI Waterbody
- ◊ Scientific and Natural Area
- ▨ Wildlife Management Area
- Non-Private Land Ownership (Assumed)**
- County Land
- Federal Land
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- ▨ Indian Reservation
- Existing Transmission Lines**
- ~ 69 or 115 kV
- ~ 230 kV
- ~ 500 kV
- Scoping Process**
- ▬ Alternative Route Segment Alignment
- ▬ Alternative Route Segment
- Proposed Routes**
- ▬ Proposed Blue Route
- ▬ Proposed Orange Route
- ▬ Proposed Blue/Orange Shared Route
- ▬ Proposed Blue Route
- ▬ Proposed Orange Route

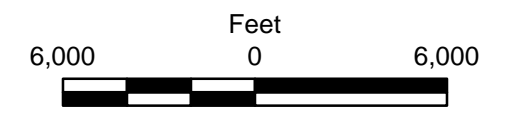
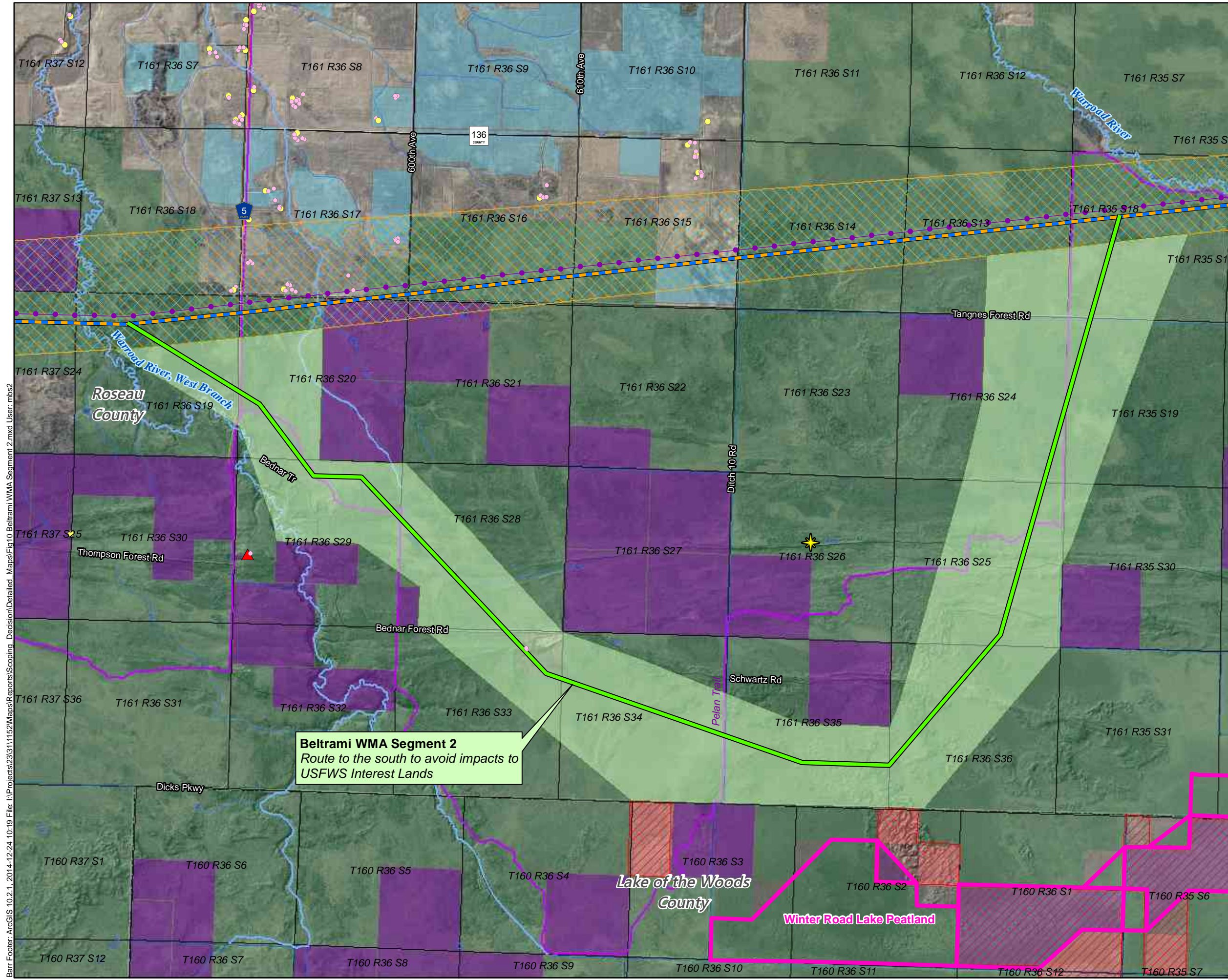


Figure 9

(Overview Ref. E-3)

BELTRAMI WMA SEGMENT 1 SOUTH
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24 10:13 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig09 Beltrami WMA Segment 1 South.mxd User: mbs2



- Residence
- Non-Residential Structure
- ▲ Fire Tower
- ✦ Cemetery
- ~ PWI Watercourse
- ⊕ Scientific and Natural Area
- Non-Private Land Ownership (Assumed)
 - Federal Land
 - Corporate Land
 - State Land
 - Tribal Land
 - USFWS Interest Lands
 - Indian Reservation
- Existing Transmission Lines
 - 500 kV
- Scoping Process
 - Alternative Route Segment Alignment
 - Alternative Route Segment
- Proposed Routes
 - Proposed Blue/Orange Shared Route
 - Proposed Blue Route
 - Proposed Orange Route

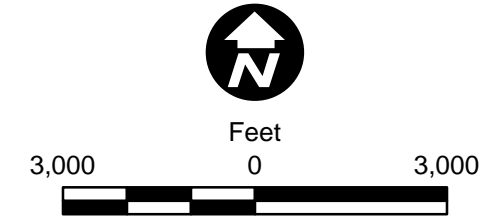
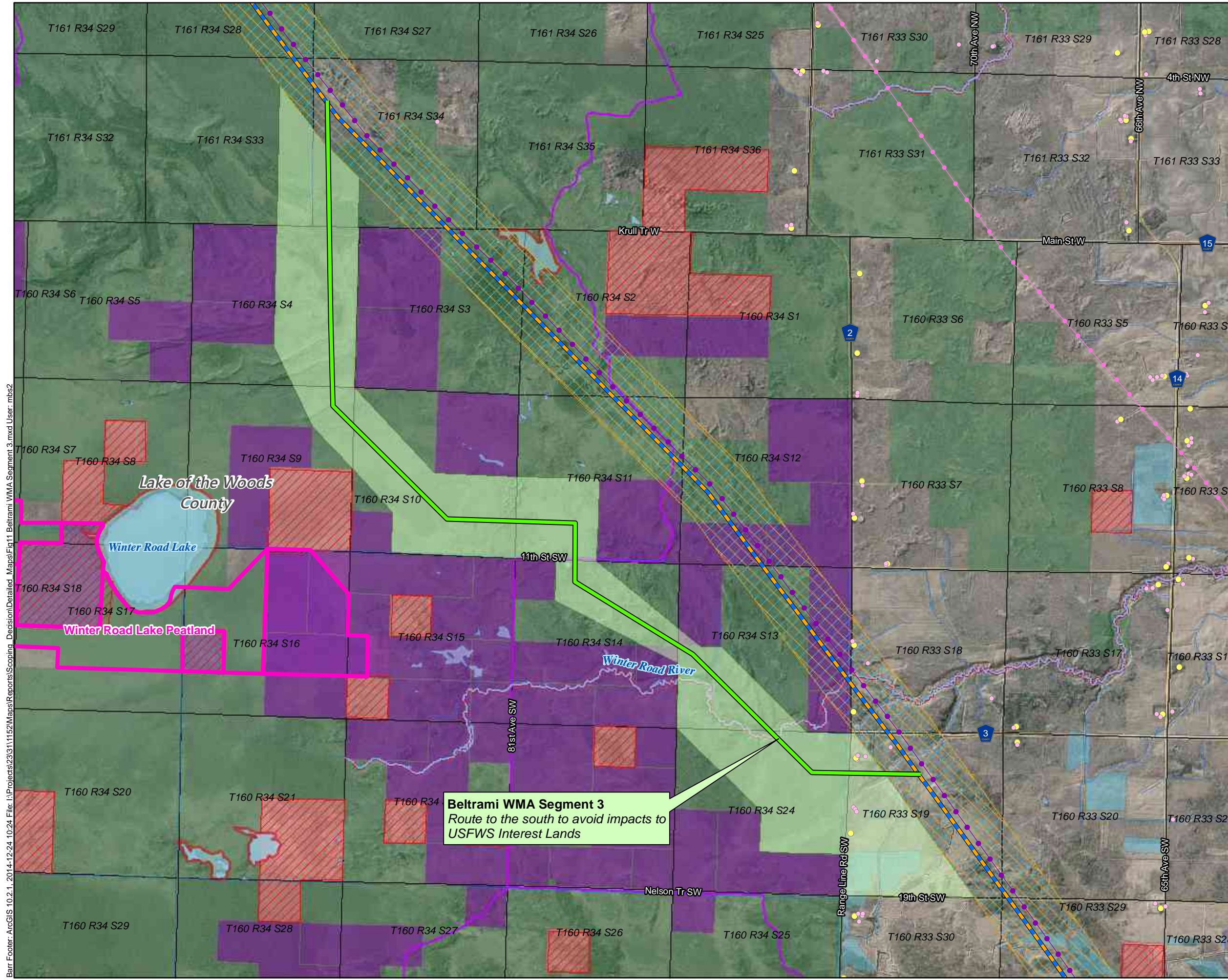
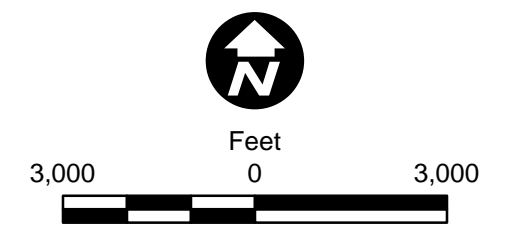


Figure 10
 (Overview Ref. D-2)
BELTRAMI WMA SEGMENT 2
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24, 10:19 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig10 Beltrami WMA Segment 2.mxd User: mbs2



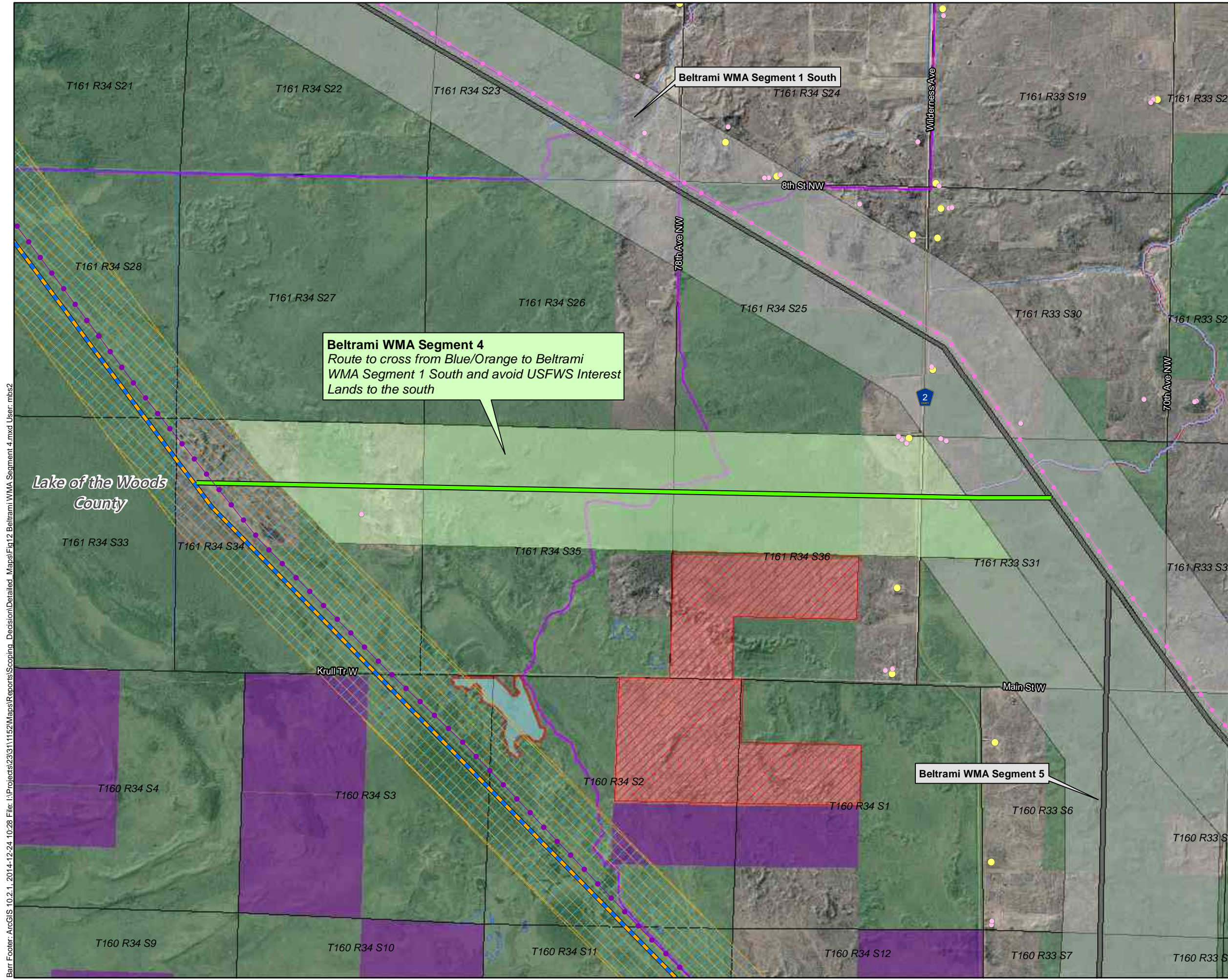
- Residence
- Non-Residential Structure
- ~ PWI Watercourse
- ~ PWI Waterbody
- ⊕ Scientific and Natural Area
- Non-Private Land Ownership (Assumed)**
- Federal Land
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Indian Reservation
- Existing Transmission Lines**
- 230 kV
- 500 kV
- Scoping Process**
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes**
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route



Beltrami WMA Segment 3
Route to the south to avoid impacts to USFWS Interest Lands

Figure 11
(Overview Ref. E-3)
BELTRAMI WMA SEGMENT 3
Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 10:24 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig11 Beltrami WMA Segment 3.mxd User: mbs2



- Residence
- Non-Residential Structure
- ~ PWI Watercourse
- ~ PWI Waterbody
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Indian Reservation
- Existing Transmission Lines
- ~ 230 kV
- ~ 500 kV
- Scoping Process
- ~ Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route

Beltrami WMA Segment 4
Route to cross from Blue/Orange to Beltrami WMA Segment 1 South and avoid USFWS Interest Lands to the south

Beltrami WMA Segment 1 South

Beltrami WMA Segment 5

Lake of the Woods
County

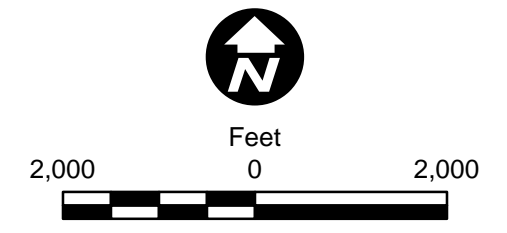
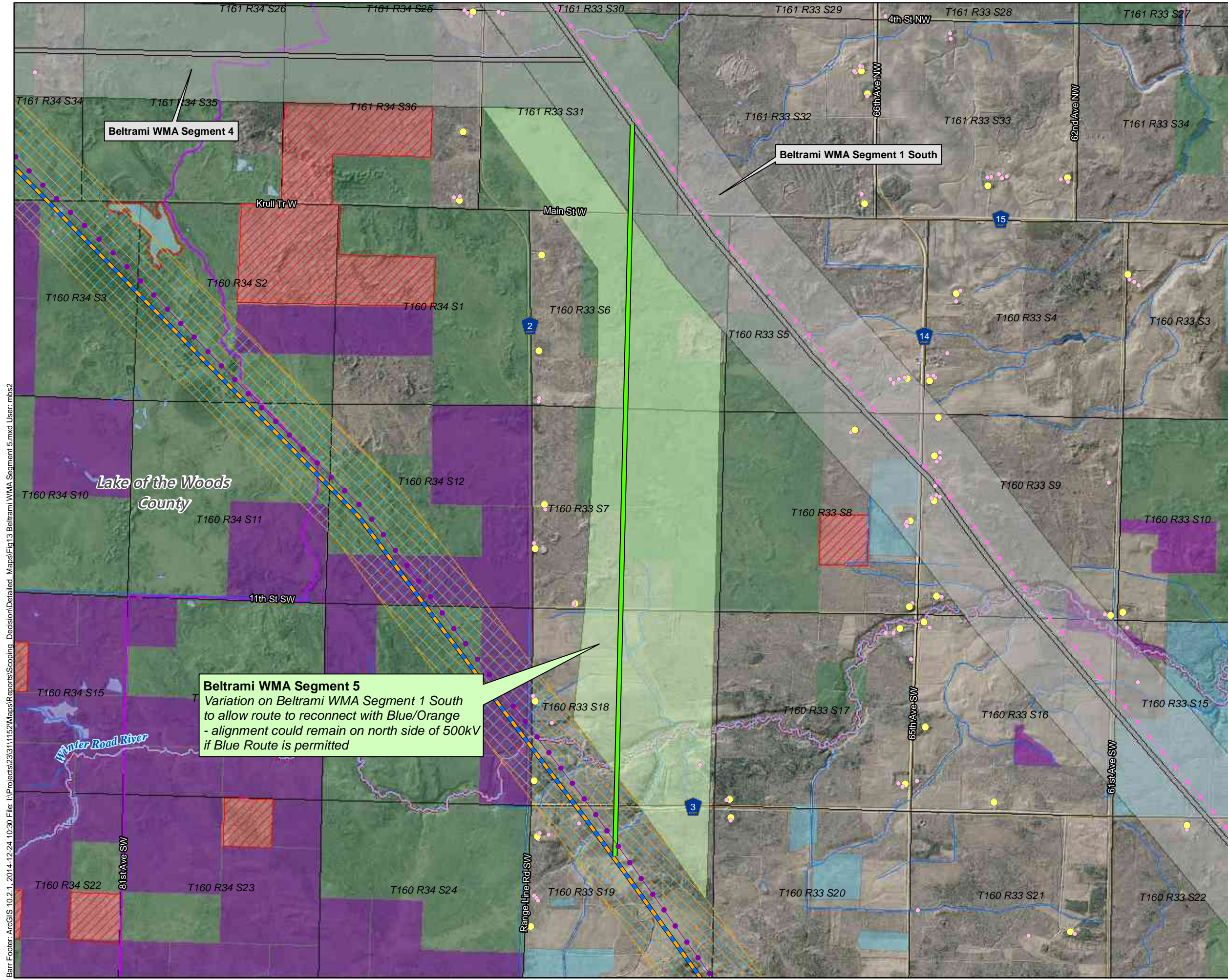


Figure 12
(Overview Ref. E-3)
BELTRAMI WMA SEGMENT 4
Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24 10:28 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig12 Beltrami WMA Segment 4.mxd User: mbs2



- Residence
- Non-Residential Structure
- ~ PWI Watercourse
- ⊡ PWI Waterbody
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Tribal Land
- USFWS Interest Lands
- Indian Reservation
- Existing Transmission Lines
- 230 kV
- 500 kV
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route

Beltrami WMA Segment 5
 Variation on Beltrami WMA Segment 1 South to allow route to reconnect with Blue/Orange - alignment could remain on north side of 500kV if Blue Route is permitted

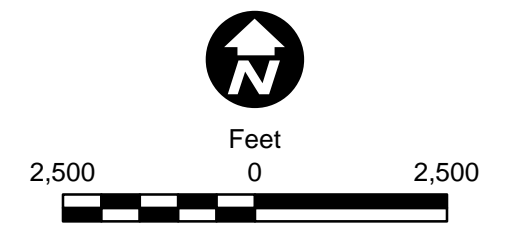
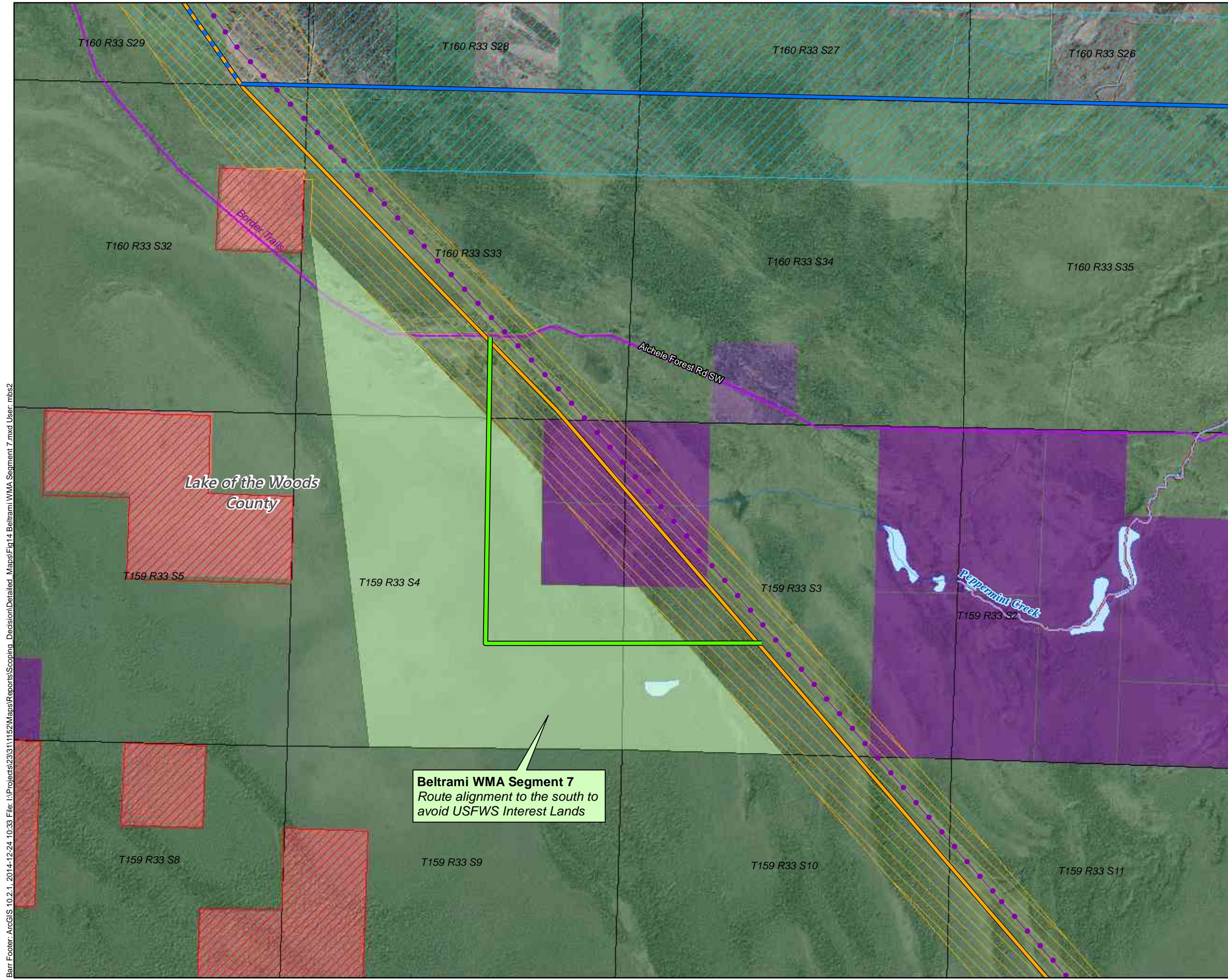
















Figure 13
 (Overview Ref. E-3)
BELTRAMI WMA SEGMENT 5
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24, 10:30 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig13 Beltrami WMA Segment 5.mxd User: mbs2



-  PWI Watercourse
- Non-Private Land Ownership (Assumed)**
-  Federal Land
-  State Land
-  Tribal Land
-  USFWS Interest Lands
-  Indian Reservation
- Existing Transmission Lines**
-  500 kV
- Scoping Process**
-  Alternative Route Segment Alignment
-  Alternative Route Segment
- Proposed Routes**
-  Proposed Blue Route
-  Proposed Orange Route
-  Proposed Blue/Orange Shared Route
-  Proposed Blue Route
-  Proposed Orange Route

Bart Footer: ArcGIS 10.2.1, 2014-12-24 10:33 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig14 Beltrami WMA Segment 7.mxd User: mbs2

Beltrami WMA Segment 7
Route alignment to the south to avoid USFWS Interest Lands

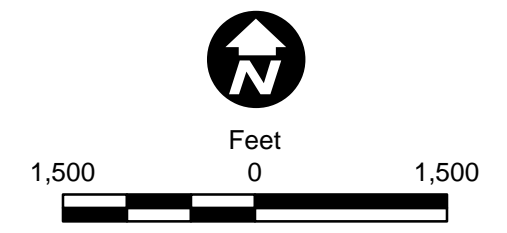
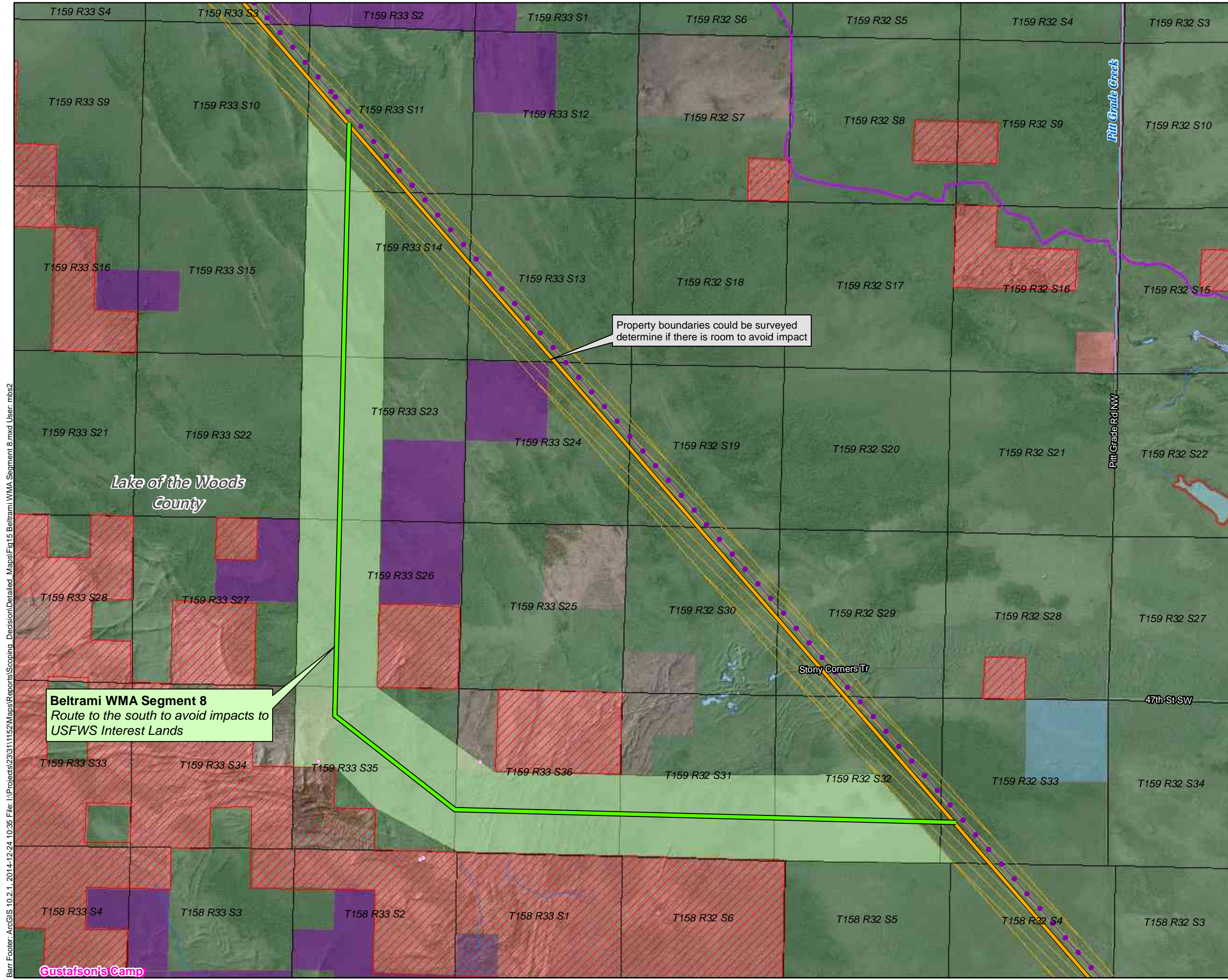


Figure 14
(Overview Ref. E-3)
BELTRAMI WMA SEGMENT 7
Great Northern Transmission Line Scoping Decision



- Non-Residential Structure
- PWI Watercourse
- PWI Waterbody
- Scientific and Natural Area
- Non-Private Land Ownership (Assumed)
 - Federal Land
 - Corporate Land
 - State Land
 - Tribal Land
 - USFWS Interest Lands
 - Indian Reservation
- Existing Transmission Lines
 - 500 kV
- Scoping Process
 - Alternative Route Segment Alignment
 - Alternative Route Segment
- Proposed Routes
 - Proposed Orange Route
 - Proposed Orange Route

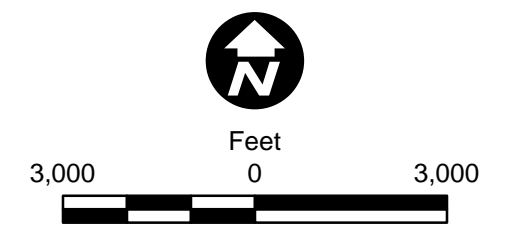
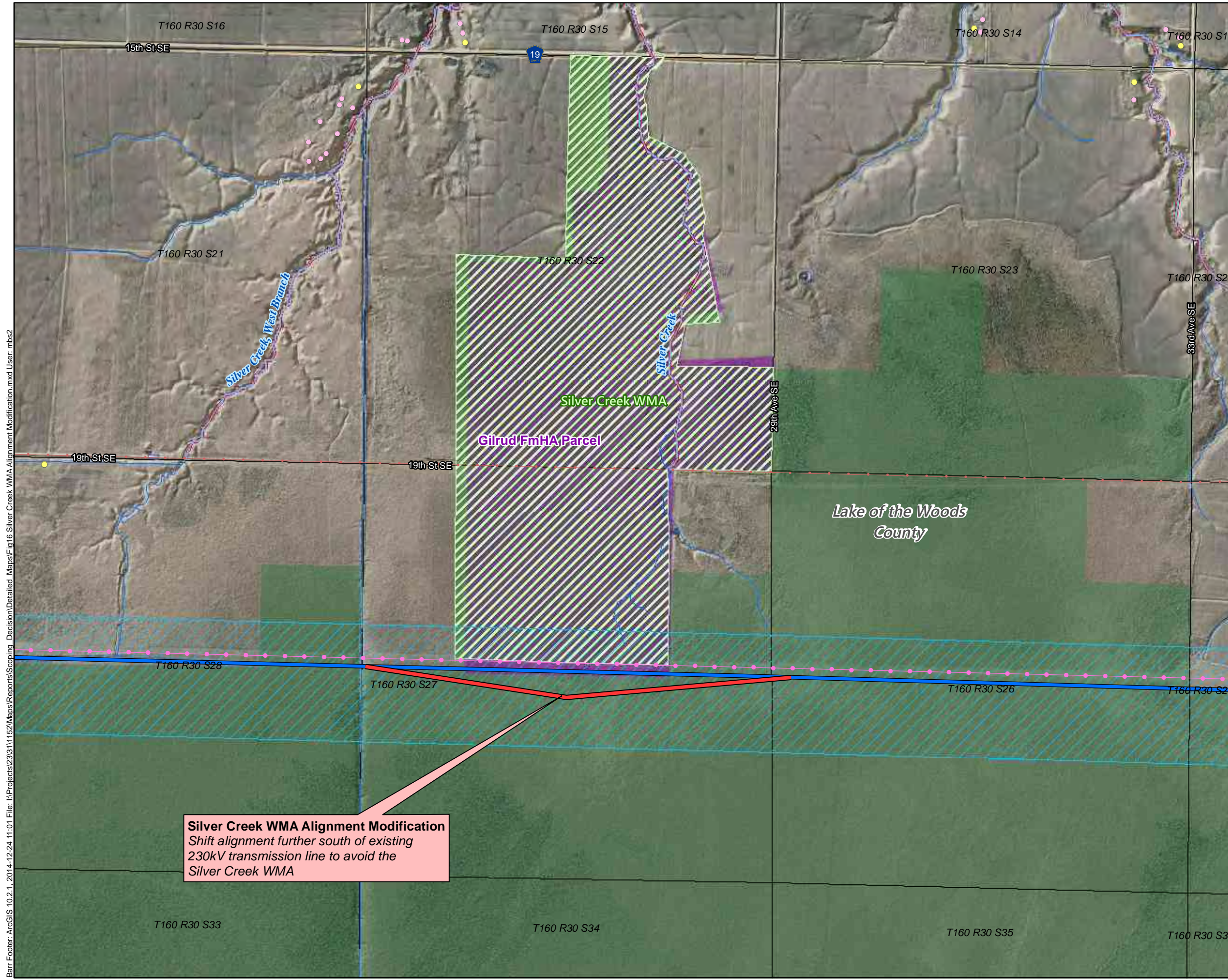


Figure 15
 (Overview Ref. E-3)
BELTRAMI WMA SEGMENT 8
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24, 10:35 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig15 Beltrami WMA Segment 8.mxd User: mbs2



- Residence
- Non-Residential Structure
- ~ PWI Watercourse
- Wildlife Management Area
- Non-Private Land Ownership (Assumed)
- State Land
- USFWS Interest Lands
- Existing Transmission Lines
- ~ 69 or 115 kV
- ~ 230 kV
- Scoping Process
- ~ Alignment Modification
- Proposed Routes
- ~ Proposed Blue Route
- Proposed Blue Route

Silver Creek WMA Alignment Modification
 Shift alignment further south of existing
 230kV transmission line to avoid the
 Silver Creek WMA

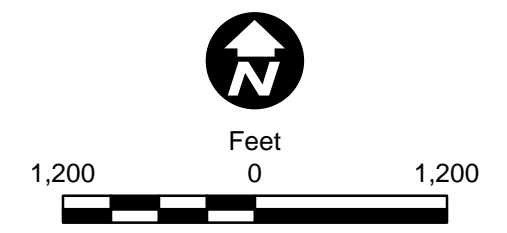
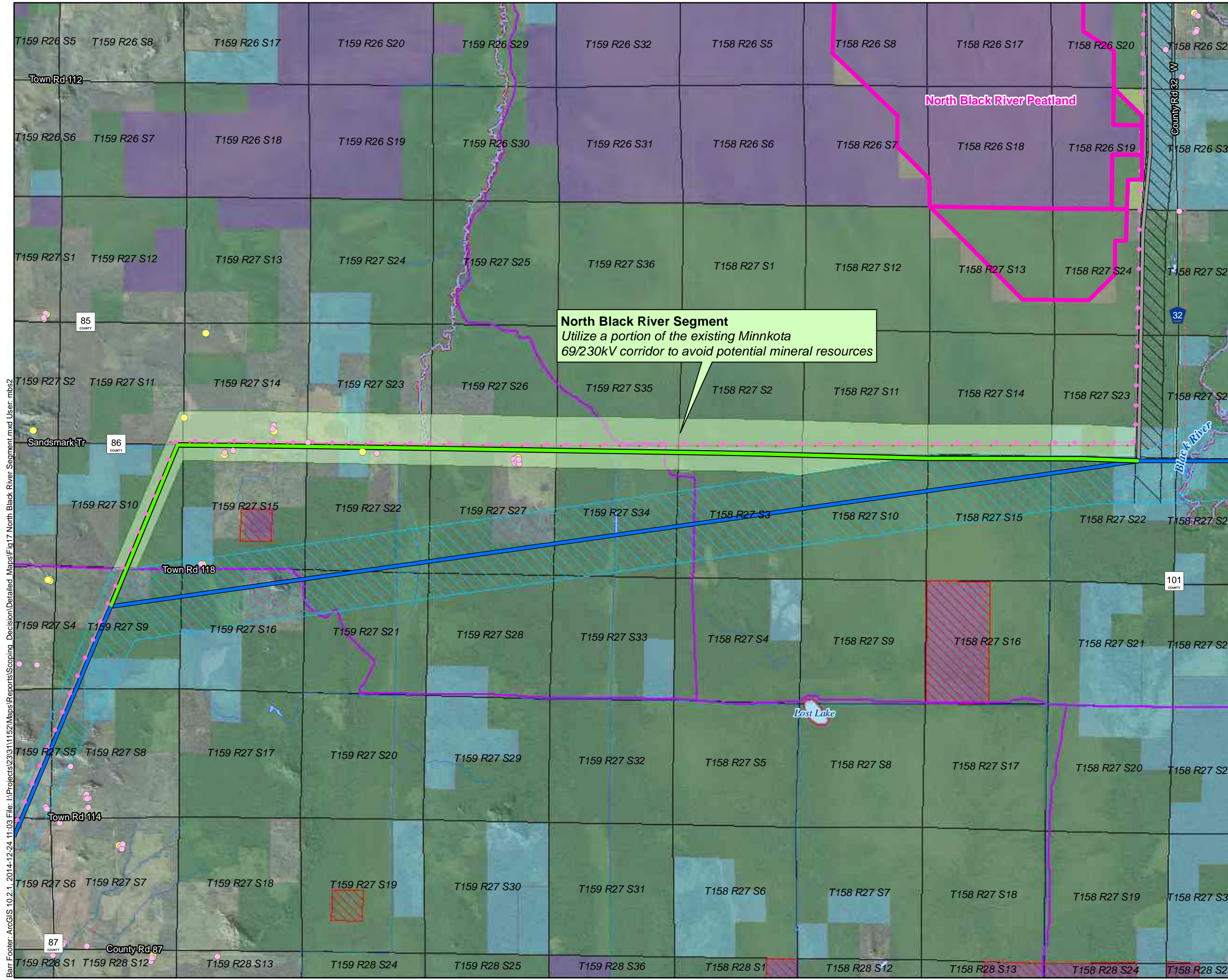


Figure 16
 (Overview Ref. F-3)
**SILVER CREEK WMA
 ALIGNMENT MODIFICATION**
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 11:01 File: I:\Projects\23311152\Maps\Reports\Scoping_Detailed\Map\Fig16 Silver Creek WMA Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- Scientific and Natural Area
- Non-Private Land Ownership (Assumed)
 - County Land
 - Federal Land
 - Corporate Land
 - State Land
- Existing Transmission Lines
 - 69 or 115 kV
 - 230 kV
- Scoping Process
 - Alternative Route Segment Alignment
 - Alternative Route Segment
- Proposed Routes
 - Proposed Blue Route
 - Proposed Alternative Route
 - Proposed Blue Route
 - Proposed Alternative Route

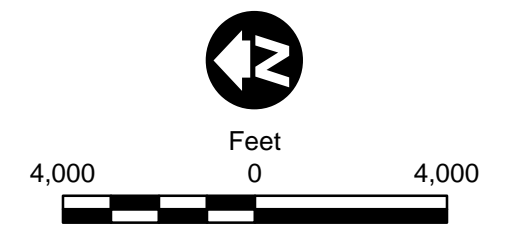
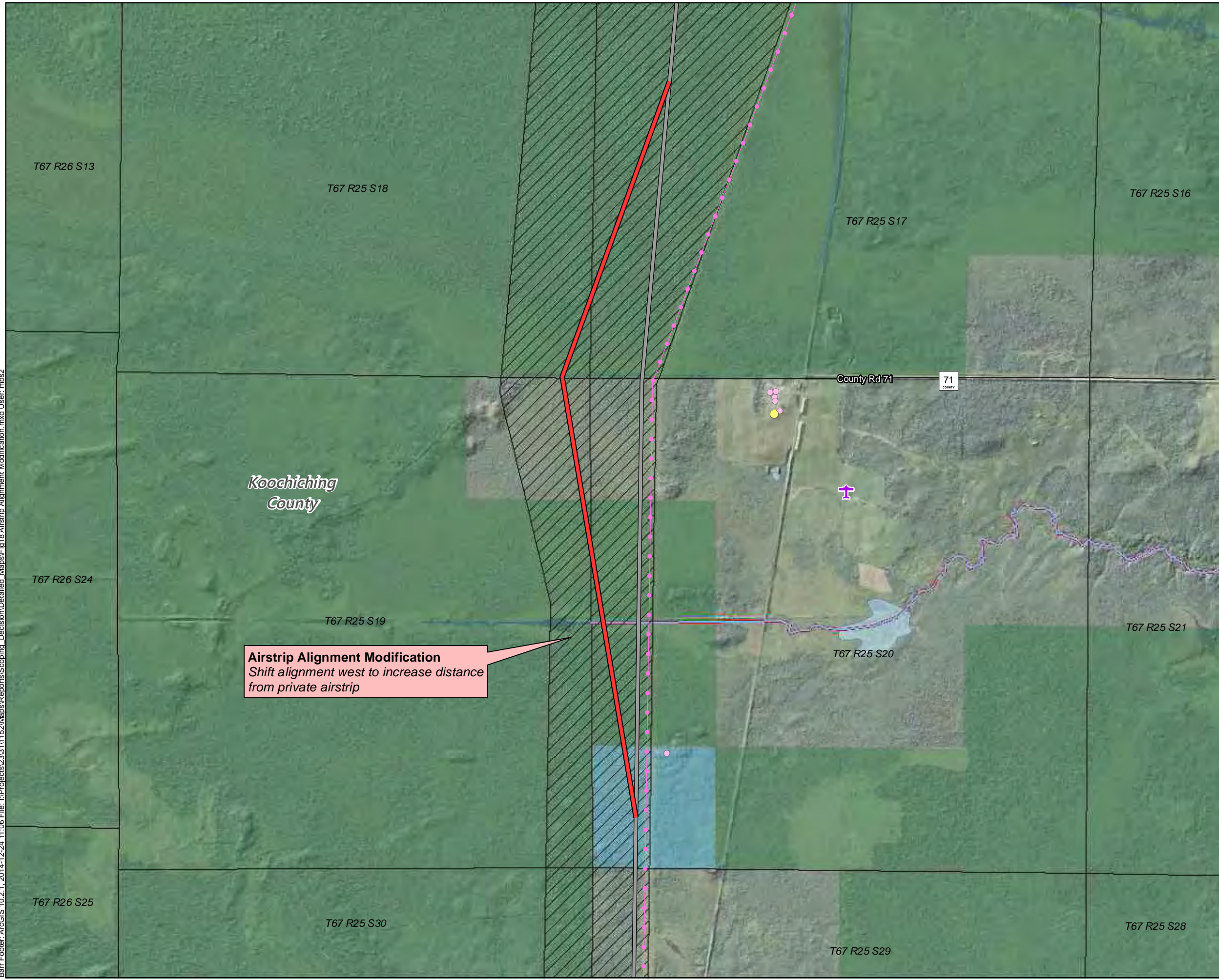


Figure 17
 (Overview Ref. G-3)
NORTH BLACK RIVER SEGMENT
 Great Northern Transmission Line Scoping Decision

File: I:\Projects\23\311152\Maps\Reports\Scoping\Decision\Detailed_Maps\Fig17 North Black River Segment.mxd User: mbs2
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 Footer: ArcGIS 10.2.1

Barr Footer: ArcGIS 10.2.1, 2014-12-24, 11:06 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Maps\Fig18 Airstrip Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- Airstrip
- PWI Watercourse
- Non-Private Land Ownership (Assumed)
 - Corporate Land
 - State Land
- Existing Transmission Lines
 - 230 kV
- Scoping Process
 - Alignment Modification
- Proposed Routes
 - Proposed Alternative Route
 - Proposed Alternative Route

Airstrip Alignment Modification
Shift alignment west to increase distance from private airstrip

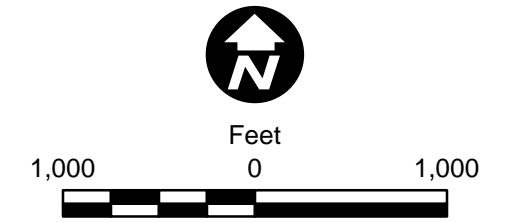
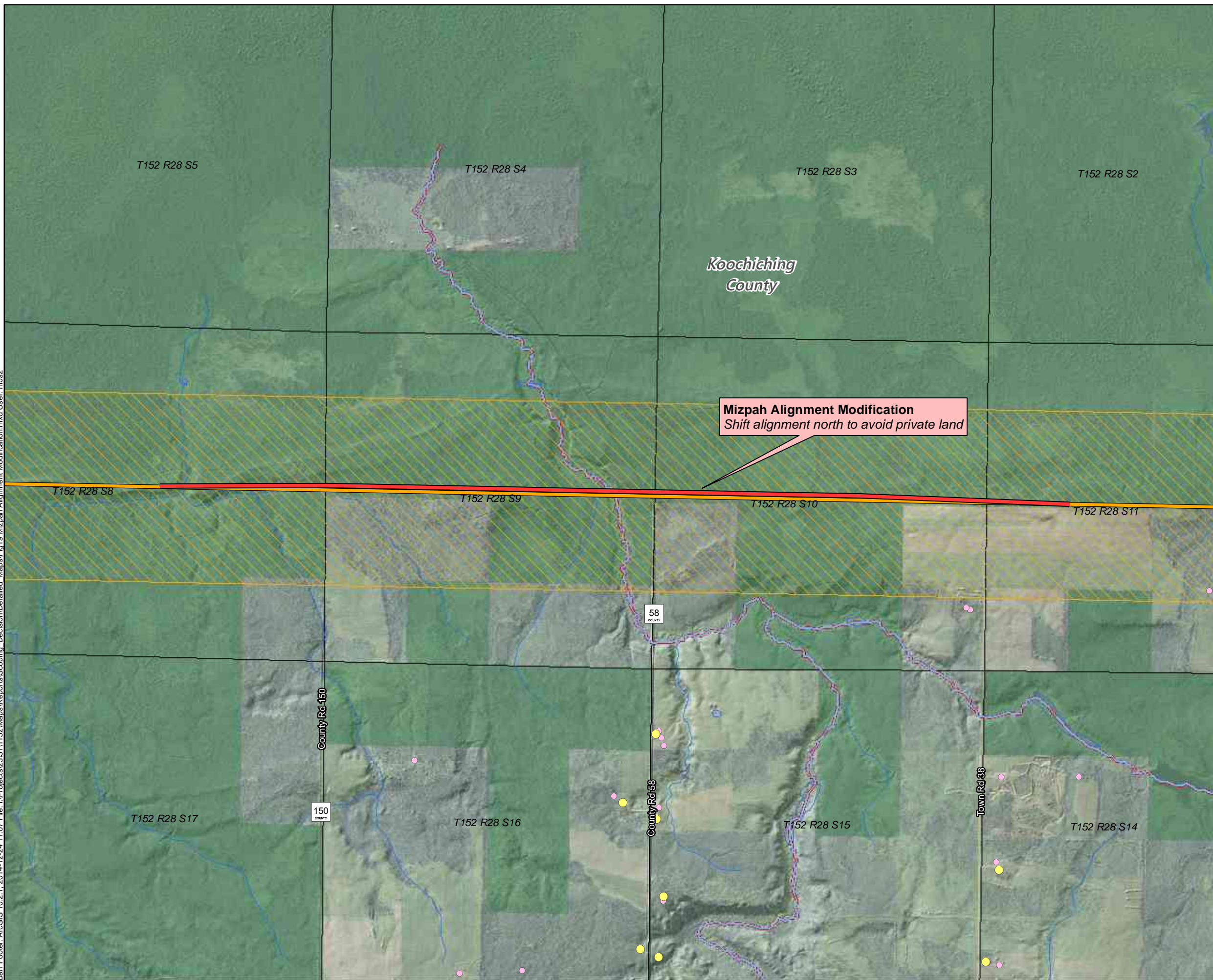


Figure 18
(Overview Ref. H-5)
AIRSTRIP ALIGNMENT MODIFICATION
Great Northern Transmission Line Scoping Decision



Bar\Footer_ArcGIS 10.2.1_2014-12-24_11:07 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Map\Fig19 Mizpah Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- PWI Watercourse
- Non-Private Land Ownership (Assumed)
- State Land
- Scoping Process
- Alignment Modification
- Proposed Routes
- Proposed Orange Route
- Proposed Orange Route

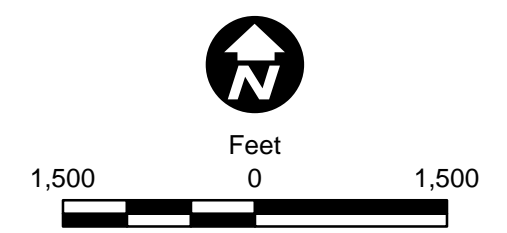
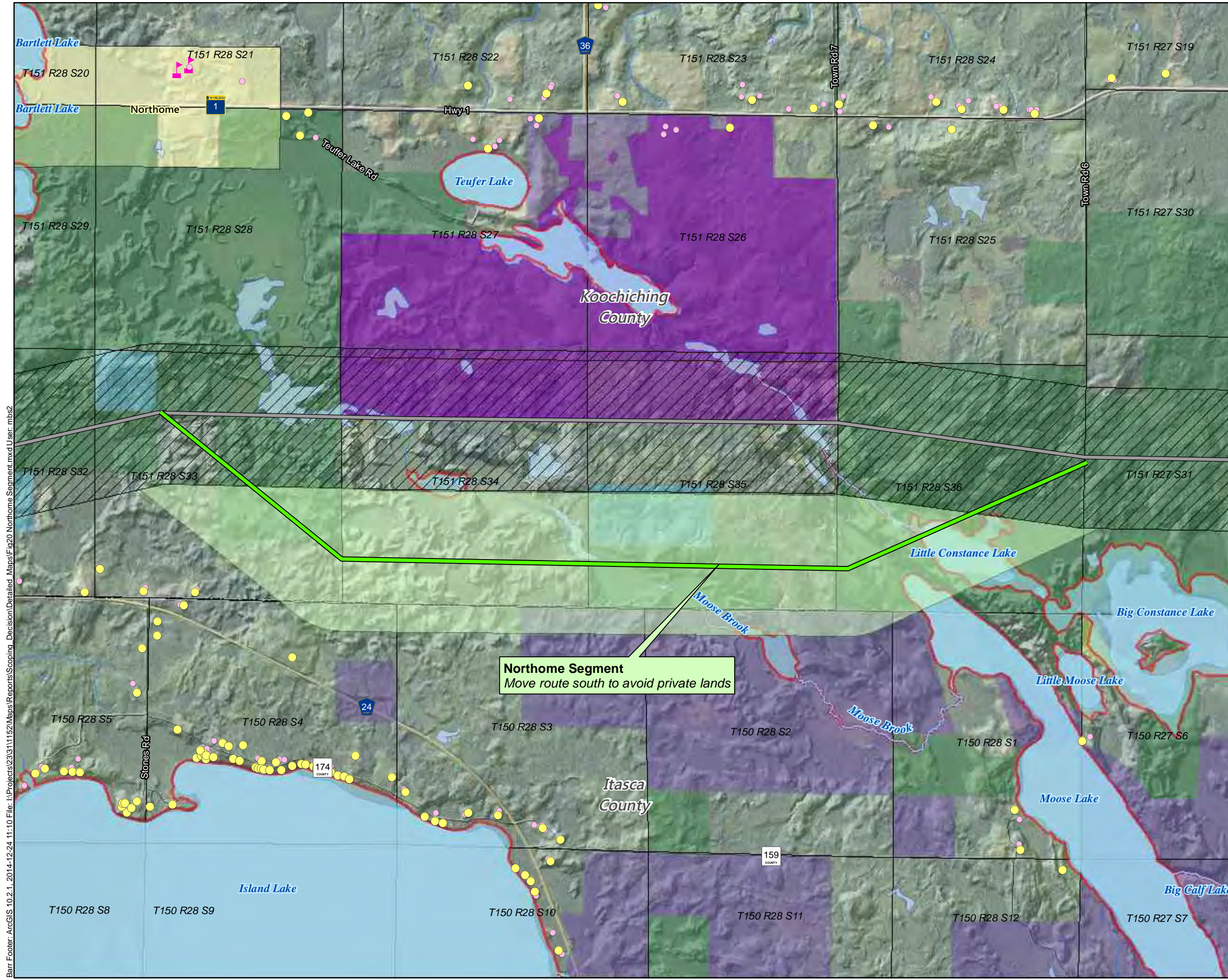


Figure 19
 (Overview Ref. F-6)
MIZPAH ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision



- Residence
- Non-Residential Structure
- ▲ School
- ~ PWI Watercourse
- ~ PWI Waterbody
- ~ Aquatic Management Area
- Non-Private Land Ownership (Assumed)
- County Land
- Federal Land
- Corporate Land
- State Land
- USFWS Interest Lands
- Scoping Process
- ~ Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Alternative Route
- Proposed Alternative Route

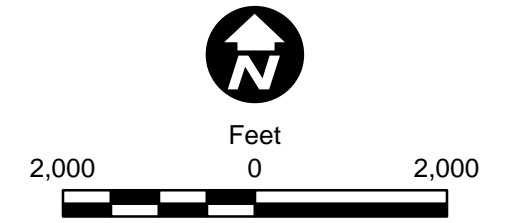
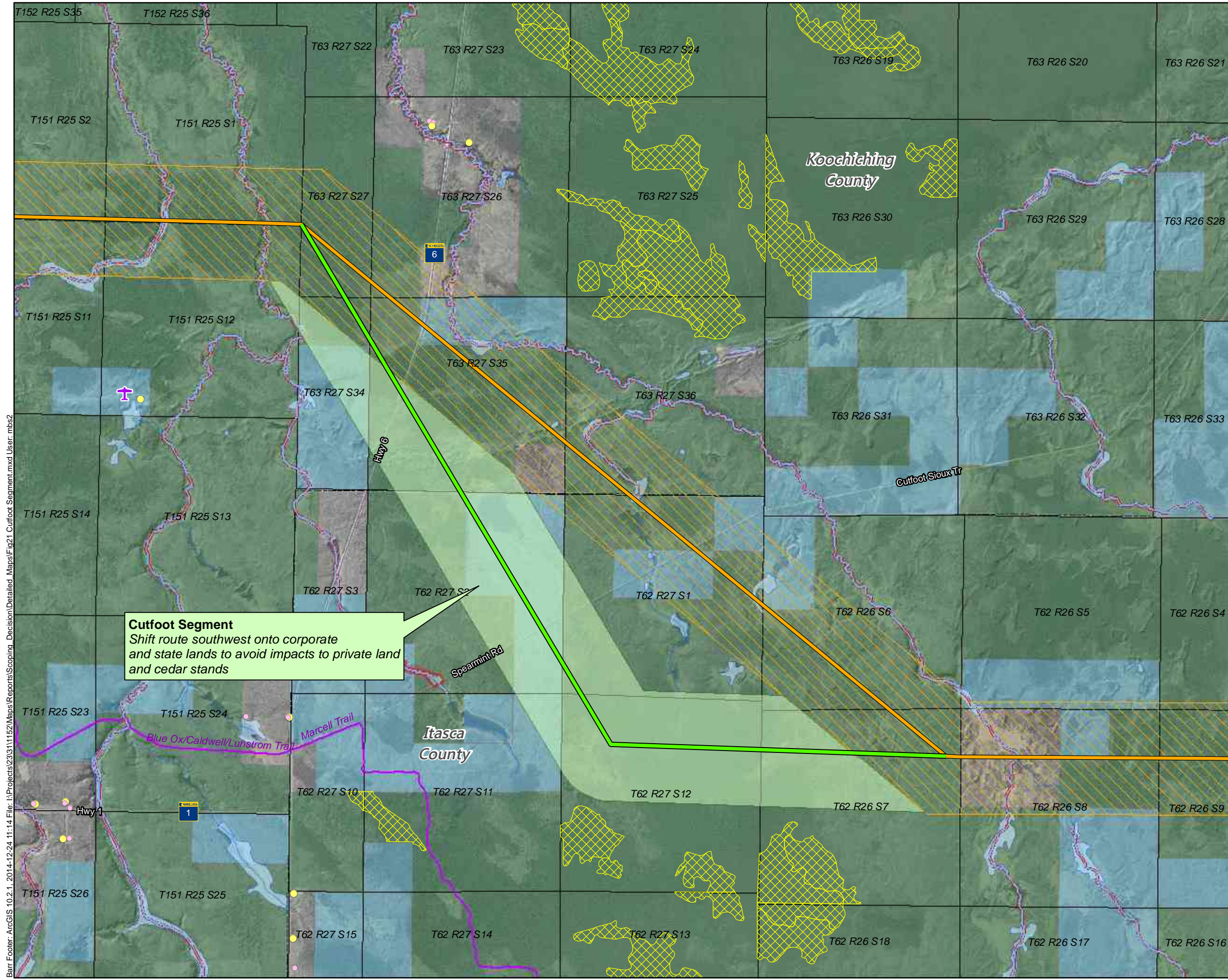


Figure 20
 (Overview Ref. F-7)
NORTHOME SEGMENT
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24, 11:10 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Map\Fig20 Northome Segment.mxd User: mbs2



- Residence
- Non-Residential Structure
- ✚ Airstrip
- ~ Snowmobile Trail
- ~ PWI Watercourse
- ~ PWI Waterbody
- ▨ Ecologically Important Lowland Conifers
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Scoping Process
- ~ Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- ~ Proposed Orange Route
- ~ Proposed Orange Route

Cutfoot Segment
 Shift route southwest onto corporate and state lands to avoid impacts to private land and cedar stands

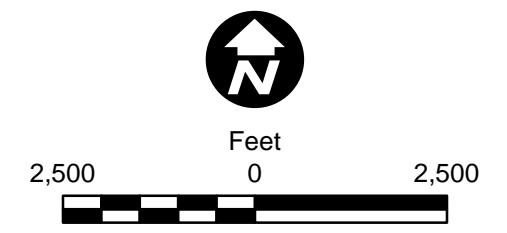
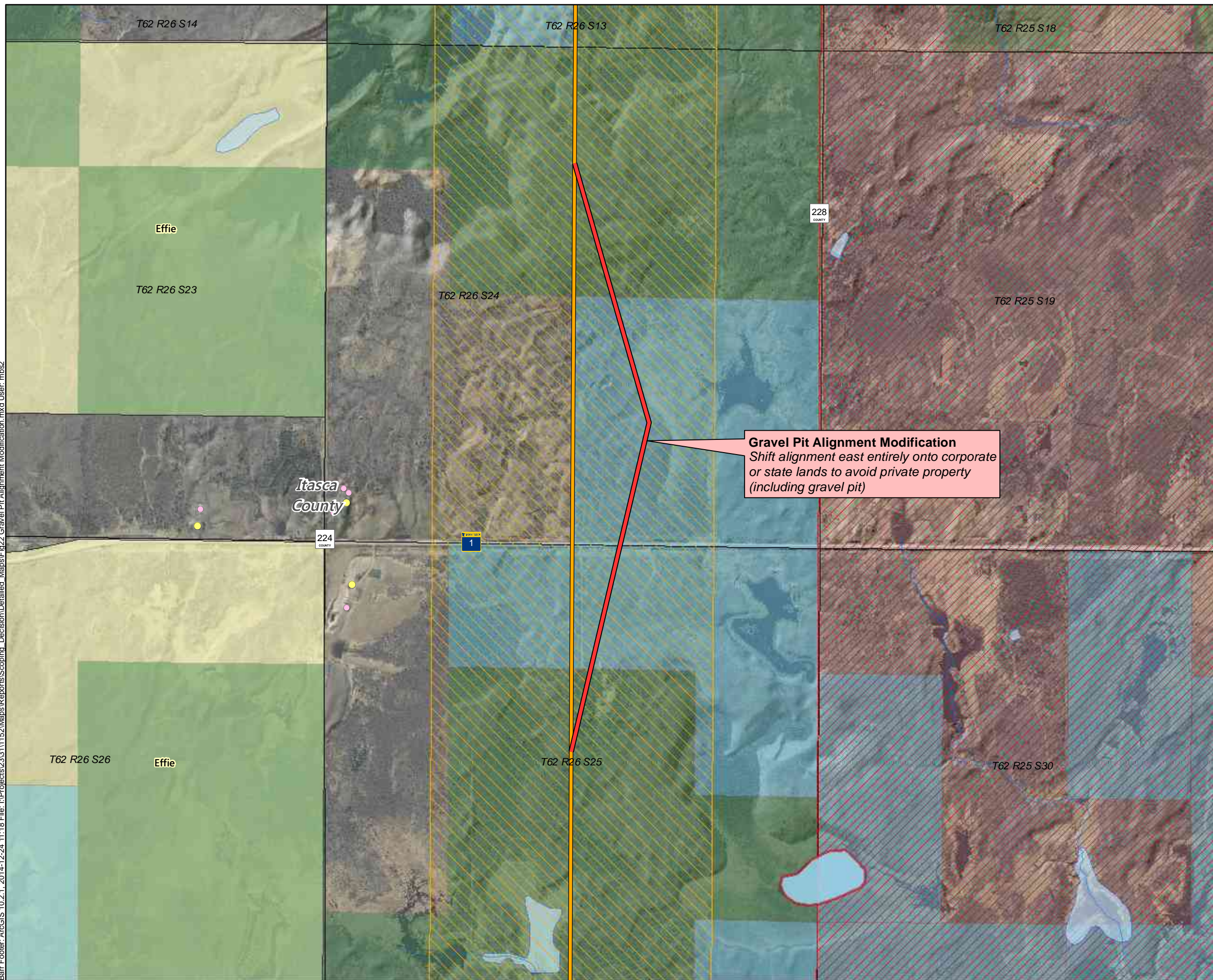


Figure 21
 (Overview Ref. H-7)
CUTFOOT SEGMENT
 Great Northern Transmission Line Scoping Decision

Bart Footer: ArcGIS 10.2.1, 2014-12-24, 11:14 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed_Maps\Fig21_Cutfoot_Segment.mxd User: mbs2

Bar Footer: ArcGIS 10.2.1, 2014-12-24, 11:18 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Map\Fig22 Gravel Pit Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- PWI Waterbody
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Indian Reservation
- Municipal Boundary
- Scoping Process
- ~ Alignment Modification
- Proposed Routes
- ~ Proposed Orange Route
- Proposed Orange Route

Gravel Pit Alignment Modification
 Shift alignment east entirely onto corporate or state lands to avoid private property (including gravel pit)

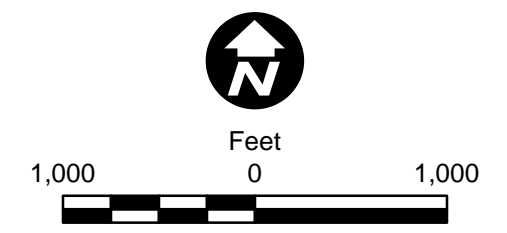
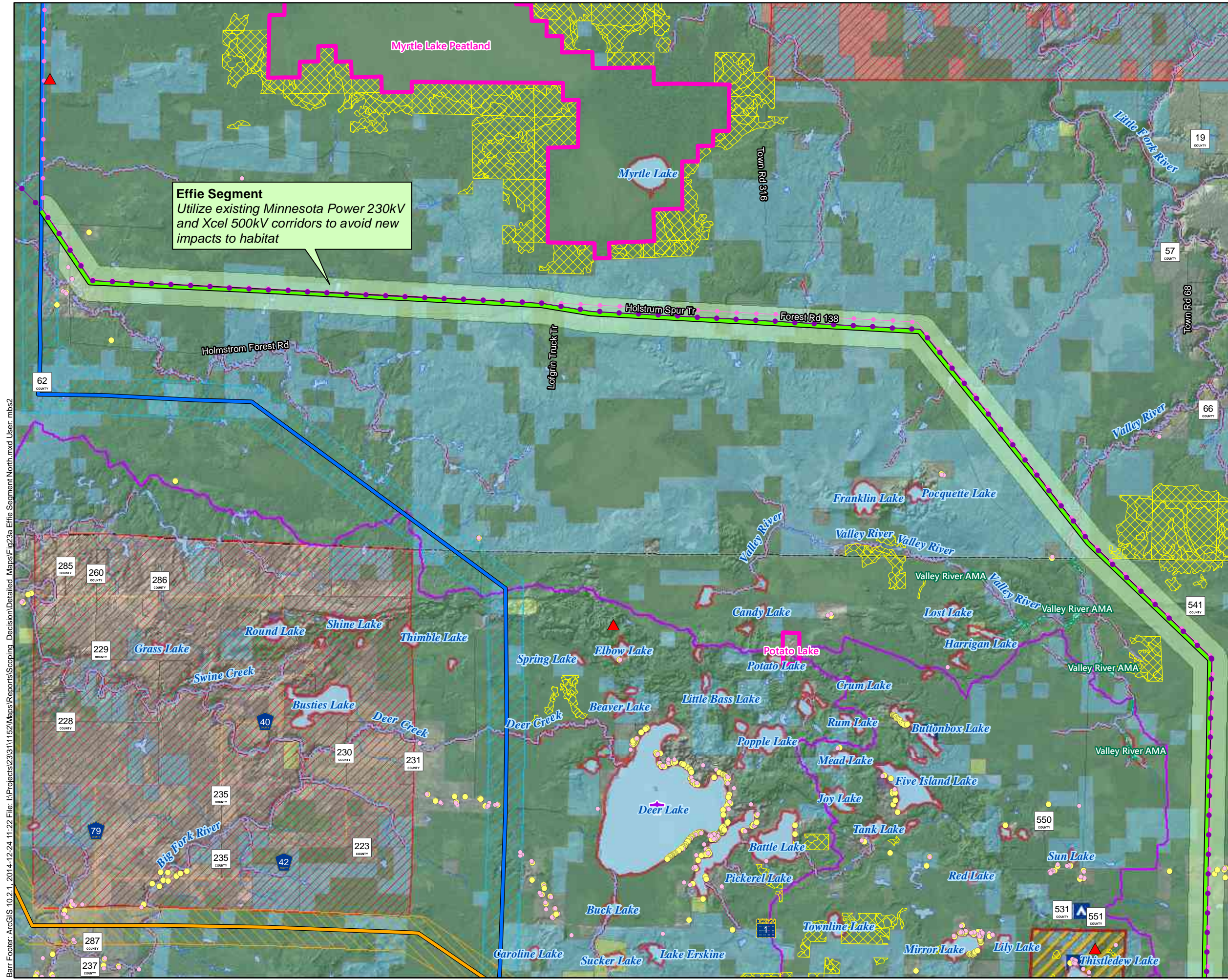


Figure 22
 (Overview Ref. H-7)
GRAVEL PIT ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision

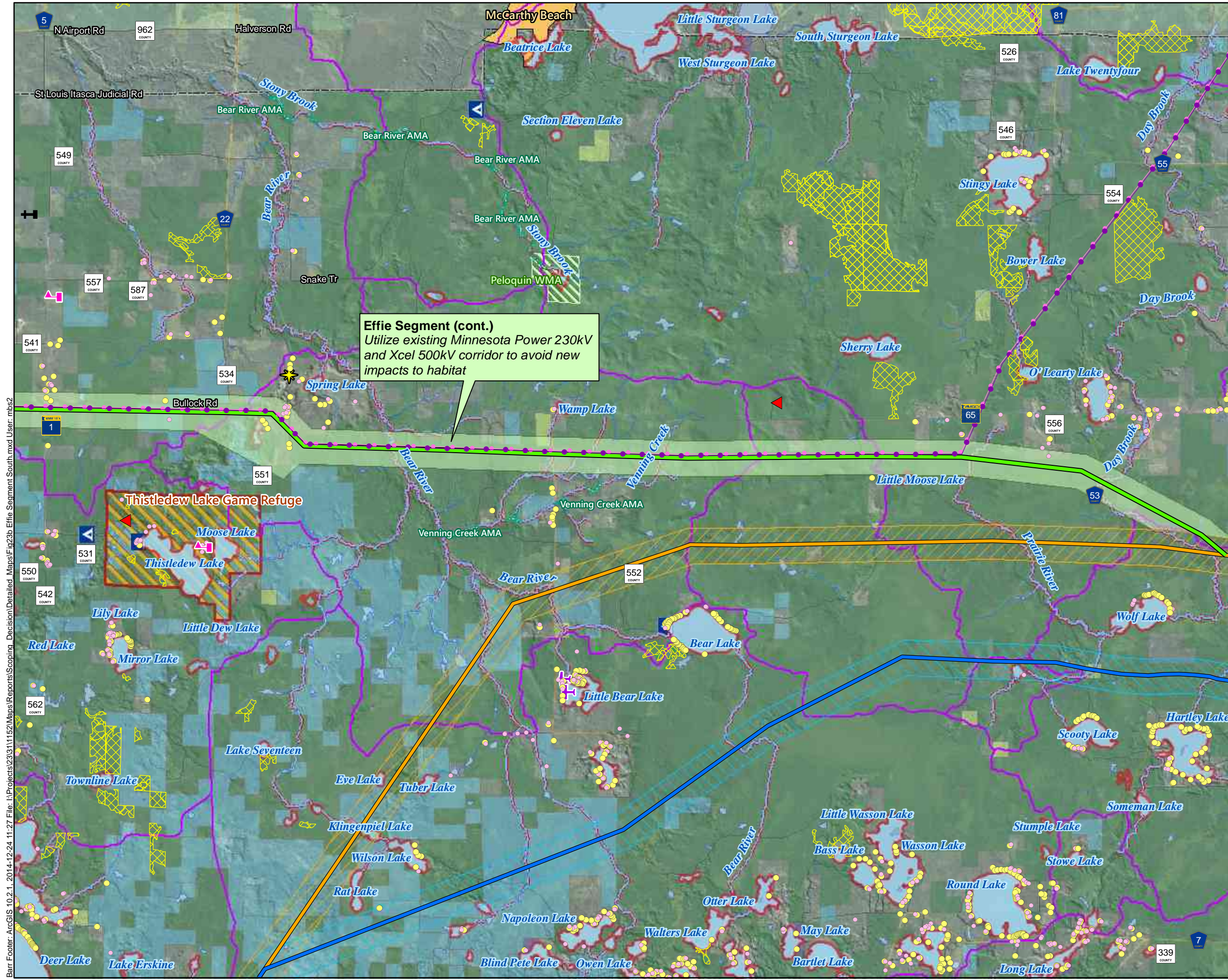


Bar Footer: ArcGIS 10.2.1, 2014-12-24, 11:22 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig23a_Effie_Segment_North.mxd User: mbs2

- Residence
- Non-Residential Structure
- ▲ State Forest Campground
- ▲ Fire Tower
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- Ecologically Important Lowland Conifers
- Aquatic Management Area
- Scientific and Natural Area
- State Game Refuge
- Land Ownership (Assumed)
- County Land
- Federal Land
- Corporate Land
- State Land
- Tribal Land
- Indian Reservation
- Existing Transmission Lines
- 230 kV
- 500 kV
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue Route
- Proposed Orange Route
- Proposed Blue Route
- Proposed Orange Route



Figure 23a
 (Overview Ref. H-7)
EFFIE SEGMENT (NORTH)
 Great Northern Transmission Line Scoping Decision



Effie Segment (cont.)
 Utilize existing Minnesota Power 230kV and Xcel 500kV corridor to avoid new impacts to habitat

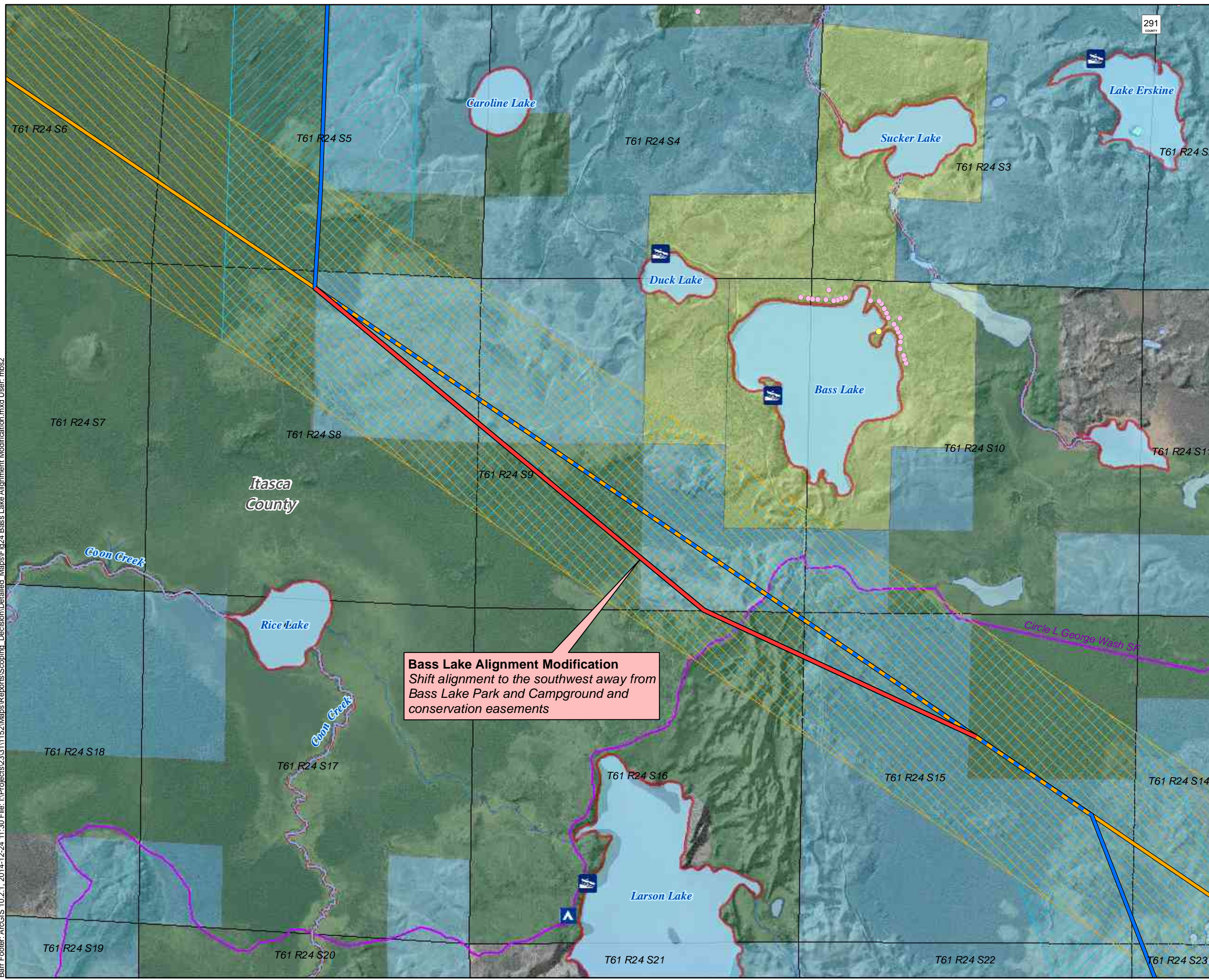
- Residence
- Non-Residential Structure
- ▲ School
- ✙ Church
- ▲ Fire Tower
- ▲ State Forest Campground
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- ▨ Ecologically Important Lowland Conifers
- Aquatic Management Area
- ▨ State Game Refuge
- ▨ Wildlife Management Area
- Land Ownership (Assumed)
- County Land
- Federal Land
- Other Public Land
- Corporate Land
- State Land
- Existing Transmission Lines
- 230 kV
- 500 kV
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue Route
- Proposed Orange Route
- ▨ Proposed Blue Route
- ▨ Proposed Orange Route



Figure 23b
 (Overview Ref. I-8)
EFFIE SEGMENT (SOUTH)
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 11:27 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig23b_Effie_Segment_South.mxd User: mbs2

Bar Footer: ArcGIS 10.2.1, 2014-12-24, 11:30 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed_Maps\Fig24 Bass Lake Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- State Forest Campground
- Water Access Point
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- Aquatic Management Area
- Non-Private Land Ownership (Assumed)**
- County Land
- Federal Land
- Corporate Land
- State Land
- Scoping Process**
- Alignment Modification
- Proposed Routes**
- Proposed Blue Route
- Proposed Orange Route
- Proposed Blue/Orange Shared Route
- Proposed Blue Route
- Proposed Orange Route

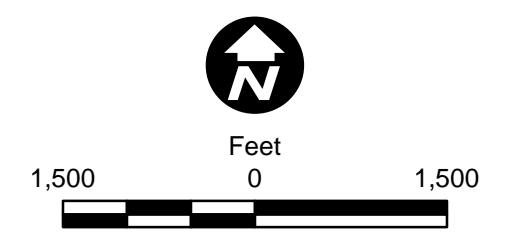
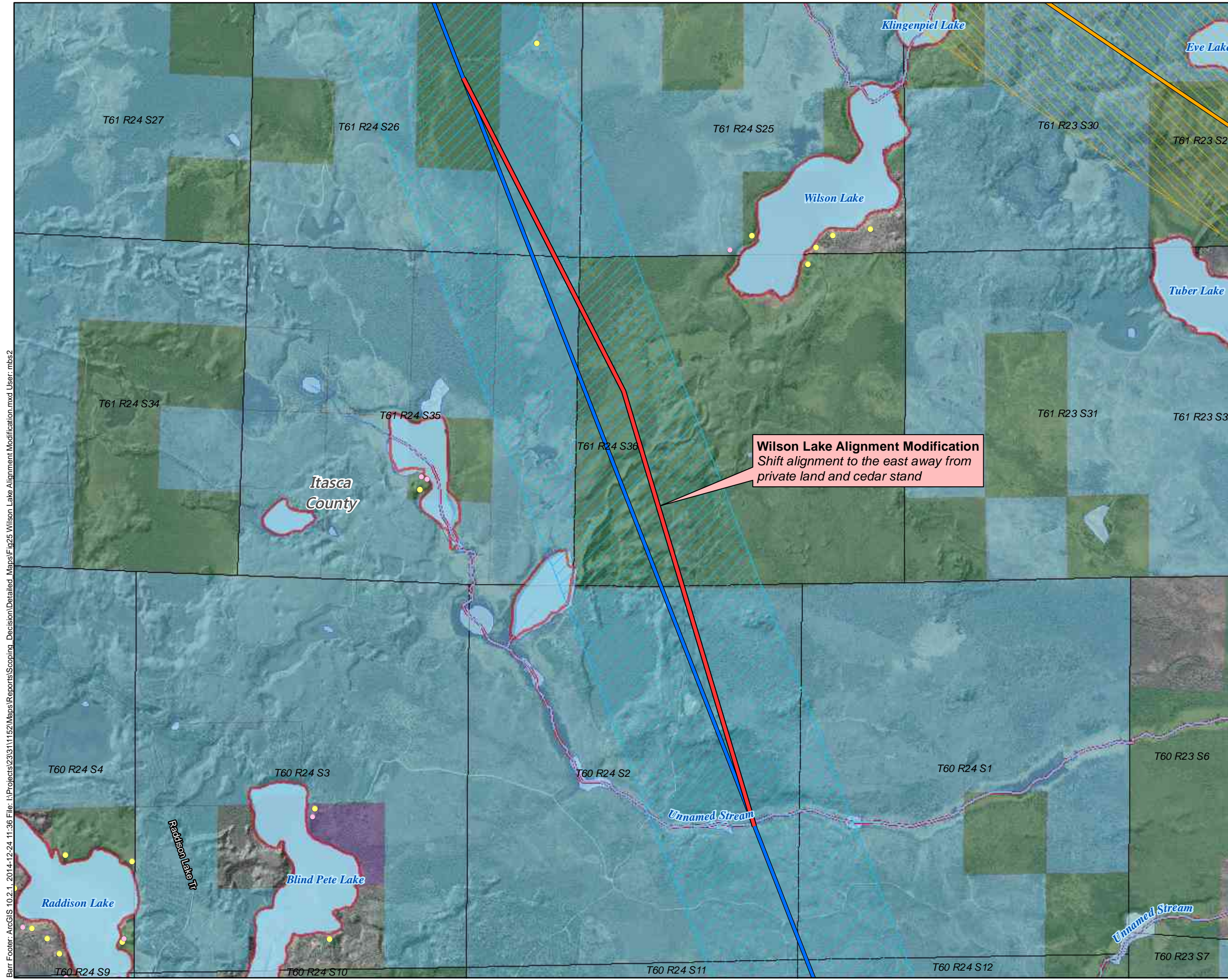


Figure 24
(Overview Ref. H-7)
BASS LAKE ALIGNMENT MODIFICATION
Great Northern Transmission Line Scoping Decision



- Residence
- Non-Residential Structure
- PWI Watercourse
- PWI Waterbody
- Non-Private Land Ownership (Assumed)
 - Federal Land
 - Corporate Land
 - State Land
- Scoping Process
 - Alignment Modification
- Proposed Routes
 - Proposed Blue Route
 - Proposed Orange Route
 - Proposed Blue Route
 - Proposed Orange Route

Wilson Lake Alignment Modification
 Shift alignment to the east away from private land and cedar stand

Bar\Footer_ArcGIS 10.2.1_2014-12-24_11:36 File: I:\Projects\23111152\Maps\Reports\Scoping_Detailed\Wilson Lake Alignment Modification.mxd User: mbs2

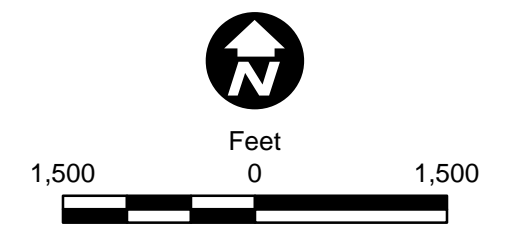
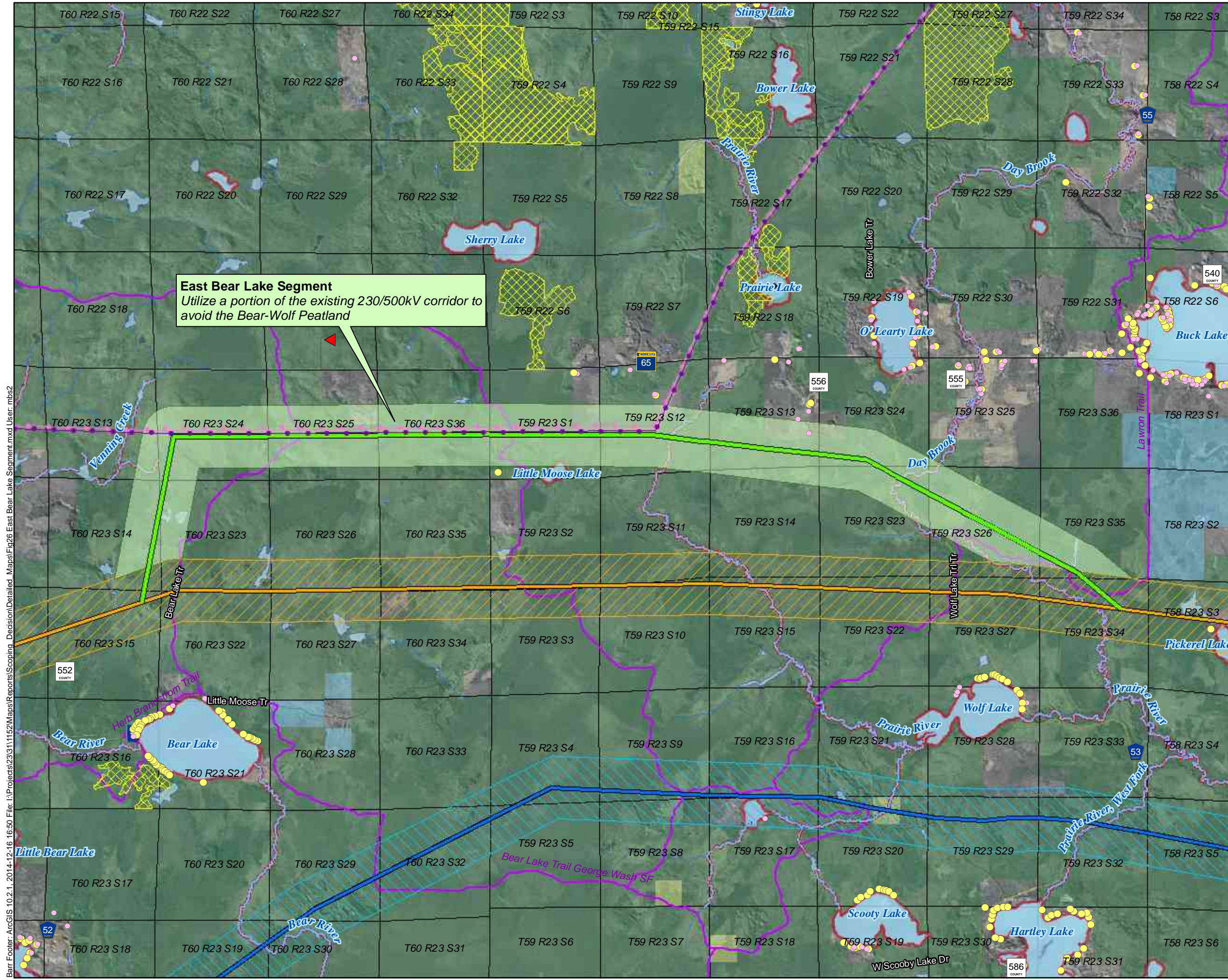


Figure 25
 (Overview Ref. H-7)
WILSON LAKE ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision



East Bear Lake Segment
 Utilize a portion of the existing 230/500kV corridor to avoid the Bear-Wolf Peatland

- Residence
- Non-Residential Structure
- ▲ Fire Tower
- ▲ State Forest Campground
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- ▨ Ecologically Important Lowland Conifers
- Aquatic Management Area
- Land Ownership (Assumed)**
- County Land
- Other Public Land
- Corporate Land
- State Land
- Existing Transmission Lines**
- 230 kV
- 500 kV
- Scoping Process**
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes**
- Proposed Blue Route
- Proposed Orange Route
- Proposed Blue Route
- Proposed Orange Route

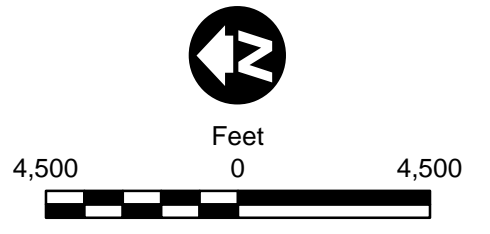
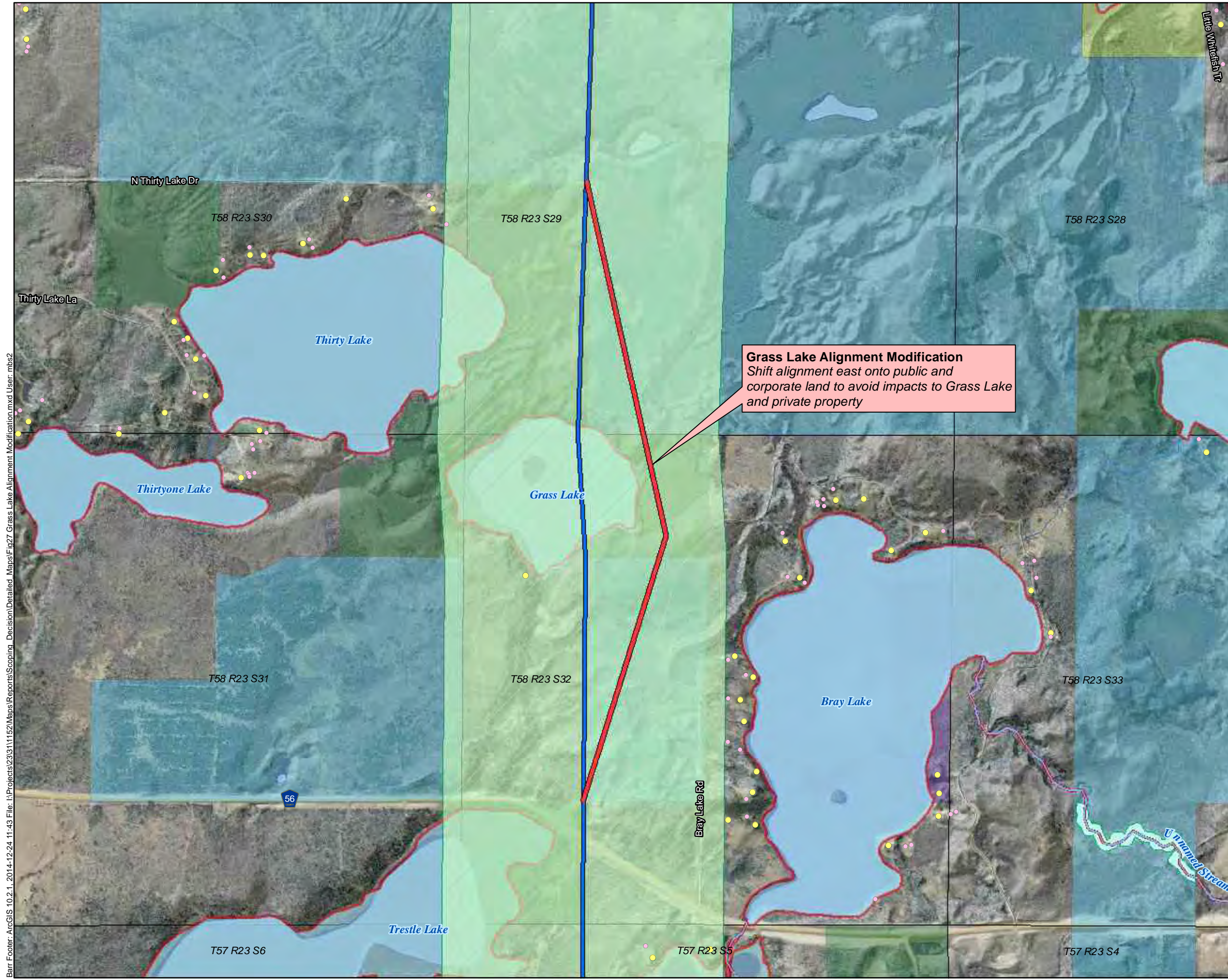


Figure 26
 (Overview Ref. I-8)
EAST BEAR LAKE SEGMENT
 Great Northern Transmission Line Scoping Decision

Bear Footer: ArcGIS 10.2.1, 2014-12-16 16:50 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig26_East_Bear_Lake_Segment.mxd User: mbs2



Grass Lake Alignment Modification
 Shift alignment east onto public and corporate land to avoid impacts to Grass Lake and private property

- Residence
- Non-Residential Structure
- PWI Watercourse
- PWI Waterbody
- Aquatic Management Area
- Public Land Survey Section
- Land Ownership (Assumed)**
- County Land
- Federal Land
- Corporate Land
- State Land
- Scoping Process**
- Alignment Modification
- Alternative Route Segment
- Proposed Routes**
- Proposed Blue Route
- Blue Route

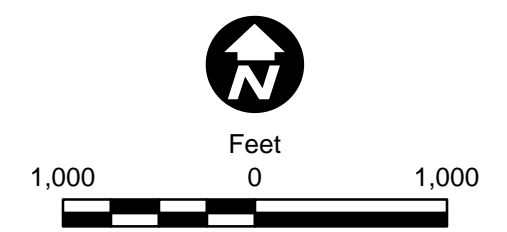


Figure 27
 (Overview Ref. I-9)
GRASS LAKE ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 11:43 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Map\Fig27 Grass Lake Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- Water Access Point
- PWI Watercourse
- PWI Waterbody
- Non-Private Land Ownership (Assumed)
- Federal Land
- Corporate Land
- State Land
- Scoping Process
- Alignment Modification
- Proposed Routes
- Proposed Blue Route
- Proposed Blue Route

Dead Man's Pond Alignment Modification
 Shift alignment to west to avoid homestead
 and shift from developed to undeveloped land

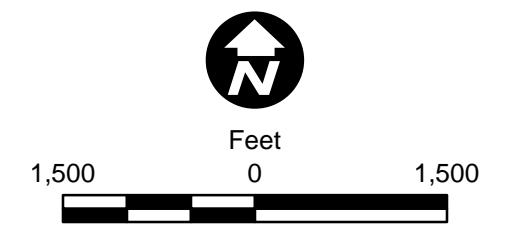
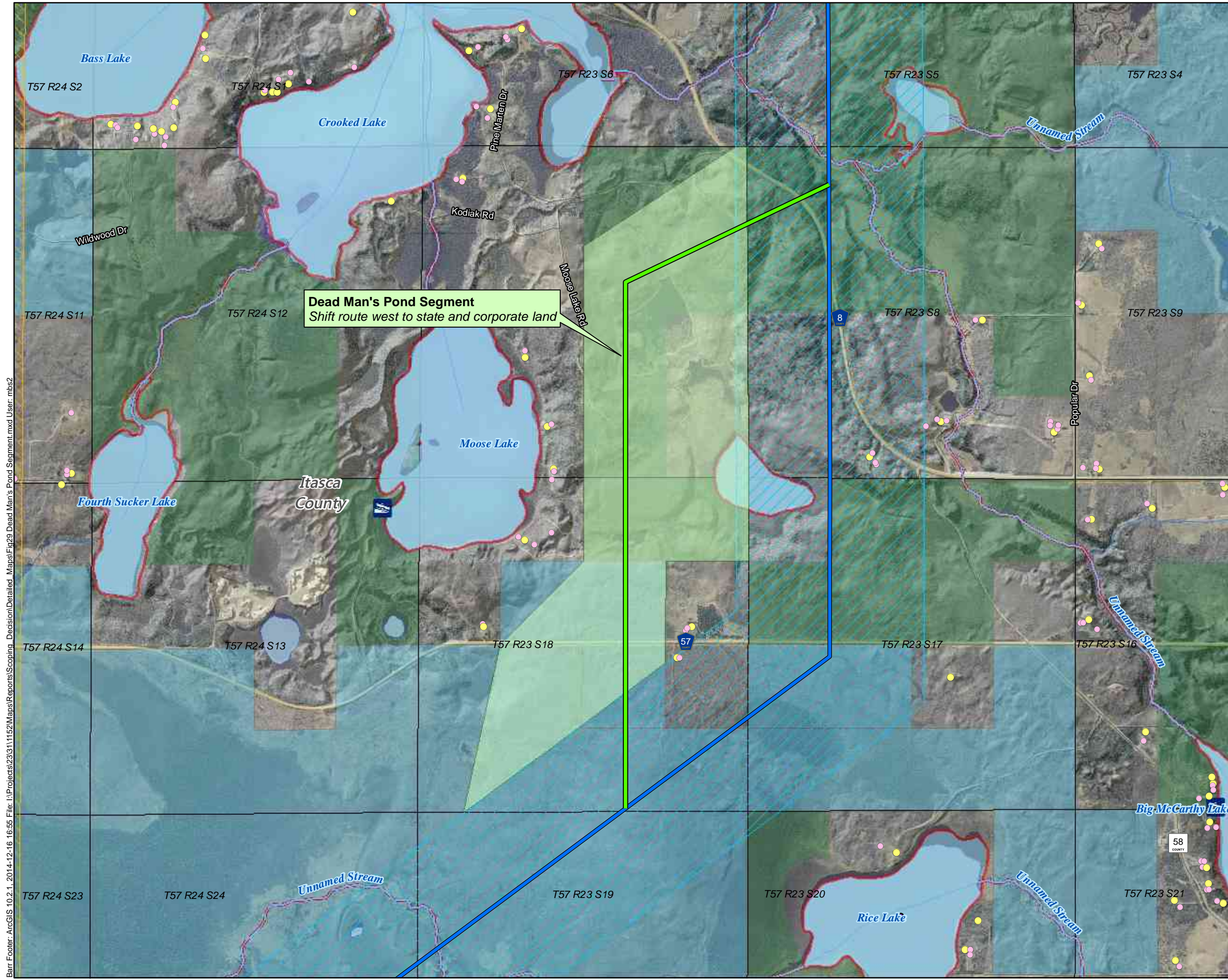


Figure 28
 (Overview Ref. I-9)
DEAD MAN'S POND
ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-24 11:45 File: I:\Projects\23\311152\Maps\Reports\Scoping_Detailed\Map\Fig28 Dead Man's Pond Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- Water Access Point
- PWI Watercourse
- PWI Waterbody
- Non-Private Land Ownership (Assumed)
 - Federal Land
 - Corporate Land
 - State Land
- Scoping Process
 - Alternative Route Segment Alignment
 - Alternative Route Segment
- Proposed Routes
 - Proposed Blue Route
 - Proposed Blue Route
 - Proposed Orange Route

Dead Man's Pond Segment
Shift route west to state and corporate land

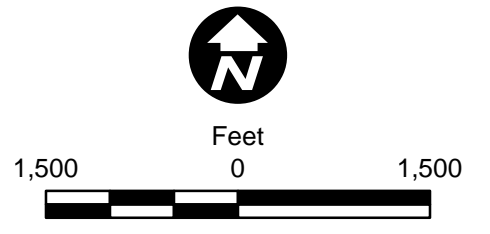
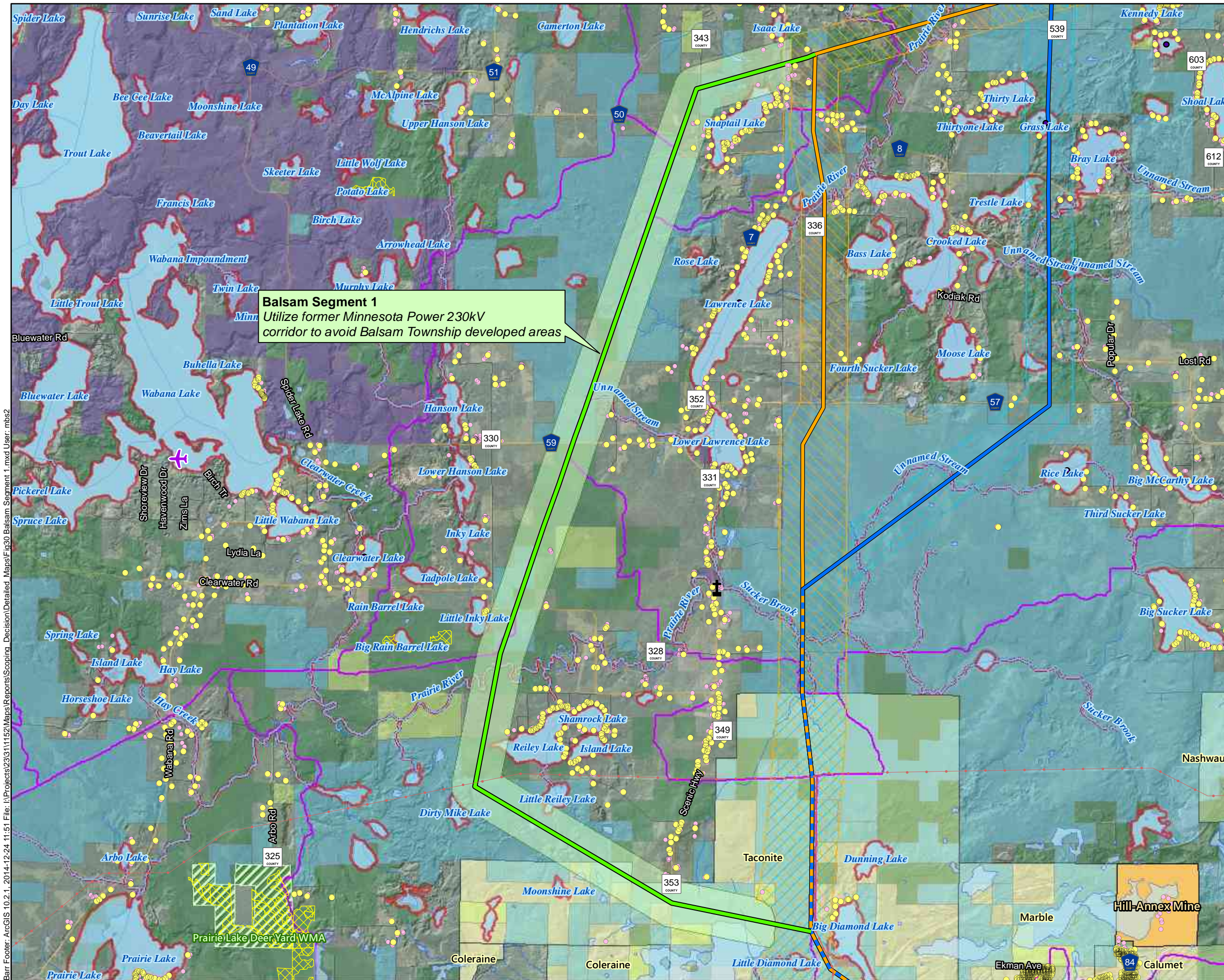


Figure 29
(Overview Ref. I-9)
DEAD MAN'S POND SEGMENT
Great Northern Transmission Line Scoping Decision

Barr Footer: ArcGIS 10.2.1, 2014-12-16 16:55 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Maps\Fig29 Dead Man's Pond Segment.mxd User: mbs2



Barr Footer: ArcGIS 10.2.1, 2014-12-24, 11:51 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig30 Balsam Segment 1.mxd User: mbs2

- Residence
- Non-Residential Structure
- ✙ Church
- ✈ Airport
- Snowmobile Trail
- PWI Watercourse
- PWI Waterbody
- ▨ Ecologically Important Lowland Conifers
- Aquatic Management Area
- ▨ Wildlife Management Area
- Non-Private Land Ownership (Assumed)
- ▨ County Land
- ▨ Federal Land
- ▨ Other Public Land
- ▨ Corporate Land
- ▨ State Land
- ▨ State Park
- Existing Transmission Lines
- 69 or 115 kV
- Scoping Process
- Alternative Route Segment Alignment
- Alternative Route Segment
- Proposed Routes
- Proposed Blue Route
- Proposed Orange Route
- Proposed Blue/Orange Shared Route
- ▨ Proposed Blue Route
- ▨ Proposed Orange Route

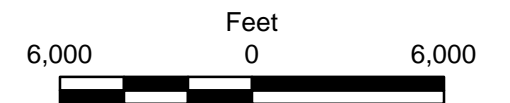
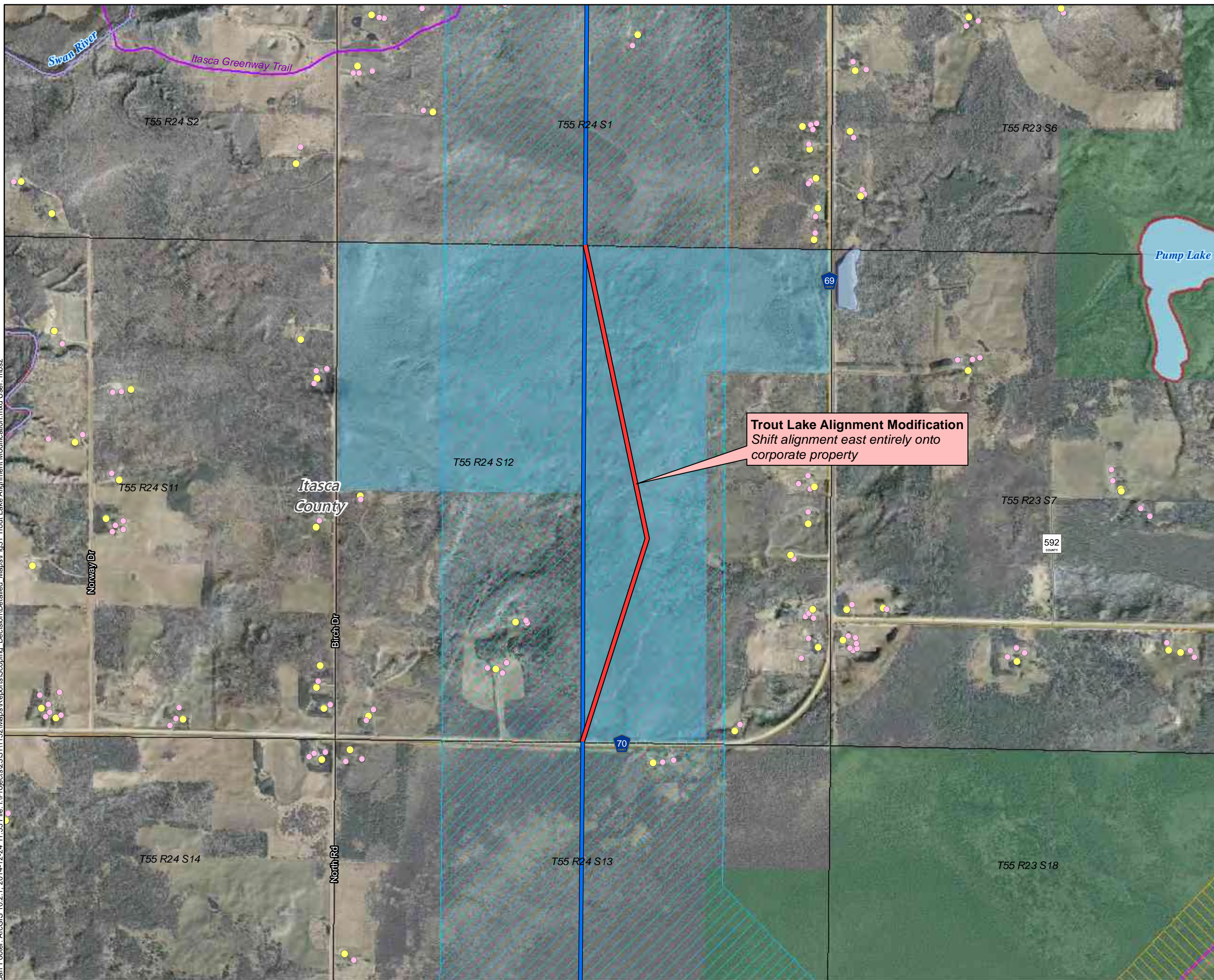


Figure 30
(Overview Ref. 1-9)
BALSAM SEGMENT 1
Great Northern Transmission Line Scoping Decision



Bar: Footer: ArcGIS 10.2.1, 2014-12-24, 11:55 File: I:\Projects\2311152\Maps\Reports\Scoping_Detailed\Map\Fig31 Trout Lake Alignment Modification.mxd User: mbs2



- Residence
- Non-Residential Structure
- ~ PWI Watercourse
- PWI Waterbody
- Non-Private Land Ownership (Assumed)
- Corporate Land
- State Land
- Existing Transmission Lines
- ~ 69 or 115 kV
- Scoping Process
- Alignment Modification
- Proposed Routes
- Proposed Blue Route
- Proposed Blue Route
- Proposed Orange Route

Trout Lake Alignment Modification
 Shift alignment east entirely onto corporate property

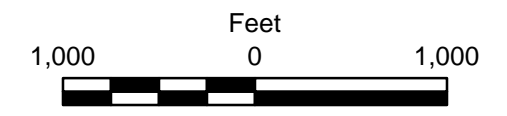


Figure 31
 (Overview Ref. I-10)
TROUT LAKE
ALIGNMENT MODIFICATION
 Great Northern Transmission Line Scoping Decision