

APPENDIX C

U.S. Fish and Wildlife Service



615 First Avenue NE ■ Suite 425 ■ Minneapolis, Minnesota ■ 55413

March 16, 2011

Tony Sullins, Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services Field Office
4101 East 80th Street
Bloomington, MN 55425

**Re: Rebuild of Transmission Lines 0844 and 0861 Project - Dakota County, Minnesota
Xcel Energy, Inc. / Northern States Power Company**

Dear Mr. Sullins:

Northern States Power Company, a Minnesota corporation, d/b/a Xcel Energy, Inc. (“Xcel Energy”) proposes to rebuild a portion of its 115 kilovolt (“kV”) transmission system between the Black Dog Substation in Burnsville and the Savage Substation in Savage, Minnesota. The Project is referred to as the Rebuild of Transmission Lines 0844 and 0861 Project (“Project”). The Project consists of two parts: 1) installation of approximately 5.1 miles of two new 115 kV transmission lines to interconnect with existing 115 kV transmission lines; and 2) removal of approximately 4.4 miles of two parallel existing 115 kV line transmission lines (0844 and 0861) and structures. The Project is needed to ensure reliable and efficient energy transmission between the two substations and when completed will reduce the overall transmission footprint in the Minnesota River Valley.

Xcel Energy is in the process of evaluating siting/routing information and collecting comments and input regarding the proposed route location; therefore, the location of new 115 kV transmission lines is preliminary and subject to minor changes through this process. The proposed Project area is depicted in the enclosed U.S. Geological Survey (“USGS”) topographic map and aerial-based map (Figures 1 and 2). Townships, ranges, and sections of the proposed Project area are listed in the following table.

Township	Range	Section(s)	Township Name	County
27N	24E	22, 23, 24, 27, 28, 29, 32, 33, and 34	Burnsville	Dakota

Between Black Dog Substation and I-35, the Project area is located in primarily commercial/industrial, forested, and open lands, and includes a number of existing road and utility corridors. This area is surrounded by lands managed by the U.S. Fish and Wildlife Service as part of the Minnesota Valley National Wildlife Refuge and consists largely of wetlands and a waterbody (Black Dog Lake). Between I-35 and Savage Substation, the Project area consists largely of commercial/industrial lands. Specifically, the Project will occur within and adjacent to an active sand and gravel mine and adjacent to an active landfill.

Ground disturbance associated with this Project will generally be limited to removal of existing piers and excavation of the new piers (up to 30 feet deep) to secure the new 115 kV Line structures. The construction corridor for the proposed transmission line removal and rebuild activities is approximately 400 feet wide, 200 feet on either side of the proposed centerlines. Xcel Energy typically requires a permanent right-of-way easement of 75 feet wide (37'6" from centerline of a structure) for new 115 kV transmission line as proposed in this Project. The height of the structures will range from 70 to 90 feet and the spans between structures typically range from 300 to 500 feet.

On behalf of Xcel Energy, Merjent, Inc. reviewed the U.S. Fish and Wildlife Service's website for a list of species and critical habitat that may be present within Dakota County.¹ According to the website, the following two species are known to occur within the county: Higgins eye pearlymussel (*Lampsilis higginsii*) and prairie bush-clover (*Lespedeza leptostachya*).

The Higgins eye pearlymussel occurs only within the Mississippi River and the lower portion of some of its larger tributaries. Although the Project will have minimal impacts on Black Dog Lake, it does not cross the Mississippi River or other waterbodies containing suitable habitat. Therefore, it has been determined this Project is not likely to adversely affect this species or its habitat.

The prairie bush-clover occurs within native dry mesic-prairies where the soils are well-drained with high sand or gravel content. The Project occurs within an area that is surrounded by a very large wetland complex where poorly-drained soils exist. Therefore, it has been determined the Project is not likely to adversely affect this species or its habitat.

On behalf of Xcel Energy, Merjent, Inc. respectfully requests your concurrence with the above review and determination. This request is submitted for general Project planning purposes and to support the potential permitting effort with the U.S. Army Corps of Engineers; and so that mitigation measures may be implemented, as necessary, to avoid impacts during construction on known rare plants, animals, and natural communities within the proposed Project area. An endangered resources review request has also been submitted to the Minnesota Department of Natural Resources, National Heritage Information System.

Xcel Energy appreciates your review and concurrence with our assessment of the proposed Project. If you have questions regarding this project or require additional information, please call Jim Fritz, Permitting Analyst with Xcel Energy at (612) 330-6956; or me at (612) 746-3664.

Sincerely,

MERJENT, INC.



Thomas M. Janssen
Senior Analyst

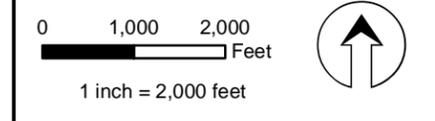
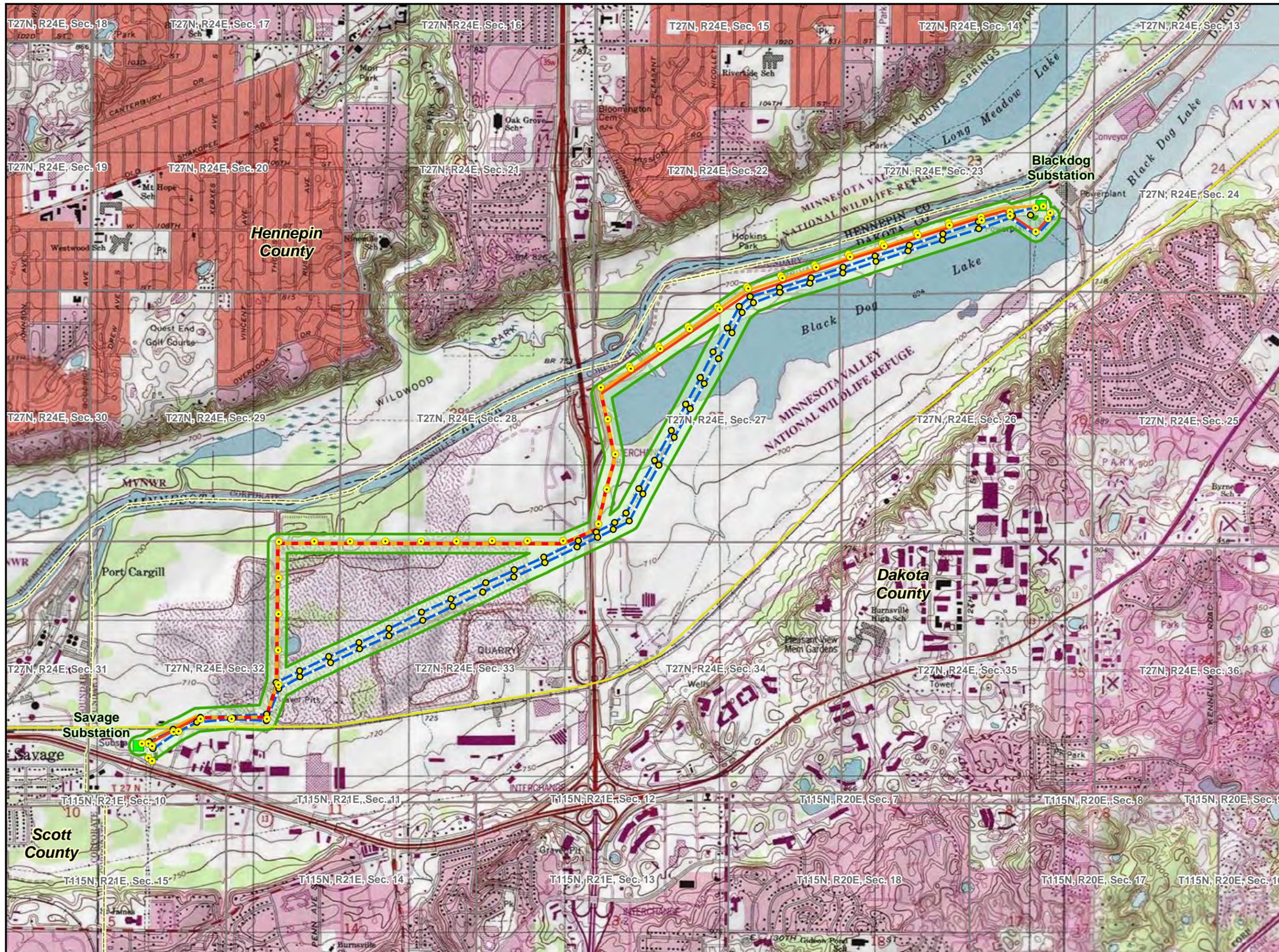
Enclosures:

Figure 1 - USGS Topographic Map

Figure 2 - Aerial-based Photographic Map

cc: Jim Fritz, Xcel Energy

¹ <http://www.fws.gov/midwest/Endangered/lists/minnesot-cty.html>



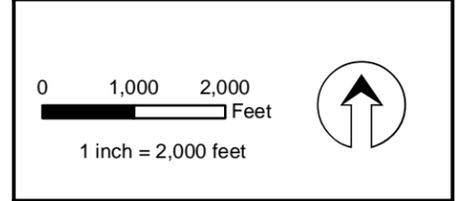
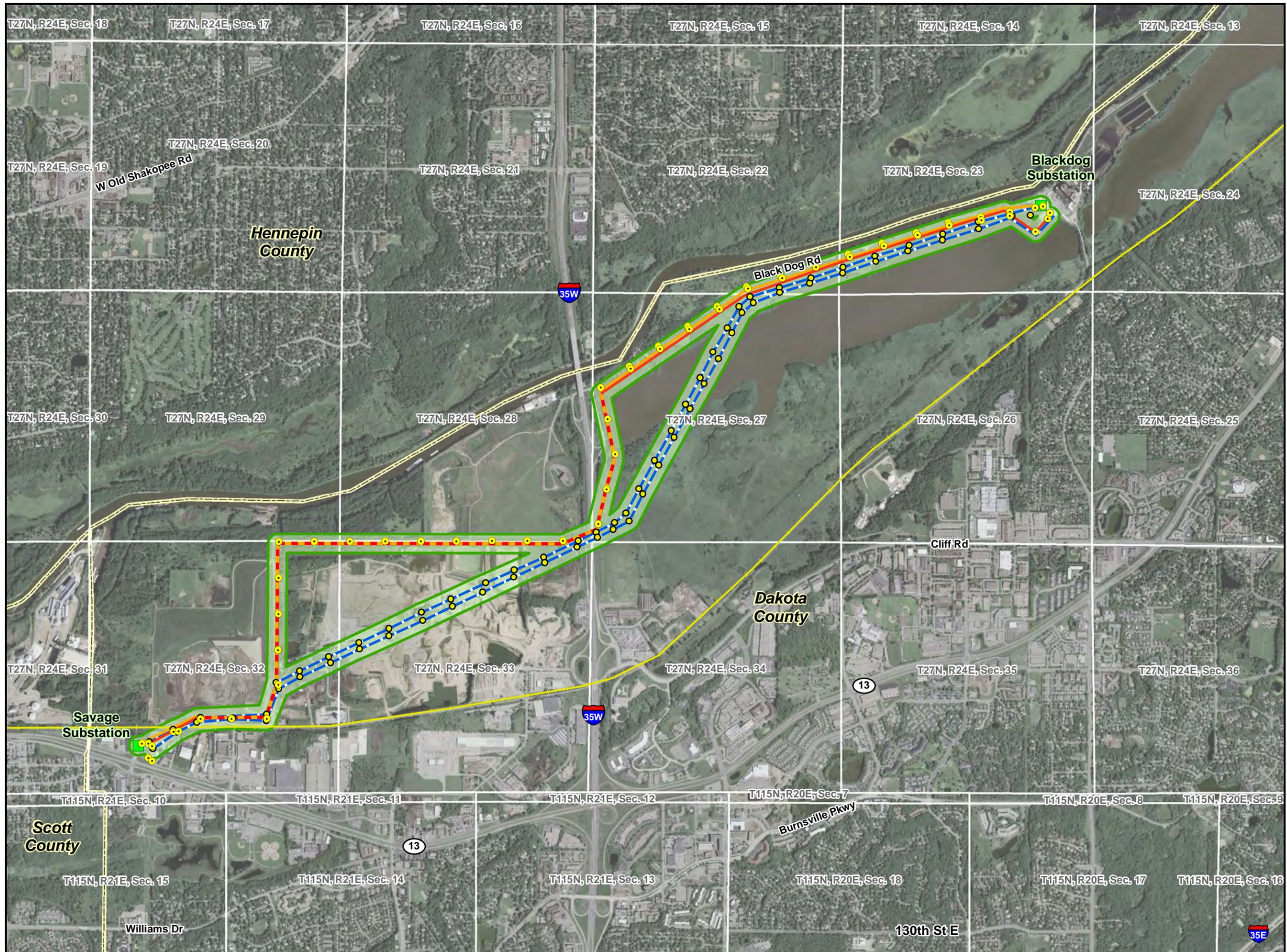
- Proposed Structure
- Existing Structure
- Xcel Owned Substation
- Proposed Line 0861 Single Circuit (115kV)
- Proposed Line 0844 Single Circuit (115kV)
- Proposed Line 0844 and 0861 Double Circuit (115kV)
- Existing Line Removal (0844 and 0861)
- Union-Pacific Railroad
- Project Area
- Section Boundary
- County Boundary



FIGURE 1
USGS PROJECT
LOCATION MAP

Rebuild of Transmission
Lines 0844 and 0861 Project
Xcel Energy
Burnsville, Minnesota

Source: Aerial Photography: FSA 2009/2010
 All Other Data Provided by Xcel Energy, Merjent
 This information is for review purposes only and
 is subject to change.
 Revision Date: 03/14/2011



- Proposed Structure
- Existing Structure
- Xcel Owned Substation
- Proposed Line 0861 Single Circuit (115kV)
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FIGURE 2
AERIAL-BASED
PROJECT LOCATION
MAP

Rebuild of Transmission
Lines 0844 and 0861 Project
Xcel Energy
Burnsville, Minnesota

Source: Aerial Photography: FSA 2009/2010
 All Other Data Provided by Xcel Energy, Merjent
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 Revision Date: 03/14/2011

Naomi K. Jenson

Subject: FW: Rebuild of Transmission Lines 0844 and 0861

From: "[Andrew Horton@fws.gov](mailto:Andrew.Horton@fws.gov)" <Andrew.Horton@fws.gov>
Date: April 8, 2011 3:35:43 PM CDT
To: "Tom M. Janssen" <TJanssen@Merjent.com>, "james.w.fritz@xcelenergy.com" <james.w.fritz@xcelenergy.com>
Cc: "[Margaret Rheude@fws.gov](mailto:Margaret.Rheude@fws.gov)" <Margaret.Rheude@fws.gov>
Subject: **RE: Rebuild of Transmission Lines 0844 and 0861**

Thomas Janssen
Senior Analyst
Merjent, Inc.
615 First Avenue NE, Suite 425
Minneapolis, MN 55413

Dear Mr. Janssen,

Thank you for the opportunity to review the proposed realignment of Xcel Energy's 0844 and 0861 Lines located in Dakota County, MN. Our records indicate there are no federally listed or proposed species and/or designated or proposed critical habitat within the action area of the proposed project. The project area does run through portions of Minnesota Valley Wildlife Refuge (Refuge). Given the proximity of the project to this important bird area, we recommend that bird flight diverters be installed on the shield wire of the transmission lines within the Refuge.

There is an unverified report of a bald eagle nest located near the outlet of Black Dog Lake into the Minnesota River and within 330 feet of the project area. Given the potential presence of bald eagle nests near the proposed line placement, we recommend the following:

- Survey for bald eagle nests along the proposed project route.
- If eagle nests are discovered within 660 feet of the project area, please contact this office to determine if an eagle permit is necessary or if construction timetables should be designed to do much of the work outside the bald eagle nesting season.
- Utilize a double circuit transmission line design that is wider than the wingspan of eagles and other large birds to reduce the possibility of electrocution.
- Insulate poles and wires to reduce the risk of electric shock to birds.
- Install perch guards on utility line poles within the Refuge to discourage raptor nesting.
- If any new nests are discovered within 660 feet of the project area,

The Fish and Wildlife Services has generated The National Bald Eagle Management Guidelines (<http://www.fws.gov/midwest/eagle/guidelines/guidelines.html>), which are intended to help minimize disturbance to bald eagles. The Fish and Wildlife Services strongly encourages adherence to these guidelines. If project plans change, additional information on listed or proposed species becomes available, or new species are listed that may be affected by the project, please contact this office. If you have any further questions, please contact me at (612) 725-3548 x2208 or for specific bald eagle questions, Margaret Rheude at (612) 725-3548 x2202.

Sincerely,

Andrew Horton
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Twin Cities ES Field Office
4101 American Blvd East
Bloomington, MN 55425-1665
(612) 725-3548 ext. 2208

Minnesota Department of Natural Resources

**(Privileged and Confidential Information
has been redacted from this application)**



March 11, 2011

Ms. Lisa Joyal
Endangered Species Environmental Review Coordinator
Natural Heritage and Nongame Research Program
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155

**Re: Request for Endangered Resources Review
Black Dog Rebuild Project - Dakota County, Minnesota
Xcel Energy, Inc. / Northern States Power Company**

Dear Ms. Joyal:

Xcel Energy, Inc. (“Xcel Energy”) proposes to rebuild a portion of its 115 kilovolt (“kV”) transmission system between the Black Dog Substation in Burnsville and the Savage Substation in Savage, Minnesota. The Project is referred to as the Black Dog Rebuild Project (“Project”). The Project consists of two parts: 1) installation of approximately 5.1 miles of two new 115 kV transmission lines to interconnect with existing 115 kV transmission lines; and 2) removal of approximately 4.4 miles of two parallel existing 115 kV line transmission lines and structures. The Project is needed to ensure reliable and efficient energy transmission between the two substations and when completed will reduce the overall transmission footprint in the Minnesota River Valley.

On behalf of Xcel Energy, Merjent, Inc. respectfully requests your review of the Minnesota National Heritage Information System (“NHIS”) to determine if rare plants, animals, and natural communities or other significant natural features are known to occur within the Project area. This request is submitted for general information and Project planning purposes so that mitigation measures may be implemented, as necessary, to avoid impacts to known rare plants, animals, and natural communities within the proposed Project area. Enclosed is a completed Minnesota NHIS Data Request Form.

Please note that Xcel Energy is in the process of evaluating siting/routing information and collecting comments and input, and that the proposed route location shown for the new 115 kV transmission lines is preliminary and subject to minor changes through this process. The proposed Project area is depicted in the enclosed U.S. Geological Survey (“USGS”) topographic map and aerial-based map (Figures 1 and 2). Townships, ranges, and sections of the proposed Project area are listed in the following table.

Township	Range	Section(s)	Township Name	County
27N	24E	22, 23, 24, 27, 28, 29, 32, 33, and 34	Burnsville	Dakota

Between Black Dog Substation and I-35, the Project area is located in primarily commercial/industrial, forested, and open lands, and includes a number of existing road and utility corridors. This area is surrounded by lands managed by the U.S. Fish and Wildlife Service as part of the Minnesota Valley National Wildlife Refuge and consists largely of wetlands and a waterbody (Black Dog Lake). Between I-35 and Savage Substation, the Project area consists largely of commercial/industrial lands. Specifically, the Project will occur within and adjacent to an active sand and gravel mine and adjacent to an active landfill.

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If you have questions regarding this project or require additional information, please call Jim Fritz, Permitting Analyst with Xcel Energy at (612) 330-6956; or me at (612) 746-3664.

Sincerely,

MERJENT, INC.



Thomas M. Janssen
Senior Analyst

Enclosures:

- NHIS Data Request Form
- Figure 1 - USGS Topographic Project Location Map
- Figure 2 - Aerial-Based Project Location Map
- GIS Shapefiles of Proposed Project Area (electronic transmittal)

cc: Jim Fritz, Xcel Energy



For Agency Use Only: Received _____ Due _____ RUSH Inv _____ Search Radius _____mi. ER / All Map'd _____ NoR / NoF / NoE / Std / Sub Let _____ Log out _____	#Sec _____ Contact Rqsted? _____ #EOs _____ Survey Rqsted? _____ #Com _____ Related ERDB# _____
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NATURAL HERITAGE INFORMATION SYSTEM (NHIS) DATA REQUEST FORM

Please read the instructions on page 3 before filling out the form. Thank you!

WHO IS REQUESTING THE INFORMATION?

Name and Title _____

Agency/Company _____

Mailing Address _____

(Street) (City) (State) (Zip Code)

Phone _____ e-mail _____ Responses will be sent via email.

If you prefer US Mail check here:

THIS INFORMATION IS BEING REQUESTED FOR A:

- Federal EA State EAW PUC Site Application Watershed Plan
- Federal EIS State EIS Local Government Permit Research Project
- NEPA Checklist AUAR
- Other (describe) _____

INFORMATION WE NEED FROM YOU:

- 1) **Enclose a map** of the project boundary/area of interest (topographic maps or aerial photos are preferred).
- 2) Please **provide a GIS shapefile*** (NAD 83, UTM Zone 15N) of the project boundary/area of interest.
- 3) List the following locational information* (attach additional sheets if necessary):

For Agency Use: Region / MCBS Status	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%; text-align: left;">County</th> <th style="width: 15%; text-align: left;">Township #</th> <th style="width: 15%; text-align: left;">Range #</th> <th style="width: 55%; text-align: left;">Section(s) (please list all sections)</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>	County	Township #	Range #	Section(s) (please list all sections)																	For Agency Use: TRS Confirmed <input type="checkbox"/>
County	Township #	Range #	Section(s) (please list all sections)																			

- 4) Please provide the following information (attach additional sheets if necessary):

Project Name: _____

Project Proposer: _____

Description of Project (including types of disturbance anticipated from the project): _____

Describe the existing land use of the project site. What types of land cover/habitat will be impacted by the proposed project?

List any waterbodies (e.g., rivers, intermittent streams, lakes, wetlands) that may be affected by the proposed project, and how they may be impacted (e.g., dewatering, discharge, riverbed disturbance).

To your knowledge, has the project undergone a previous Natural Heritage review? If so, please list the correspondence #: ERDB # _____. How does this request differ from the previous request (e.g., change in scope, change in boundary, project being revived, project expansion, different phase)?

To your knowledge, have any native plant community or rare species surveys been conducted within the site? If so, please list:

List any DNR Permits or Licenses that you will be applying for or have already applied for as part of this project:

INFORMATION WE PROVIDE TO YOU:

1) The response will include a Natural Heritage letter. If applicable, the letter will discuss potential impacts to rare features.

- Check here if this information is being requested for a formal environmental review document (e.g., EAW, EIS) **and** your company/agency has a staff ecologist who will be making the impact determination **and** you do not want DNR staff to provide any interpretation of impacts.

2) The response will also include an Index Report of known aggregation sites and known occurrences of federally and state-listed plants and animals*within an approximate one-mile radius of the project boundary/area of interest.

- Check here if you would also like geologic features and rare species with no legal status included in the report.

3) If desired, a Detailed Report that contains more information on each occurrence can be obtained. Please note that the Detailed Report may contain specific location information that is protected under *Minnesota Statutes*, section 84.0872, subd. 2, and, as such, the Detailed Report may not be included in any public document (e.g., an EAW). The Index Report and Natural Heritage letter can be included in any public environmental review document.

- Check here if you would also like to receive a Detailed Report.

FEES / TURNAROUND TIME

There is a fee* for this service. Requests generally take **3-4 weeks** from date of receipt to process, and are processed in the order received. Rush requests* are processed in 2 weeks or less if workloads allow, but are not guaranteed.

- Check here to RUSH this request. You will be charged an additional \$50.

I have read the entire form, and the information supplied above is complete and accurate. I understand that material supplied to me from the Minnesota Natural Heritage Information System is copyrighted and that I am not permitted to reproduce or publish any of this copyrighted material without prior written permission from the Minnesota DNR. Further, if permission to publish is given, I understand that I must credit the Minnesota Division of Ecological Resources, Minnesota Department of Natural Resources, as the source of the material.

Signature
(required)

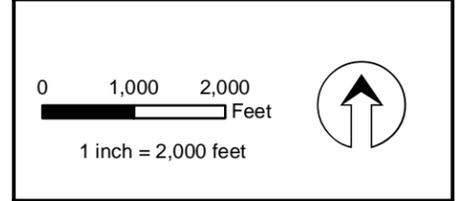
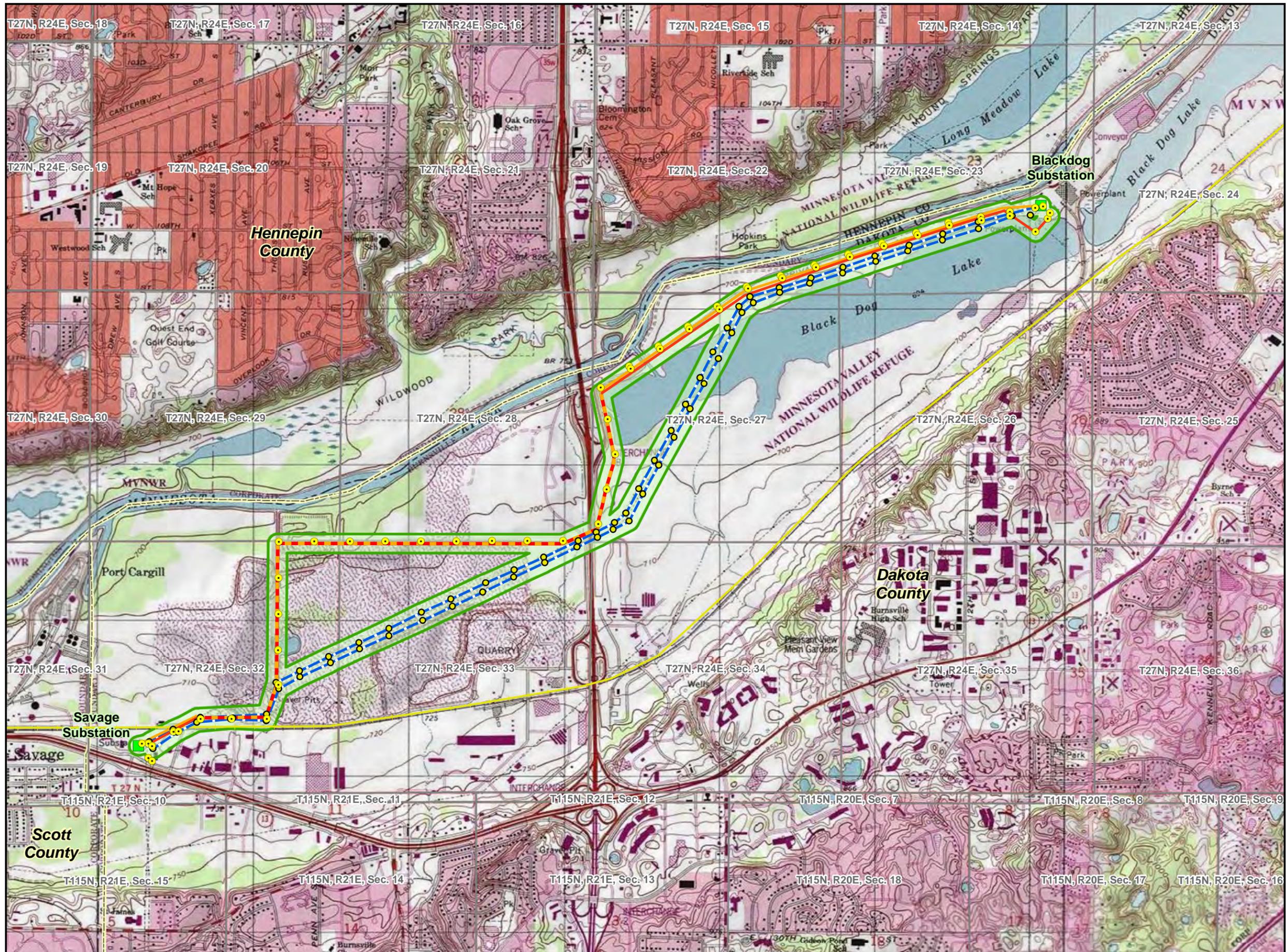
Note: Digital signatures representing the name of a person shall be sufficient to show that such person has signed this document.

Mail or email completed form to:

Lisa Joyal, Natural Heritage Review Coordinator
Division of Ecological Resources
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155
lisa.joyal@state.mn.us

Form is available at
http://files.dnr.state.mn.us/eco/nhnrp/nhis_data_request.pdf

Revised July 2009



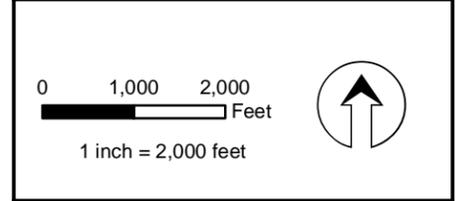
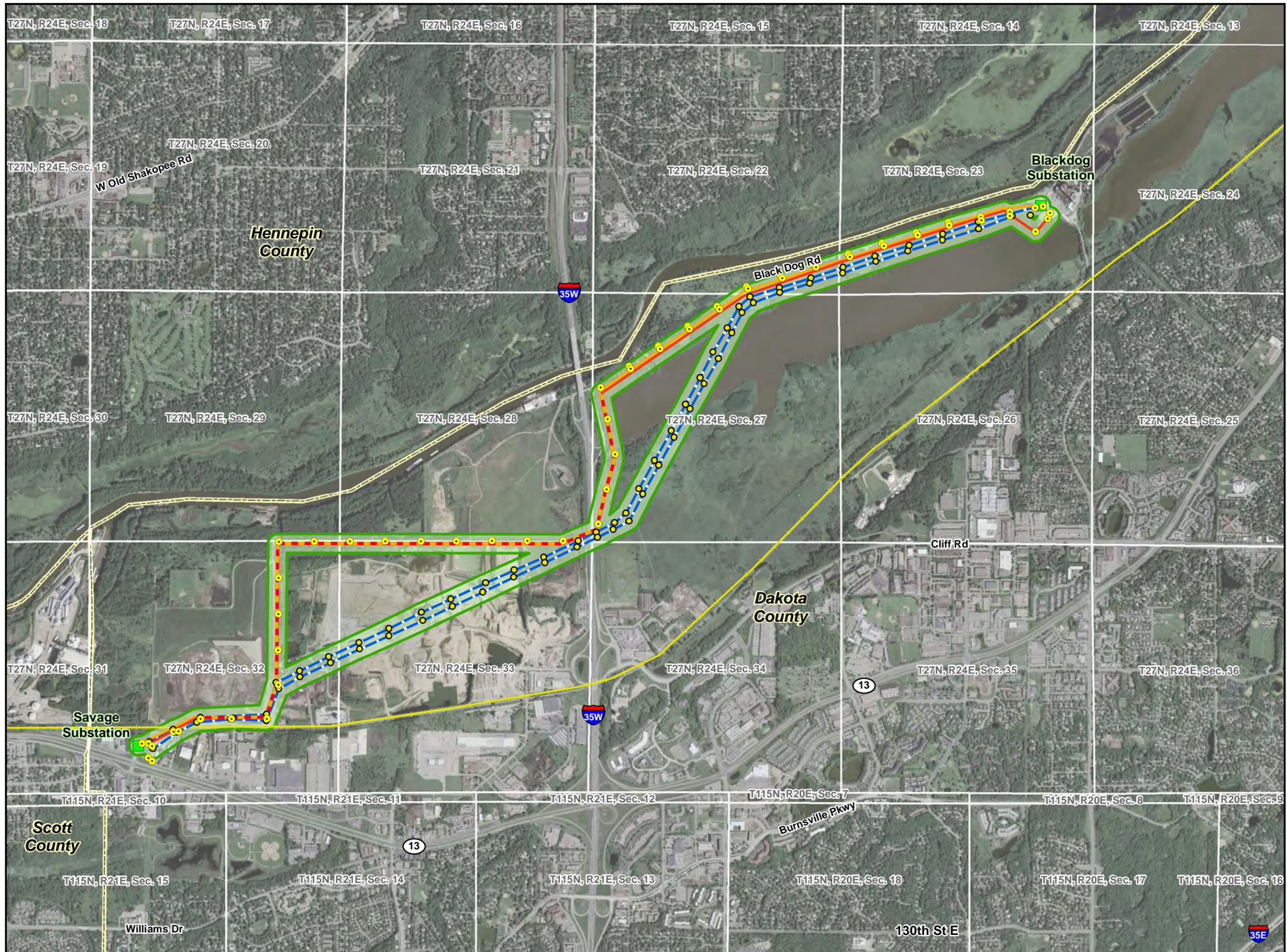
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FIGURE 1
USGS PROJECT
LOCATION MAP

Black Dog Rebuild Project
Xcel Energy
Burnsville, Minnesota

Source: Aerial Photography: FSA 2009/2010
 All Other Data Provided by Xcel Energy, Merjent
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 Revision Date: 03/11/2011



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FIGURE 2
AERIAL-BASED PROJECT LOCATION MAP

Black Dog Rebuild Project
Xcel Energy
Burnsville, Minnesota

Source: Aerial Photography: FSA 2009/2010
 All Other Data Provided by Xcel Energy, Merjent
 This information is for review purposes only and is subject to change.
 Revision Date: 03/11/2011



Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: lisa.joyal@state.mn.us

May 25, 2011

Correspondence # ERDB 20110445

Mr. Tom Janssen
Merjent, Inc.
615 First Ave. NE, Suite 425
Minneapolis, MN 55413

RE: Natural Heritage Review of the proposed Black Dog Rebuild;
T27N R24W Sections 22, 23, 27-29, & 32-34; Dakota County

Dear Mr. Janssen,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, see the enclosed database reports; please visit the Rare Species Guide at <http://www.dnr.state.mn.us/rsg/index.html> for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following **rare features may be adversely affected** by the proposed project:

- Blanding's turtles (*Emydoidea blandingii*), a state-listed threatened species, have been reported from the vicinity of the proposed project and may be encountered on site. If Blanding's turtles are found on the site, please remember that state law and rules prohibit the destruction of threatened or endangered species, except under certain prescribed conditions. If turtles are in imminent danger they should be moved by hand out of harm's way, otherwise they should be left undisturbed.

For your information, I have attached a Blanding's turtle fact sheet that describes the habitat use and life history of this species. The fact sheet also provides two lists of recommendations for avoiding and minimizing impacts to this rare turtle. **Please refer to the first list of recommendations for your project.** If greater protection for turtles is desired, the second list of additional recommendations can also be implemented. The attached flyer should be given to all contractors working in the area.

- Peregrine falcons (*Falco peregrinus*), a state-listed threatened species, have nested annually on a smokestack at the Black Dog Plant since 1993. It is unlikely that the proposed construction activities will affect these birds, but if the birds exhibit unusual behaviors or other signs of potential distress during construction please contact Krista Larson, Central Region Nongame Specialist, at 651-259-5775.
- Both the existing line and the proposed line go through a Seepage Meadow/Carr native plant community (EO ID #2888 on enclosed reports) within an area that the Minnesota County Biological Survey (MCBS) has identified as a Site of High Biodiversity Significance (see enclosed map; GIS shapefiles of MCBS Sites of Biodiversity Significance and MCBS Native Plant Communities can be downloaded from the DNR Data Deli at <http://deli.dnr.state.mn.us>). Sites of Biodiversity Significance have varying levels of native biodiversity and are ranked based on the relative significance of this biodiversity at a statewide level. Sites ranked as High contain

very good quality occurrences of the rarest species, high quality examples of the rare native plant communities, and/or important functional landscapes. Seepage Meadow/Carr native plant communities have a state rank of 3, indicating that they are vulnerable to extirpation within Minnesota.

Disturbance to this ecologically significant area should be minimized to the extent feasible. Actions to minimize disturbance may include, but are not limited to, the following recommendations: (1) As much as possible, operate within already-disturbed areas; (2) Minimize vehicular disturbance in the area (allow only vehicles necessary for installation); (3) Inspect and clean all equipment prior to bringing it to the site to prevent the introduction and spread of exotic species; (4) Do not park equipment or stockpile supplies in the area; (5) If possible, do work in autumn or winter, to avoid damaging plants during the growing season; (6) Reduce runoff by completing the work as rapidly as possible and using erosion control measures such as straw bales or silt fencing; (7) Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible; (8) Use only invasive-free mulches, topsoils, and seed mixes.

If applicable, the Seepage Meadow/Carr may qualify as a “rare natural community” under the Wetland Conservation Act. If you have any questions regarding this, please contact Doug Norris, DNR Wetlands Program Coordinator, at 651-259-5125.

- Several calcareous fens have been documented within Site of High Biodiversity Significance mentioned above. These fens contain known occurrences of state-listed threatened plants. A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota (see the attached fact sheet). Calcareous fens are designated as “outstanding resource value waters” in water quality regulations administered by the MPCA (*Minnesota Rules*, part 7050.0180) and they are given special protection through *Minnesota Rules*, parts 8420.1010 to 8240.1060. The Wetlands Conservation Act, authorized by *Minnesota Statutes*, section 103G.223, states that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by any activity, except as provided for in a management plan approved by the commissioner of the Department of Natural Resources. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away.

The fens should be considered avoidance areas (as proposed, it appears that the proposed activities will avoid the fens). In addition, the DNR would have concerns regarding any activities that might affect groundwater flows, including groundwater pumping or discharge. If the project has the potential to alter the hydrological conditions of the fen, or if you have any questions regarding calcareous fen regulations, please contact Doug Norris, DNR Wetlands Program Coordinator, at 651-259-5125. If it is determined that the project will affect any of the fens, please contact me before construction is initiated as we will need to discuss potential effects to state-listed threatened species. Minnesota’s endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota’s rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area.

The enclosed results include an Index Report and a Detailed Report of records in the Rare Features Database, the main database of the NHIS. To control the release of specific location information, which might result in the destruction of a rare feature, both reports are copyrighted.

The Index Report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an environmental review document (e.g., EAW or EIS), municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the index report for any other purpose, please contact me to request written permission. **The Detailed Report is for your personal use only as it may include specific location information that is considered nonpublic data under Minnesota Statutes, section 84.0872, subd. 2. If you wish to reprint or publish the Detailed Report for any purpose, please contact me to request written permission.**

For environmental review purposes, the Natural Heritage letter and database reports are valid for one year; they are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), federally-listed as threatened and state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,



Lisa Joyal
Natural Heritage Review Coordinator

enc. Rare Features Database: Index Report
Rare Features Database: Detail Report
Rare Features Database Reports: An Explanation of Fields
Blanding's Turtle Fact Sheet and Flyer
Map
Calcareous Fen Fact Sheet

cc: Jamie Schrenzel, DNR
Melissa Doperalski, DNR
Krista Larson, DNR
Hannah Texler, DNR
Doug Norris, DNR
Craig Wills, DNR
Deborah Pile, EFP

Links: MCBS Sites of Biodiversity Significance
http://www.dnr.state.mn.us/eco/mcbs/biodiversity_guidelines.html
MCBS Native Plant Communities
<http://www.dnr.state.mn.us/npc/index.html>

Printed May 2011
Data valid for one year

Minnesota Natural Heritage Information System
Index Report of records within 1 mile radius of:
ERDB #20110445 - Black Dog Rebuild Project
T27N R24W Sections 22, 23, 27-29, & 32-34
Dakota County

Rare Features Database:

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Vertebrate Animal						
<u>Acris crepitans</u> (Northern Cricket Frog) #25 T27N R24W S28; Hennepin County		END	S1	G5	2006-06-28	25374
<u>Alosa chrysochloris</u> (Skipjack Herring) #2 T27N R24W S28, T27N R24W S29, T27N R24W S33; Dakota, Hennepin County		SPC	S3	G5	1899-07-01	7128
<u>Emydoidea blandingii</u> (Blanding's Turtle) #228 T27N R24W S32, T115N R21W S10, T115N R21W S15, T27N R24W S31, T [...]; Dakota, Scott County		THR	S2	G4	1997-06	7396
<u>Emydoidea blandingii</u> (Blanding's Turtle) #474 T115N R20W S7, T115N R21W S12, T115N R20W S18, T115N R21W S13, T [...]; Dakota County		THR	S2	G4	1989-07-11	11194
<u>Emydoidea blandingii</u> (Blanding's Turtle) #612 T27N R24W S21; Hennepin County		THR	S2	G4	1992-08-24	14819
<u>Falco peregrinus</u> (Peregrine Falcon) #56 T27N R24W S23; Dakota County	No Status	THR	S2B	G4	2010-06-10	16125
<u>Haliaeetus leucocephalus</u> (Bald Eagle) #1725 T27N R24W S29; Hennepin County		SPC	S3B,S3N	G5	2004	24648
<u>Haliaeetus leucocephalus</u> (Bald Eagle) #2351 T27N R24W S13, T27N R24W S24; Hennepin County		SPC	S3B,S3N	G5	2005	31995
<u>Ictiobus niger</u> (Black Buffalo) #18 T27N R24W S13, T27N R24W S24, T27N R24W S29; Dakota, Hennepin County		SPC	S3	G5	2006-05-19	30131
<u>Polyodon spathula</u> (Paddlefish) #4 T27N R24W S23, T115N R23W S16, T115N R23W S17, T115N R38W S28, T [...]; Blue Earth, Brown, Carver, Chippewa, [...] County		THR	S2	G4	2004-12-04	16501
<u>Wilsonia citrina</u> (Hooded Warbler) #10 T27N R24W S31, T115N R21W S16, T115N R21W S9, T115N R21W S10, T [...]; Scott County		SPC	S3B	G5	1980-05-19	25065
Invertebrate Animal						
<u>Actinonaias ligamentina</u> (Mucket) #162 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County		THR	S2	G5	1989-10-09	28558

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Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Invertebrate Animal						
<u>Actinonaias ligamentina</u> (Mucket) #268 T27N R24W S29, T27N R24W S22, T27N R24W S23; Dakota, Hennepin County		THR	S2	G5	2006-11-PRE	34176
<u>Arcidens confragosus</u> (Rock Pocketbook) #11 T28N R22W S6, T115N R21W S9, T27N R23W S5, T28N R23W S28, T [...]; Dakota, Hennepin, Ramsey, Scott County		END	S1	G4	2005-09-08-09	17106
<u>Arcidens confragosus</u> (Rock Pocketbook) #26 T114N R25W S35, T109N R29W S7, T109N R30W S12, T114N R24W S30, T [...]; Blue Earth, Brown, Carver, Dakota, [...] County		END	S1	G4	2006-11-PRE	33200
<u>Ellipsaria lineolata</u> (Butterfly) #51 T115N R21W S9, T27N R24W S27, T27N R24W S28, T115N R21W S4, T [...]; Dakota, Hennepin, Scott County		THR	S2	G4	2005-09-(08-09)	34198
<u>Elliptio crassidens</u> (Elephant-ear) #7 T27N R24W S13, T27N R24W S28, T115N R21W S9, T27N R24W S29, T [...]; Dakota, Hennepin, Scott County		END	S1	G5	1977-Pre	28164
<u>Elliptio dilatata</u> (Spike) #106 T27N R24W S13; Dakota, Hennepin County		SPC	S3	G5	1989-08-31	29498
<u>Elliptio dilatata</u> (Spike) #134 T27N R24W S28, T27N R24W S22, T27N R24W S27; Dakota, Hennepin County		SPC	S3	G5	1989-10-09	28719
<u>Elliptio dilatata</u> (Spike) #230 T27N R24W S29, T27N R24W S23, T27N R24W S22; Dakota, Hennepin County		SPC	S3	G5	2006-11-PRE	34207
<u>Fusconaia ebena</u> (Ebonyshell) #8 T28N R23W S22, T28N R23W S27, T27N R24W S13, T115N R21W S6, T [...]; Dakota, Hennepin, Ramsey, Scott County		END	S1	G4G5	2001-07-PRE	17119
<u>Lampsilis higginsii</u> (Higgins Eye) #18 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County	LE	END	S1	G1	1989-Pre	28601
<u>Lampsilis teres</u> (Yellow Sandshell) #10 T109N R27W S36, T111N R26W S22, T111N R26W S21, T115N R23W S20, T [...]; Blue Earth, Brown, Carver, Dakota, [...] County		END	S1	G5	1989-10-09	17146
<u>Lasmigona costata</u> (Fluted-shell) #221 T27N R24W S29, T27N R24W S22, T27N R24W S23; Dakota, Hennepin County		SPC	S3	G5	2006-11-PRE	34236

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Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Invertebrate Animal						
<u>Ligumia recta</u> (Black Sandshell) #521 T27N R24W S29, T27N R24W S22, T27N R24W S23; Dakota, Hennepin County		SPC	S3	G5	2006-11-PRE	34248
<u>Megaloniaias nervosa</u> (Washboard) #26 T27N R24W S27, T115N R21W S4, T115N R21W S9, T115N R21W S6, T [...]; Dakota, Hennepin, Scott County		THR	S2	G5	2006-11-PRE	34259
<u>Obovaria olivaria</u> (Hickorynut) #87 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County		SPC	S3	G4	1989-10-09	28632
<u>Obovaria olivaria</u> (Hickorynut) #149 T27N R24W S29, T27N R24W S23, T27N R24W S22; Dakota, Hennepin County		SPC	S3	G4	2006-11-PRE	34263
<u>Pleurobema coccineum</u> (Round Pigtoe) #89 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County		THR	S2	G4G5	1989-10-09	28556
<u>Pleurobema coccineum</u> (Round Pigtoe) #156 T27N R24W S29, T27N R24W S22, T27N R24W S23; Dakota, Hennepin County		THR	S2	G4G5	2006-11-PRE	34270
<u>Quadrula fragosa</u> (Winged Mapleleaf) #8 T27N R24W S28, T27N R24W S29, T27N R24W S22, T27N R24W S23; Dakota, Hennepin County	LE	END	S1	G1	1989-10-Pre	28555
<u>Quadrula metanevra</u> (Monkeyface) #70 T27N R24W S29, T27N R24W S23, T27N R24W S22; Dakota, Hennepin County		THR	S2	G4	2006-11-PRE	34280
<u>Quadrula nodulata</u> (Wartyback) #10 T28N R22W S7, T28N R23W S28, T28N R23W S14, T27N R24W S27, T [...]; Dakota, Hennepin, Ramsey, Scott County		END	S1	G4	2007-09-26	17141
<u>Tritogonia verrucosa</u> (Pistolgrip) #28 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County		THR	S2	G4G5	1989-10-09	17150
<u>Tritogonia verrucosa</u> (Pistolgrip) #71 T27N R24W S29; Dakota, Hennepin County		THR	S2	G4G5	2006-11-PRE	34292
Animal Assemblage						
<u>Freshwater Mussel Concentration Area</u> (Mussel Sampling Site) #140 T27N R24W S28, T27N R24W S27; Dakota, Hennepin County		N/A	SNR	G3	1989-08-28	14980

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Rare Features Database:

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Vascular Plant						
<u>Agalinis auriculata</u> (Eared False Foxglove) #1 T27N R24W S33, T27N R24W S32; Dakota County		END	S1	G3	1956-10-01	3359
<u>Arnoglossum plantagineum</u> (Tuberous Indian-plantain) #35 T27N R24W S26; Dakota County		THR	S2	G4G5	1993-06-02	17558
<u>Arnoglossum plantagineum</u> (Tuberous Indian-plantain) #47 T27N R24W S27; Dakota County		THR	S2	G4G5	2003-05-20	26812
<u>Asclepias sullivantii</u> (Sullivant's Milkweed) #4 T27N R24W S33, T27N R24W S32; Dakota County		THR	S2	G5	1945-07-25	3546
<u>Carex sterilis</u> (Sterile Sedge) #11 T27N R24W S34; Dakota County		THR	S2	G4	1980-06-08	4103
<u>Cirsium hillii</u> (Hill's Thistle) #3 T115N R21W S11, T27N R24W S28, T27N R24W S34, T27N R24W S29, T [...]; Dakota County		SPC	S3	G3	1945-07-25	4169
<u>Cladium mariscoides</u> (Twig-rush) #5 T27N R24W S34, T27N R24W S27; Dakota County		SPC	S3	G5	1981-03-28	4198
<u>Cypripedium candidum</u> (Small White Lady's-slipper) #20 T27N R24W S34, T27N R24W S27; Dakota County		SPC	S3	G4	1980-06-08	4302
<u>Cypripedium candidum</u> (Small White Lady's-slipper) #21 T27N R24W S34, T27N R24W S27; Dakota County		SPC	S3	G4	1980-06-08	4303
<u>Cypripedium candidum</u> (Small White Lady's-slipper) #23 T27N R24W S34, T27N R24W S27; Dakota County		SPC	S3	G4	1982-05-18	4305
<u>Cypripedium candidum</u> (Small White Lady's-slipper) #218 T27N R24W S26; Dakota County		SPC	S3	G4	1993-06-04	17299
<u>Rhynchospora capillacea</u> (Hair-like Beak-rush) #7 T27N R24W S34; Dakota County		THR	S2	G4	1981-07-20	5433
<u>Scleria verticillata</u> (Whorled Nut-rush) #7 T27N R24W S34, T27N R24W S27; Dakota County		THR	S2	G5	1981-07-20	5568

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Vascular Plant						
<u>Trillium nivale</u> (Snow Trillium) #29 T27N R24W S14; Hennepin County		SPC	S3	G4	2008-04-18	15436
<u>Valeriana edulis var. ciliata</u> (Valerian) #10 T27N R24W S34, T27N R24W S27; Dakota County		THR	S2	G5T3	2003-05-20	5835
<u>Valeriana edulis var. ciliata</u> (Valerian) #51 T27N R24W S26; Dakota County		THR	S2	G5T3	1993-06-04	17316
<u>Valeriana edulis var. ciliata</u> (Valerian) #77 T115N R21W S15; Dakota County		THR	S2	G5T3	1996-06-07	18242
Native Plant Community (This may not represent a complete list. Also see MCBS Native Plant Communities at http://deli.dnr.state.mn.us.)						
<u>Black Ash - (Red Maple) Seepage Swamp Type</u> #40 T27N R24W S28, T27N R24W S29; Hennepin County	(NPC Code: WFs57a)	N/A	S2	GNR	1995-06-23	21566
<u>Black Ash - (Red Maple) Seepage Swamp Type</u> #41 T27N R24W S13, T27N R24W S14; Hennepin County	(NPC Code: WFs57a)	N/A	S2	GNR	1995-06-20	21564
<u>Calcareous Fen (Southeastern) Type</u> #9 T27N R24W S34, T27N R24W S27; Dakota County	(NPC Code: OPp93c)	N/A	S1	GNR	1980-06	242
<u>Calcareous Fen (Southeastern) Type</u> #18 T27N R24W S34, T27N R24W S27; Dakota County	(NPC Code: OPp93c)	N/A	S1	GNR	1980-06	14373
<u>Calcareous Fen (Southeastern) Type</u> #25 T27N R23W S19, T27N R24W S24; Dakota County	(NPC Code: OPp93c)	N/A	S1	GNR	1993-07-21	16550
<u>Calcareous Fen (Southeastern) Type</u> #46 T27N R24W S34, T27N R24W S27; Dakota County	(NPC Code: OPp93c)	N/A	S1	GNR	2003-05-20	31929
<u>Dry Sand - Gravel Prairie (Southern) Type</u> #87 T27N R24W S28, T27N R24W S21; Hennepin County	(NPC Code: UPs13b)	N/A	S2	GNR	1995-08-24	21568
<u>Dry Sand - Gravel Prairie (Southern) Type</u> #89 T27N R24W S28, T27N R24W S20, T27N R24W S29, T27N R24W S21; Hennepin County	(NPC Code: UPs13b)	N/A	S2	GNR	1995-06-23	1355

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Native Plant Community (This may not represent a complete list. Also see MCBS Native Plant Communities at http://deli.dnr.state.mn.us.)						
<u>Mesic Prairie (Southern) Type #374</u> T27N R24W S34, T27N R24W S27; Dakota County	(NPC Code: UPs23a)	N/A	S2	GNR	2000-09-01	1303
<u>Native Plant Community, Undetermined Class #1359</u> T27N R24W S27, T27N R24W S22; Dakota, Hennepin County	(NPC Code:)	N/A	SNR	GNR	1995-06-22	21565
<u>Native Plant Community, Undetermined Class #1567</u> T27N R24W S31, T115N R21W S16, T115N R21W S9, T115N R21W S17; Scott County	(NPC Code:)	N/A	SNR	GNR	1980-10-25	8480
<u>Native Plant Community, Undetermined Class #2128</u> T27N R24W S27; Dakota County	(NPC Code:)	N/A	SNR	GNR	1994-09-01	2888
<u>Native Plant Community, Undetermined Class #2133</u> T27N R24W S24; Dakota County	(NPC Code:)	N/A	SNR	GNR	1994-10-13	2889
<u>Southern Wet Ash Swamp Class #39</u> T27N R24W S13, T27N R24W S14, T27N R24W S23; Hennepin County	(NPC Code: WFs57)	N/A	S2	GNR	1995-06-22	21563

Records Printed = 67

Minnesota's endangered species law (*Minnesota Statutes*, section 84.0895) and associated rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. For plants, taking includes digging or destroying. For animals, taking includes pursuing, capturing, or killing.

Rare Features Database Reports: An Explanation of Fields

The Rare Features Database is part of the Natural Heritage Information System, and is maintained by the Division of Ecological and Water Resources, Minnesota Department of Natural Resources (DNR).

Please note that the database reports are copyrighted and may not be reproduced without permission

Field Name: [Full (non-abbreviated) field name, if different]. Further explanation of field.

-E-

Element Name and Occ #: [Element Name and Occurrence Number]. The Element is the name of the rare feature. For plant and animal species records, this field holds the scientific name followed by the common name in parentheses; for all other elements (such as native plant communities, which have no scientific name) it is solely the element name. Native plant community names correspond to Minnesota's Native Plant Community Classification (Version 2.0). The Occurrence Number, in combination with the Element Name, uniquely identifies each record.

EO Data: [Element Occurrence Data]. For species elements, this field contains data collected on the biology of the Element Occurrence* (EO), including the number of individuals, vigor, habitat, soils, associated species, peculiar characteristics, etc. For native plant community elements, this field is a summary text description of the vegetation of the EO, including structure (strata) and composition (dominant/characteristic species), heterogeneity, successional stage/dynamics, any unique aspects of the community or additional noteworthy species (including animals). Note that this is a new field and it has not been filled out for many of the records that were collected prior to conversion to the new database system. Some of the information meeting the field definition may be found in the General Description field.

EO ID#: [Element Occurrence Identification Number]. Unique identifier for each Element Occurrence record.

EO Rank: [Element Occurrence Rank]. An evaluation of the quality and condition of an Element Occurrence (EO) from A (highest) to D (lowest). Represents a comparative evaluation of: 1) quality as determined by representativeness of the occurrence especially as compared to EO specifications and including maturity, size, numbers, etc. 2) condition (how much has the site and the EO itself been damaged or altered from its optimal condition and character). 3) viability (the long-term prospects for continued existence of this occurrence - used in ranking species only). EO Ranks are assigned based on recent fieldwork by knowledgeable individuals.

Extent Known?: A value that indicates whether the full extent of the Element is known (i.e., it has been determined through field survey) at that location. If null, the value has not been determined.

-F-

Federal Status: Status of species under the U.S. Endangered Species Act: LE = endangered; LT = threatened; LE,LT = listed endangered in part of its range, listed threatened in another part of its range; LT,PDL = listed threatened, proposed for delisting; C = candidate for listing. If null or "No Status" the species has no federal status.

First Observed Date: Date that the Element Occurrence was first reported at the site in format YYYY-MM-DD. A year followed by "Pre" indicates that the observed date was sometime prior to the date listed, but the exact date is unknown.

-G-

General Description: General description or word picture of the area where the Element Occurrence (EO) is located (i.e., the physical setting/context surrounding the EO), including a list of adjacent communities. When available, information on surrounding land use may be included. Note that the information tracked in this field is now more narrowly defined than it was in the old database system, and some of the information still in this field more accurately meets the definition of the new EO Data field. We are working to clean up the records so that the information in the two fields corresponds to the current field explanations described herein. Also note that the use of uppercase in sentences in this field is not significant but rather an artifact of transferring data from the old database system to the new system.

Global Rank: The global (i.e., range-wide) assessment of the relative rarity or imperilment of the species or community. Ranges from G1 (critically imperiled due to extreme rarity on a world-wide basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by NatureServe, an international network of natural heritage programs and conservation data centers.

-L-

Last Observed Date: Date that the Element Occurrence was last observed to be extant at the site in format YYYY-MM-DD.

Last Survey Date: Date of the most recent field survey for the Element Occurrence, regardless of whether it was found during the visit. If the field is blank, assume the date is the same as the Last Observed Date.

Location Description: County or Counties in which the Element Occurrence was documented followed by Township, Range, and Section information (not listed in any particular order). Each unique Township, Range, and Section combination is separated by a comma. In some cases, there are too many Township, Range, and Section combinations to list in the field, in which case, the information will be replaced with, "Legal description is too lengthy to fit in allotted space".

-M-

Managed Area(s): Name of the federally, state, locally, or privately managed park, forest, refuge, preserve, etc., containing the occurrence, if any. If this field is blank, the element probably occurs on private land. If "(Statutory Boundary)" occurs after the name of a managed area, the location may be a private inholding within the statutory boundary of a state forest or park.

MN Status: [Minnesota Status]. Legal status of plant and animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; NON = tracked, but no legal status. Native plant communities, geological features, and colonial waterbird nesting sites do not have any legal status under the Endangered Species Law and are represented by a N/A.

-N-

NPC Classification (v1.5): Native plant community name in Minnesota's Native Vegetation: A Key to Natural Communities (Version 1.5). This earlier classification has been replaced by Minnesota's Native Plant Community Classification (Version 2.0).

-O-

Observed Area: The total area of the Element Occurrence, in acres, which is measured or estimated during fieldwork. If null, the value has not been determined.

Ownership Type: Indicates whether the land on which the Element Occurrence was located was publicly or privately owned; for publicly owned land, the agency with management responsibility is listed, if known.

-S-

Site Name: The name of the site(s) where the Element Occurrence is located. Sites are natural areas of land with boundaries determined and mapped according to biological and ecological considerations.

Survey Site #/Name: The name of the survey site, if applicable, where the Element Occurrence is located. Survey sites are sites that provide a geographic framework for recording and storing data, but their boundaries are not based on biological and ecological considerations. Minnesota County Biological Survey site numbers, if applicable, are also listed in this field.

Survey Type: Information on the type of survey used to collect information on the Element Occurrence.

Surveyor(s): Name(s) of the person(s) that collected survey information on the Element Occurrence.

State Rank: Rank that best characterizes the relative rarity or endangerment of the taxon or plant community in Minnesota. The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available. S1 = Critically imperiled in Minnesota because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. S2 = Imperiled in Minnesota because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. S3 = Vulnerable in Minnesota either because rare or uncommon, or found in a restricted range, or because of other factors making it vulnerable to extirpation. S4 = Apparently secure in Minnesota, usually widespread. S5 = Demonstrably secure in Minnesota, essentially ineradicable under present conditions. SH = Of historical occurrence in the state, perhaps having not been verified in the past 20 years, but suspected to be still extant. An element would become SH without the 20-year delay if the only known occurrences in the state were destroyed or if it had been extensively and unsuccessfully looked for. SNR = Rank not yet assessed. SU = Unable to rank. SX = Presumed extinct in Minnesota. SNA = Rank not applicable. S#S# = Range Rank: a numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. S#B, S#N = Used only for migratory animals, whereby B refers to the breeding population of the element in Minnesota and N refers to the non-breeding population of the element in Minnesota.

-V-

Vegetation Plot: Code(s) for any vegetation plot data that have been collected within this Element Occurrence (i.e., either Releve Number or the word "RELEVE" indicates that a releve has been collected).

* Element Occurrence – an area of land and/or water in which an Element (i.e., a rare species or community) is, or was, present, and which has practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. Specifications for each species determine whether multiple observations should be considered 1 Element Occurrence or 2, based on minimum separation distance and barriers to movement.

Data Security

Locations of some rare features must be treated as sensitive information because widespread knowledge of these locations could result in harm to the rare features. For example, wildflowers such as orchids and economically valuable plants such as ginseng are vulnerable to exploitation by collectors; other species, such as bald eagles, are sensitive to disturbance by observers. For this reason, we prefer that publications not identify the precise locations of vulnerable species. We suggest describing the location only to the nearest section. If this is not acceptable for your purposes, please call and discuss this issue with the Natural Heritage Review Coordinator at 651- 259-5109.

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle
(Emydoidea blandingii)

Minnesota Status: Threatened
Federal Status: none

State Rank¹: S2
Global Rank¹: G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (e.g., cattails, water lilies) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding's turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, raccoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	List 2. Additional recommendations for areas known to be of state-wide importance to Blanding's turtles.
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is <u>critical</u> that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1 st and before June 1 st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is *very important* that the fencing be **removed before August 1st** so the young turtles can escape from the nest when they hatch!

REFERENCES

- ¹Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). <http://www.natureserve.org/ranking.htm> (15 April 2001).
- Coffin, B., and L. Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

REFERENCES (cont.)

- Moriarty, J. J., and M. Linck. 1994. Suggested guidelines for projects occurring in Blanding's turtle habitat. Unpublished report to the Minnesota DNR. 8 pp.
- Oldfield, B., and J. J. Moriarty. 1994. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press, Minneapolis, 237 pp.
- Sajwaj, T. D., and J. W. Lang. 2000. Thermal ecology of Blanding's turtle in central Minnesota. *Chelonian Conservation and Biology* 3(4):626-636.

CAUTION



BLANDING'S TURTLES MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are state-listed as Threatened and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-308-2641); Grand Rapids (218-327-4518); New Ulm (507-359-6033); Rochester (507-280-5070); or St. Paul (651-259-5764).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

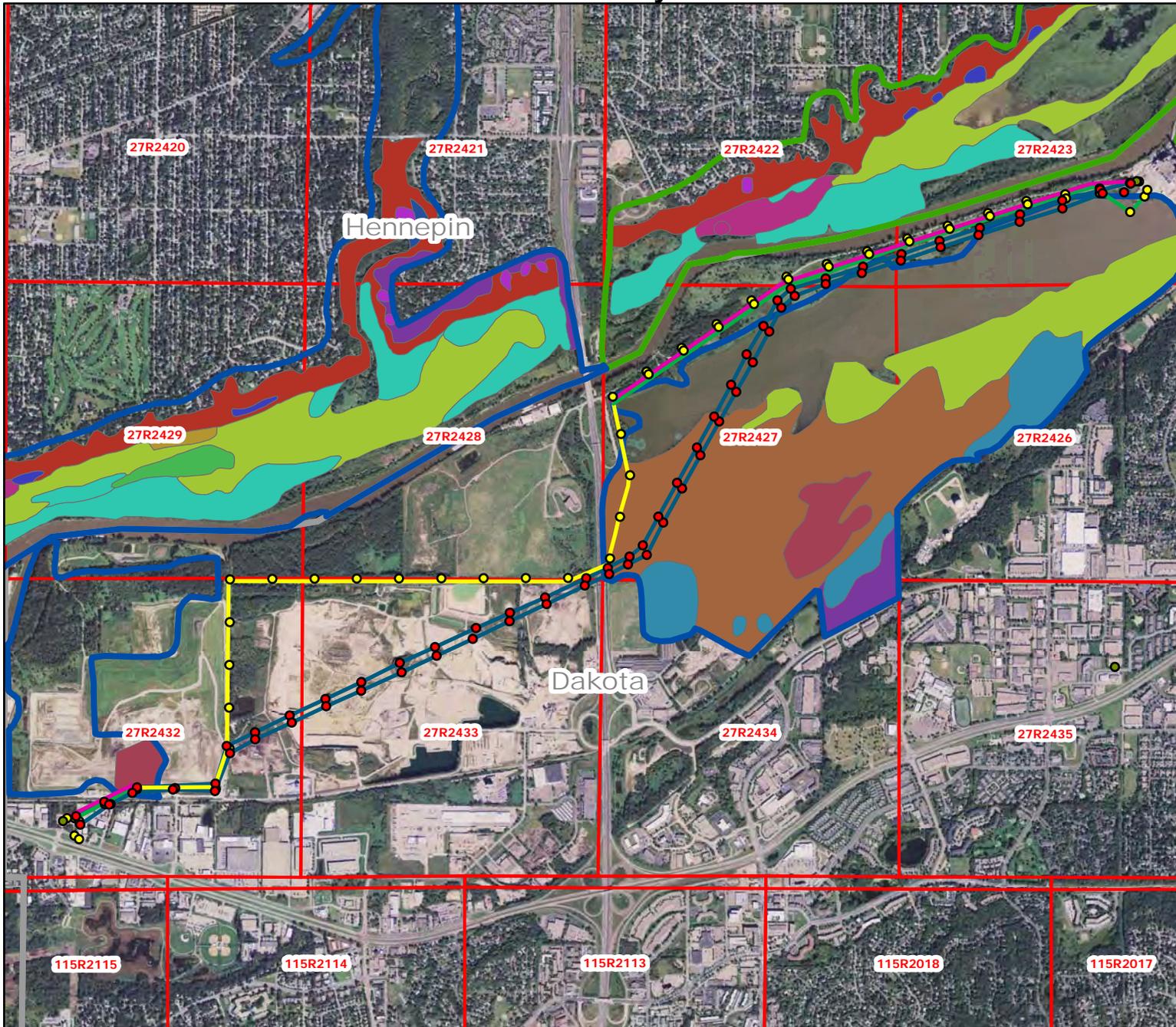
**BLANDING'S TURTLES DO NOT MAKE GOOD PETS
IT IS ILLEGAL TO KEEP THIS THREATENED SPECIES IN CAPTIVITY**

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Blanding's Turtle Fact Sheet for full recommendations)

- This flyer should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles that are in imminent danger should be moved, by hand, out of harms way. Turtles that are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest and do not allow pets near the nest.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

ERDB #20110445 - Black Dog Rebuild Project
 T27N R24W Sections 22, 23, 27-29, & 32-34
 Dakota County



Legend

- existing_structures_0861_0844
- MN_substations
- structs_0844and0861
- Line_0844
- Line_0861
- Line_0861_0844_DC
- Line_Removal2

Sites of Biodiversity

- Outstanding
- High
- Moderate
- Below

Native Plant Communities

- Black Ash - (Red Maple) Seepage Swamp
- Bulrush Marsh (Northern)
- Calcareous Fen (Southeastern)
- Dry Sand - Gravel Prairie (Southern)
- Elm - Basswood - Black Ash - (Hackberry)
- Mesic Prairie (Southern)
- Other Water Body
- Pin Oak - Bur Oak Woodland
- Red Oak - Sugar Maple - Basswood
- Red Oak - White Oak
- Sedge Meadow
- Seepage Meadow/Carr
- Silver Maple - (Virginia Creeper)

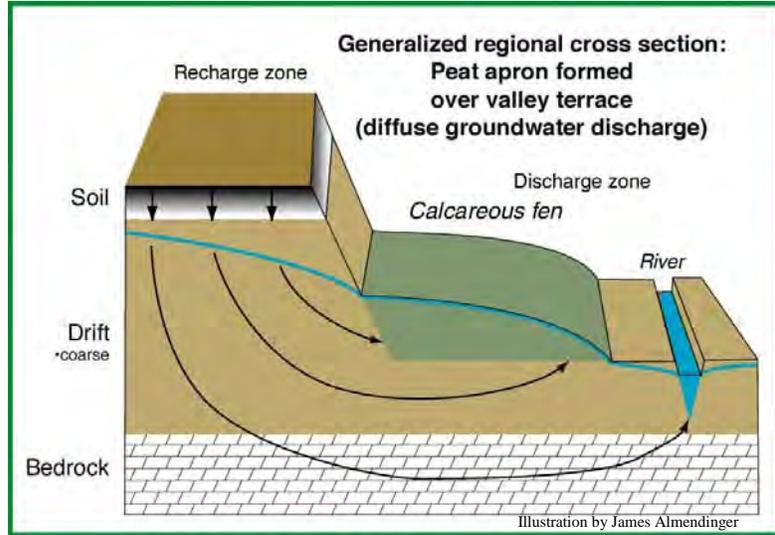


Copyright 2011, State of Minnesota, DNR
 Rare Feature, Prairie Railroad Survey, Native Plant Community,
 and Sites of Biodiversity Significance data are from the
 Division of Ecological Resource's Natural Heritage Information System.
 The absence of rare features for a particular location should not be
 construed to mean that the Division is confident rare features are absent
 from that location.

WHAT IS A CALCAREOUS SEEPAGE FEN?

Calcareous fens are rare and distinctive wetlands characterized by a substrate of non-acidic peat and dependent on a constant supply of cold, oxygen-poor groundwater rich in calcium and magnesium bicarbonates. This calcium-rich environment supports a plant community dominated by “calciphiles,” or calcium-loving species. These fens typically occur on slight slopes where upwelling water eventually drains away and where surface water inputs are minimal. Sometimes they occur as domes of peat that grow to the

height of the hydraulic head. These settings create an unusual wetland regime where the substrate is almost always saturated to the surface, but flooding is rare and brief. Shallow pools of water in which marl precipitates are typically present surrounded by low, tussocky, grass- and sedge-dominated vegetation. The substrate is springy or quaking underfoot. The figures above and below illustrate the geologic features and groundwater flows that lead to the formation of calcareous seepage fens.

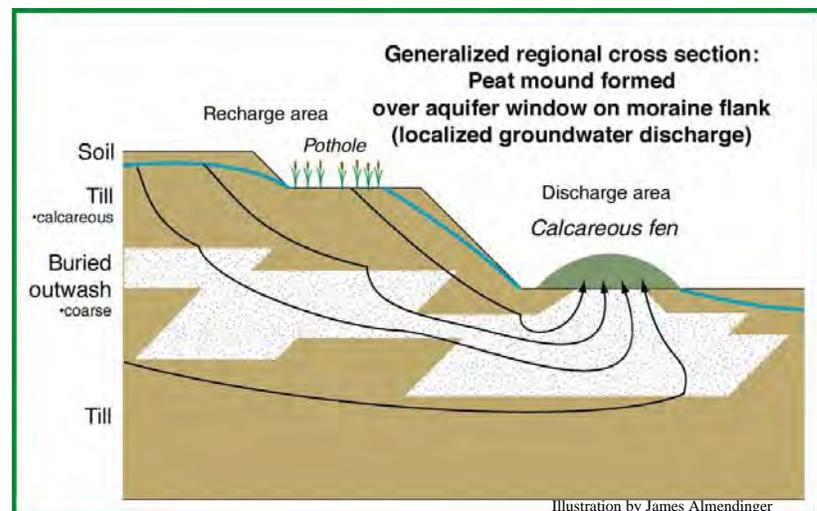


HOW RARE ARE CALCAREOUS SEEPAGE FENS?

Calcareous seepage fens are one of the rarest natural communities in the United States. These fens have been reported from 10 states, mostly in the Midwest.

Approximately 200 are known in Minnesota, most of which are only a few acres in extent. They are concentrated at the bases of terrace escarpments in river valleys in southeastern Minnesota, on the sides of morainal hills and valley

sideslopes in southern and west-central Minnesota, and on the downslope side of beach ridges in the Glacial Lake Agassiz basin in the northwest. There are also a few in northern Minnesota where upwelling groundwater reaches the surface within large, more acidic peatlands.





WHY ARE CALCAREOUS SEEPAGE FENS PROTECTED?

In addition to the rarity of the community itself, calcareous seepage fens support a disproportionately large number of rare plant species in Minnesota, four of which (*) occur almost exclusively in this community. Eight state-listed, rare plant species are known from calcareous seepage fens:

<i>Carex sterilis</i> *	Sterile sedge	State threatened
<i>Cladium mariscoides</i> *	Twig-rush	State special concern
<i>Rhynchospora capillacea</i> *	Fen beak-rush	State threatened
<i>Fimbristylis puberula</i> *	Hairy fimbristylis	State endangered
<i>Scleria verticillata</i>	Nut-rush	State threatened
<i>Eleocharis rostellata</i>	Beaked spike-rush	State threatened
<i>Valeriana edulis</i>	Valerian	State threatened
<i>Cypripedium candidum</i>	Small white lady's slipper	State special concern

Calcareous seepage fens are highly susceptible to disturbance. Reduction in the normal supply of groundwater results in oxidation of the surface peat, releasing nutrients and fostering the growth of shrubs and tall, coarse vegetation that displaces the fen plants. Nitrogen-rich surface water runoff into fens promotes the invasion of aggressive exotic plants, especially reed canary grass, that also outcompete the fen plants. Flooding drowns the fen plants. The soft, saturated character of the peat makes almost any level of activity within them, by humans or domestic livestock, highly disruptive.



Small white lady's slipper

The DNR maintains a list of known calcareous fens, which is available at the DNR's website at:

http://files.dnr.state.mn.us/publications/waters/Calcareous_Fen_List.pdf.

Landowners interested in protecting or managing a calcareous fen should contact the DNR, Ecological Resources Division at 651-259-5125.

Minnesota State Historic Preservation Office



March 18, 2011

Ms. Mary Heidemann
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Boulevard West
Saint Paul, Minnesota 55102-1906

**RE: Phase I Literature Review
Rebuild of Transmission Lines 0844 and 0861 Project - Dakota County, Minnesota
Xcel Energy, Inc. / Northern States Power Company**

Dear Ms. Heidemann;

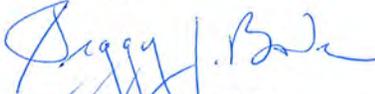
Northern States Power Company, a Minnesota corporation, d/b/a Xcel Energy, Inc. (“Xcel Energy”) proposes to rebuild a portion of its 115 kilovolt (“kV”) transmission system between the Black Dog Substation in Burnsville and the Savage Substation in Savage, Minnesota. The project is referred to as the Rebuild of Transmission Lines 0844 and 0861 Project (“Project”). The Project consists of two parts: 1) installation of approximately 5.1 miles of two new 115 kV transmission lines to interconnect with existing 115 kV transmission lines; and 2) removal of approximately 4.4 miles of two parallel existing 115 kV line transmission lines and structures. The Project is needed to ensure reliable and efficient energy transmission between the two substations and when completed will reduce the overall transmission footprint in the Minnesota River Valley.

On behalf of Xcel Energy, Merjent, Inc. (“Merjent”) conducted a cultural resources Phase Ia literature review (“Report”) for the proposed Project, a copy of which is enclosed for Minnesota State Historic Preservation Office (“SHPO”) review and comment. Although the current proposed route is subject to minor changes, the final route will lie within the Minnesota River Valley bottoms, a location dominated by hydric soils. The Report includes a recommendation that no archaeological or historic resources will be adversely affected by construction or operation of the replacement transmission lines. Merjent and Xcel Energy respectfully request SHPO written agreement with our Report findings. We anticipate that your written comments on the Project will be submitted to us within 30 days. Thank you for your consideration of our request.

The Project may require permitting with the U. S. Army Corps of Engineers in order to comply with Section 404 of the Clean Water Act. Therefore, we conducted the literature review in such a way so that it will comply with Section 106 of the National Historic Preservation Act. The Project also comes under the jurisdiction of local and state authorities, including the Minnesota Public Utilities Commission.

Xcel Energy appreciates your review and concurrence with our assessment of the proposed Project. If you have questions regarding this project or require additional information, please call Jim Fritz, Permitting Analyst with Xcel Energy at (612) 330-6956 (email: james.w.fritz@xcelenergy.com); or me at (612) 746-3663 (email: pboden@merjent.com).

Sincerely,



Peggy J. Boden, PhD
Senior Cultural Resources Specialist

cc: Jim Fritz, Xcel Energy, Inc.

Enclosure: Phase Ia Literature Review for the Xcel Energy Proposed Rebuild of Transmission Lines 0844 and 0861 Project, Dakota County, Minnesota (dated March 18, 2011)



STATE HISTORIC PRESERVATION OFFICE

April 20, 2011

Peggy Boden, Cultural Resource Specialist
Mergent
615 First Avenue NE, Suite 425
Minneapolis, MN 55413

RE: Xcel Energy Transmission Line Rebuild
Burnsville to Savage, Dakota County
SHPO Number: 2011-1689

Dear Peggy:

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

Based on our review of the project information, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36CFR800, Procedures of the Advisory Council on Historic Preservation for the protection of historic properties. If this project is considered for federal assistance, or requires a federal permit or license, it should be submitted to our office with reference to the assisting federal agency.

Please contact me at (651) 259-3456 if you have any questions regarding our review of this project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mary Ann Heidemann', written over a horizontal line.

Mary Ann Heidemann, Manager
Government Programs and Compliance

cc: Jim Fritz, Xcel Energy

City of Burnsville, Minnesota



August 30, 2011

Mr. Terry Schultz
City of Burnsville
13713 Frontier Court
Burnsville, MN 55337

**Re: City of Burnsville Questions Regarding Xcel Energy's Rebuild of
Transmission Lines 0844 and 0861 Project**

Dear Mr. Schultz:

The City of Burnsville ("City") requested additional information regarding Northern States Power Company, a Minnesota corporation's ("Xcel Energy" or "the Company"), proposed Rebuild of Transmission Lines 0844 and 0861 Project ("Project") located within the municipal city boundaries. Specifically, the City requested information regarding 1) the potential to relocate the 115 kV transmission lines to the south of Black Dog Lake between Interstate 35 ("I-35W") and Black Dog Substation where existing transmission lines are currently located and 2) power flow analyses. Information on these two topics is provided below.

Proposed Route

Xcel Energy is preparing an application for a Route Permit to the Minnesota Public Utilities Commission that will include an end-to-end proposed route for the Project ("Proposed Route") (see **Figure 1**). The west end of the Proposed Route, from Structure 31A by the Savage Substation to I-35W, generally follows the edges of the existing limestone quarry. The two lines are proposed to be co-located and moved to the western and northern edge of the quarry to facilitate the quarry's 1994 planned unit development.

On the east end between I-35W and the Black Dog Substation, Xcel Energy proposes to consolidate Transmission Line 0844 and Transmission Line 0861 on an alignment more closely paralleling Black Dog Road.

Alternative Route Segment 2

Evaluation of a south side alignment on the east end of the Project was recommended by Dakota County and the City of Burnsville based on concerns regarding proximity of a contemplated bike path along Black Dog Road and a portion of the proposed east end of the Proposed Route. A southern alignment, identified as Alternative Route Segment 2, follows the existing corridor for Xcel Energy's Transmission Lines 0832 and 5539 across Black Dog Lake and then turns to the southwest following existing Transmission Lines 0976, 0989, and 5539 (see **Figures 1 - 3**). The

segment then deviates to the west as a greenfield route until realigning with the Proposed Route at the I-35W. The alternative route segment is approximately 2.2 miles long.

Analysis of Alternative Route Segment 2

Alternative Route Segment 2 has sensitive environmental resources that are not present on the comparable segment of Xcel Energy's Proposed Route along Black Dog Road. The south side of Black Dog Lake is comprised of a large wetland complex, which includes several native plant communities identified by the Minnesota County Biological Survey ("MCBS"). The United States Army Corps of Engineers and the Minnesota Department of Natural Resources ("MnDNR") have expressed concern regarding impacts on these native plant communities, particularly the calcareous fens in the area. Calcareous fens are designated as "outstanding resource value waters" in water quality regulations administered by the Minnesota Pollution Control Agency ("MPCA") (Minnesota Rule 7050.0180) and they are given special protection through Minnesota Rules 8420.1010 to 8240.1060.

Xcel Energy undertook a preliminary evaluation of the Alternative Route Segment 2 to assess impacts on sensitive native plant communities, constructability, and cost implications. The Company concluded that this alternative is not a reasonable and feasible alternative for the following reasons:

- **SNA Crossing**: The route would cross a high-value designated Minnesota Scientific and Natural Area ("SNA"). The routing rules prohibit crossing an SNA "unless the transmission line would not materially damage or impair the purpose for which the area was designated and no feasible and prudent alternative exists." Minn. R. 7850.4300. Here, the Proposed Route is a feasible alternative and, therefore, Alternative Segment 2 appears not to be permissible.
- **Calcareous Fens**: The route would cross wetland complexes that contain five state-listed calcareous fens. Any activity that has the potential to affect the current, cross-section, or character of calcareous fens is a regulated activity in Minnesota under Minnesota Statutes Section 103G.223 (Calcareous Fens) and Minnesota Rule 8420.0935 (Standards and Criteria for Identification, Protection, and Management of Calcareous Fens). Such activity can only be authorized by the Commissioner of the MnDNR after the preparation and approval of a Calcareous Fen Management Plan (Minn. Stat. § 103G.223). MnDNR has advised that authorization to disturb a calcareous fen has only been granted once or twice in the state. If the crossing were authorized, creating and implementing a Fen Management Plan would take extensive research, coordination with state and federal agencies, time, and additional cost.
- **Reliability**: The Alternative Segment 2 would locate an additional double circuit 115 kV/115 kV transmission line in the same corridor as an existing double circuit 345 kV/345 kV line and a single circuit 115 kV line. Designing lines to exit south

of the Black Dog Substation would be more difficult and would require an extended outage of Transmission Line 0832. In addition, when high voltage transmission lines are concentrated in an area, they are at greater risk of a common outage due to a catastrophic event such as a tornado or other storm. In contrast, the transmission lines are more geographically distant with the Proposed Route on the east segment.

- Construction Challenges: Construction challenges would be greater than along the Proposed Route due to the presence of high water and soils with poor bearing strength underlain by coarse textured sediments (sands and gravels) with high positive hydraulic gradients. If necessary, dewatering during construction would likely cause adverse impacts on calcareous fens, sensitive soils, and plant communities. Extensive use of timber mats and specialized low-ground weight equipment would be required at a minimum, to stabilize heavy construction equipment during construction. These environmental conditions would also require substantial matting and environmental mitigation whenever the line needs to be accessed for maintenance or repair, increasing costs and potentially extending the duration of an outage event. In contrast, the east segment of the Proposed Route has ready accessibility via Black Dog Road and contains far more stable, less-saturated soils.

Power Flow

The City requested power flow information in connection with “congestion relief” at the Wilson Substation. The phrase “congestion relief” is not one typically associated with substation operation.

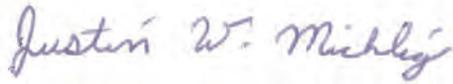
The need for the Project is due to line overloading under a specific contingency condition. Using PSS/E software to evaluate system performance under various contingencies, Xcel Energy evaluates the Metro area transmission system on an annual basis. During an annual review, engineers determined that a segment of Transmission Line 0844 between Black Dog Substation and Savage Substation overloads if the circuit breaker at the Wilson Substation has an internal fault (North American Electric Reliability Corporation, Category C2). The PSS/E slider file showing the overload is enclosed as **Figure 4**.

If you have any further questions regarding the Project, please contact us via phone (Tim: 612.330.1955; Justin: 612.330.5893) or via email (Tim: Timothy.G.Rogers@xcelenergy.com; Justin: Justin.W.Michlig@xcelenergy.com).

Sincerely,

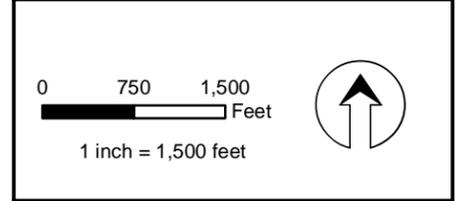
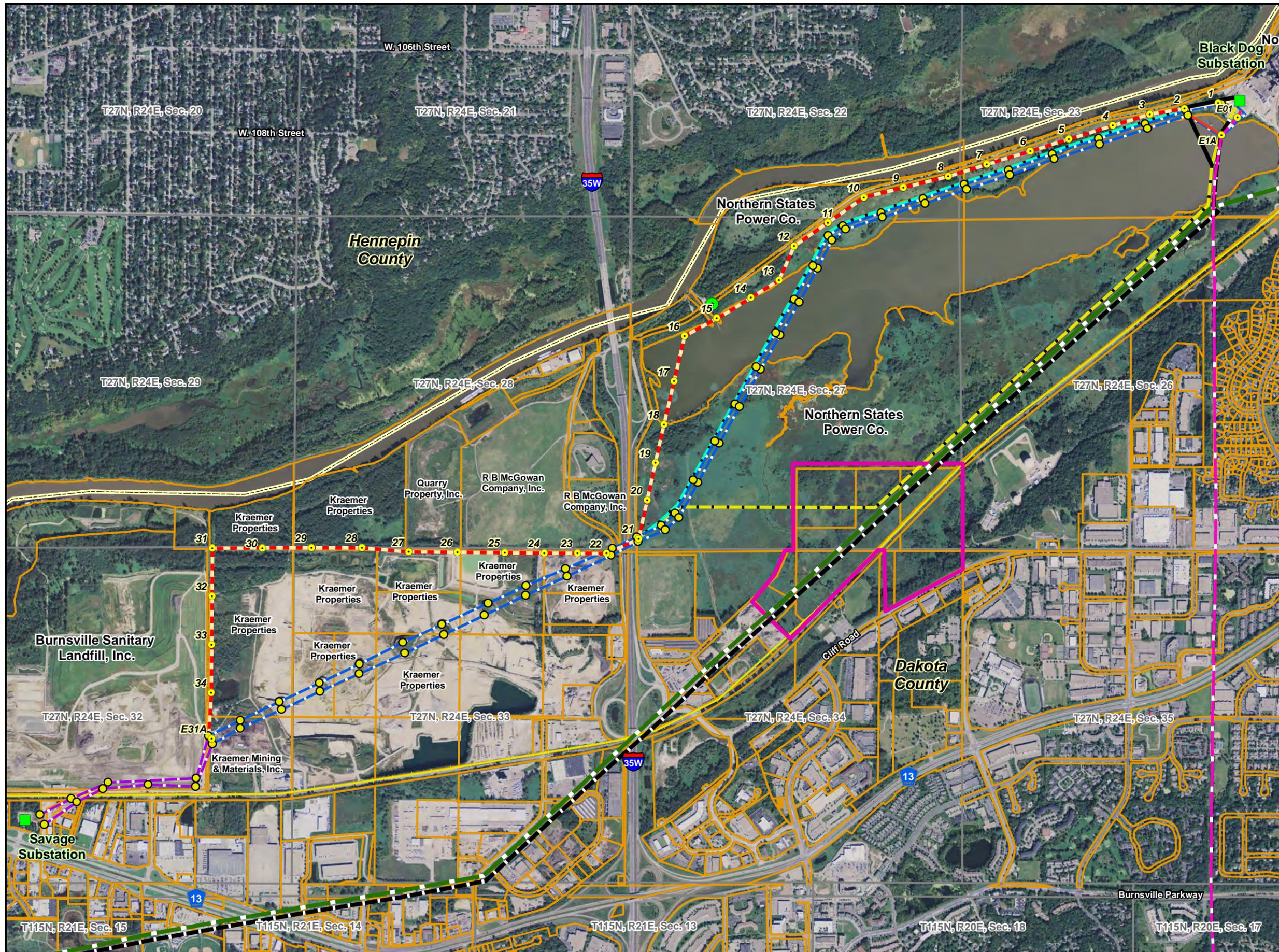
Handwritten signature of Timothy D. Rogers in blue ink.

Tim Rogers
Supervisor, Siting and Permitting
Xcel Energy

Handwritten signature of Justin W. Michlig in blue ink.

Justin Michlig
Transmission Planning Engineer
Xcel Energy

Enclosures



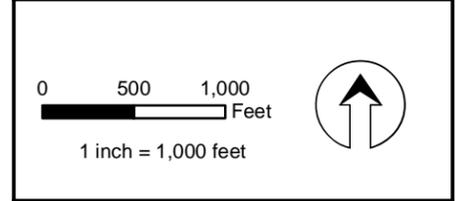
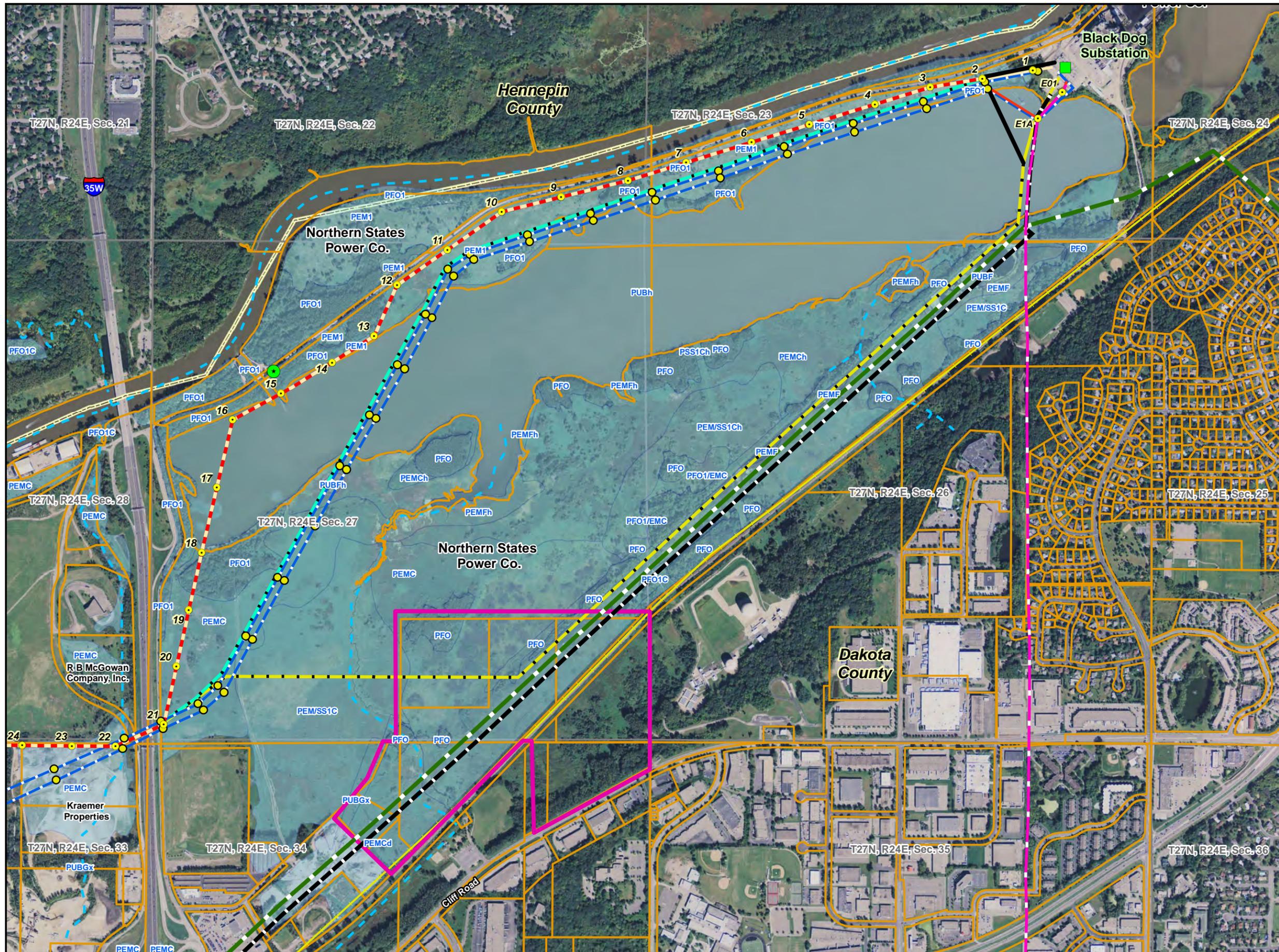
- Proposed Structure
- Existing Structures
- Xcel Owned Substation
- Existing Line 0832 Single Circuit (115kV)
- Existing Line 5539 Single Circuit (115kV)
- Existing Lines 0976 and 0989 Double Circuit (345kV)
- Alternative Segment 2 - Line 0844 Single Circuit (115kV)
- Proposed Line 0861 Single Circuit (115kV)
- Proposed Line 0844 Single Circuit (115kV)
- Proposed Line 0844 and 0861 Double Circuit (115kV)
- Existing Line Removal (0844 and 0861)
- Existing Lines (0844 and 0861)
- Alternative Segment 1 - Line 0844 Single Circuit (115kV)
- Alternative Segment 2 - Lines 0844 and 0861 Double Circuit (115kV)
- Alternative Segment 2 - Line 0861 Single Circuit (115kV)
- Verified Eagle Nest
- Union-Pacific Railroad
- Black Dog Nature Preserve SNA - DNR
- Dakota County Parcel
- Section Boundary
- County Boundary



FIGURE 1
GENERAL MAP

Rebuild of Transmission Lines 0844 and 0861 Project
Xcel Energy
Burnsville, Minnesota

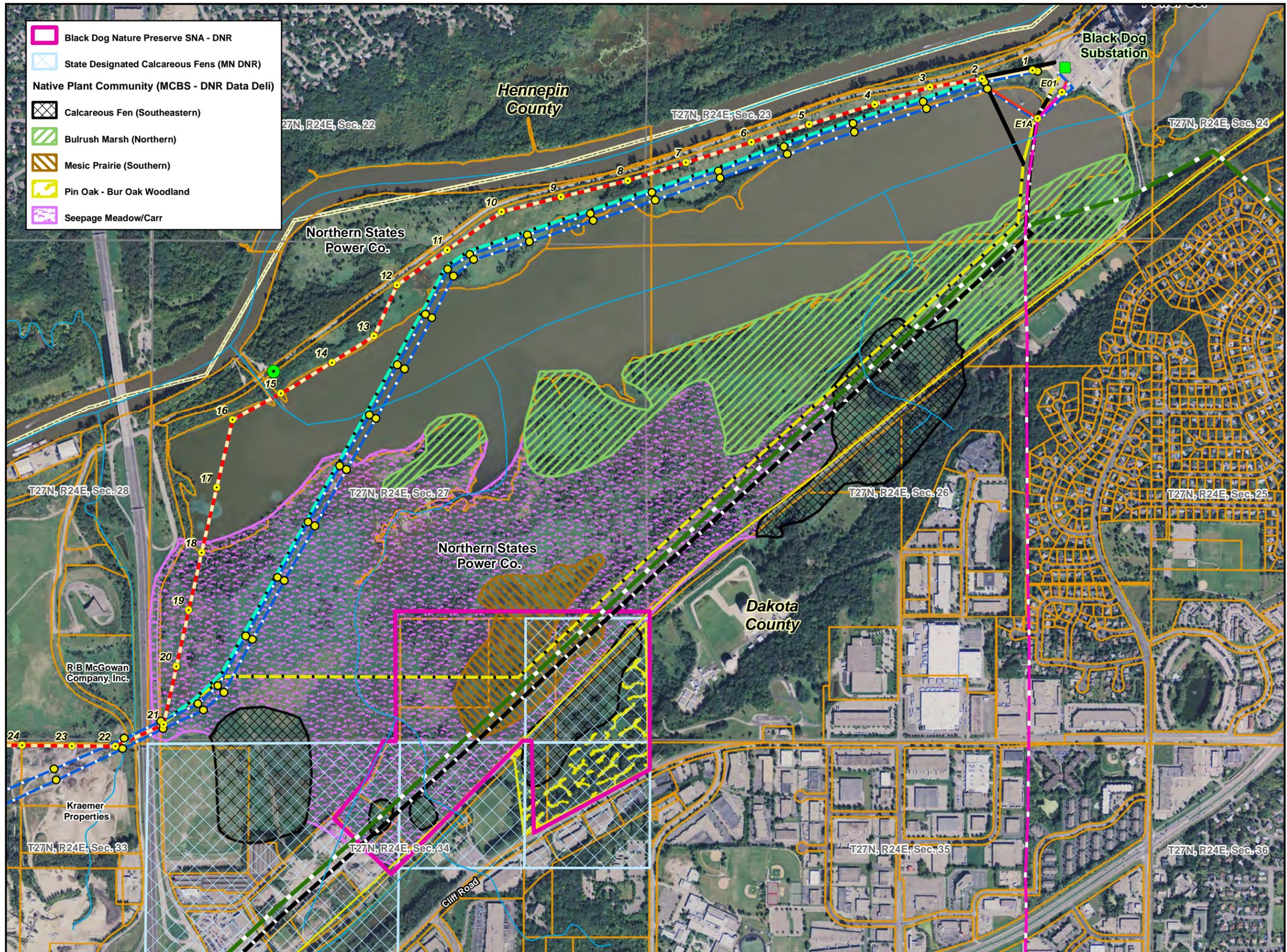
Source: Aerial Photography: NAIP 2010
All Other Data Provided by Xcel Energy, Merjent, ESRI, MNDOT and the MN DNR
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Revision Date: 08/24/2011



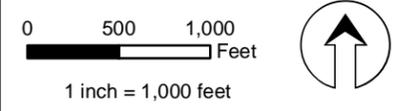
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- Proposed Line 0844 and 0861 Double Circuit (115kV)
- Existing Line Removal (0844 and 0861)
- Existing Lines (0844 and 0861)
- Alternative Segment 1 - Line 0844 Single Circuit (115kV)
- Alternative Segment 2 - Lines 0844 and 0861 Double Circuit (115kV)
- Alternative Segment 2 - Line 0861 Single Circuit (115kV)
- Verified Eagle Nest
- Union-Pacific Railroad
- Waterbody
- Field Delineated and Observed Wetlands
- Black Dog Nature Preserve SNA - DNR
- Dakota County Parcel
- Section Boundary
- County Boundary


FIGURE 2
WETLAND MAP
Rebuild of Transmission Lines 0844 and 0861 Project
Xcel Energy
Burnsville, Minnesota

Source: Aerial Photography: NAIP 2010
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 Revision Date: 08/29/2011



- Black Dog Nature Preserve SNA - DNR**
- State Designated Calcareous Fens (MN DNR)**
- Native Plant Community (MCBS - DNR Data Deli)**
- Calcareous Fen (Southeastern)
 - Bulrush Marsh (Northern)
 - Mesic Prairie (Southern)
 - Pin Oak - Bur Oak Woodland
 - Seepage Meadow/Carr



- Proposed Structure
- Existing Structures
- Xcel Owned Substation
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- Alternative Segment 2 - Line 0861 Single Circuit (115kV)
- Verified Eagle Nest
- Union-Pacific Railroad
- Waterbody
- Dakota County Parcel
- Section Boundary
- County Boundary

Xcel Energy
FIGURE 3
NATIVE PLANT COMMUNITY MAP
 Rebuild of Transmission Lines 0844 and 0861 Project
 Xcel Energy
 Burnsville, Minnesota

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