Dear Landowner,

Xcel Energy is proposing to add the 'second circuit' to portions of the existing CapX2020 project between Brookings, SD, and Lyon County substation near Marshall, Minn., in western Minnesota, and between the Helena substation in Scot County, Minn., and the Hampton substation in Dakota County.

As a landowner near the CapX2020 project, we'd like to invite you to an open house to learn more about the project, including project schedule, construction activities, and other issues. Project representatives will be there to answer questions and provide information.

A "second circuit" means the installation of an additional transmission circuit (three lines) on existing transmission towers that were designed to accommodate the additional infrastructure. The majority of the Project will not require changing the route of the existing transmission line or new infrastructure.

The Brookings County – Lyons County portion of the Project is approximately 60 miles, however, will require reconfiguring an existing line at the Steep Bank Lake Substation near Hendricks, Minnesota, to avoid the second circuit crossing the existing transmission line. The Helena – Hampton portion of the Project is approximately 39 miles and will also require routing the new circuit around the Chub Lake Substation, northeast of Elko New Market. The portion of the project that was originally built with both circuits installed will not be affected.

Please join us at an upcoming open house to learn more about the project and how it may affect your property.

If you have questions about the project, please visit www.Brookings2ndcircuit.com, email the project team at Brookings2ndcircuit@xcelenergy.com, or call the project information line toll-free at 1-800-367-7414

- **July 18, 2023 in Marshall, Minnesota**
  4:00PM to 7:00PM
  EverSpring Inn & Suites
  1500 E College Drive
  Marshall, MN 56258

- **July 19, 2023 held virtually**
  1:00 pm CDT
  Link will be posted at www.Brookings2ndCircuit.com

- **July 20, 2023 in Lakeville, MN**
  4:00PM to 7:00PM
  Lakeville Holiday Inn
  20800 Kenrick Ave
  Lakeville MN 55044

PUBLIC NOTICE

This notice is intended to notify you of a proposed transmission line project and to provide the following information:

1. Project location and a description of the need for the Project;
2. Describe how to participate in the regulatory process; and
3. Provide contact information to get additional information and to sign up for email and mailing lists.

Northern States Power Company, doing business as Xcel Energy (Applicant), proposes to add a second circuit to the portion of an existing 345 kiloVolt (kv) transmission line between Brookings County, South Dakota and Lyon County, Minnesota, and between the Helena Substation, west of New Prague, Minnesota, and the Hampton Substation, north of Hampton, Minnesota (Project). When originally built, the project was referred to as the "CapX2020 Brookings County-Hampton project."

A "second circuit" means the installation of an additional transmission circuit (three lines) on existing transmission towers that were designed to accommodate an additional circuit. The majority of the Project will not require changing the route of the existing transmission line or new infrastructure. The Brookings County – Lyon County portion of the Project, however, will require reconfiguring an existing line at the Steep Bank Lake Substation near Hendricks, Minnesota, to avoid the second circuit crossing the existing transmission line. The Helena – Hampton portion of the Project will also require routing the new circuit around the Chub Lake Substation, northeast of Elko New Market, which requires the construction of two new towers.

We are publishing this notice to inform those in the Notice Area, including:

- Landowners with property within the Notice Area,
- Residents living within the Notice Area,
- Local units of government in and around the Notice Area,
- State elected officials in and around the Notice Area; and/or,
- Government agencies and offices.

Why is the Project needed?
The Project is needed to reduce energy costs by addressing one of the most electrically congested areas in Minnesota. Currently, low-cost energy (primarily generated by wind) generated in South Dakota and southern Minnesota faces congestion when flowing to customers in eastern Minnesota, including the Twin Cities. This congestion increases the cost of electricity either due to additional charges imposed on transmitting electricity during times of high congestion or because electricity must come from higher-cost generators in areas without transmission constraints. These higher costs create inefficiencies in the wholesale energy market and increase costs for consumers. The Project is needed to relieve the current transmission congestion in this area and allow access to lower-cost generation, provide economic benefits, strengthen the regional grid, and support future wind generation facilities in Minnesota and South Dakota. The Applicant estimates the Project would provide $323 million in production-cost benefits on a present value basis over 20 years, as well as significant progress toward carbon-emission reduction policy objectives.

What is the regulatory process for the Project?
Before construction can begin on the Project, the Minnesota Public Utilities Commission (the Commission) must determine whether the Project is needed in a Certificate of Need proceeding.

The Certificate of Need process includes opportunities for public involvement and analyzes the benefits and impacts the Project may have, including costs, electric needs, issues the Project will solve, and potential impacts on the environment and general area where the Project is located.

The Certificate of Need process is governed by Minnesota law, including Minnesota Statutes Section 216B.243, and Minnesota Rules Chapters 4410, 7829, and 7849.

What will the Certificate of Need proceedings address?
The Certificate of Need proceedings will address whether the Project is necessary to provide adequate, reliable, and efficient electric service to the Applicant's customers, and residents of Minnesota and neighboring states. The proceedings will also address whether any alternatives to the Project could meet these energy needs. Finally, the proceedings will assess the human and environmental impacts of the Project and how any negative impacts can be mitigated.

How will the human and environmental impacts of the Project be evaluated?
As part of the Certificate of Need process, Minnesota Department of Commerce, Energy Environmental Review and Analysis (EERA) will prepare an environmental report as required by Minnesota Rule 7849.1200 (Environmental Report). The Environmental Report will describe the human and environmental impacts of the Project and methods to mitigate any anticipated adverse impacts.

What is the process for determining the scope of the Environmental Report?
EERA will hold a public meeting on the scope of the Environmental Report. Before the meeting, EERA will give interested persons notice of the meeting. At the meeting, EERA will explain the process for preparing the Environmental Report. The meeting will also give the public the opportunity to ask questions, present comments, and suggest alternatives and possible impacts of the Project to be evaluated in the Environmental Report. EERA will accept written comments after the public meeting. After the close of the public comment period, EERA will issue a decision determining the alternatives and potential impacts to be addressed in the Environmental Report, the schedule for completion, and other matters to be included in the Environmental Report.

What additional opportunities are there for public participation?
The Commission is still developing the process for soliciting public input. Nevertheless, the Applicant anticipates that, after EERA issues the Environmental Report, the Commission will invite written public comments on the Certificate of Need and Environmental Report. The Applicant also expects that the Commission will hold a public hearing to receive oral comments and give the public an opportunity to ask questions regarding the Environmental Report and Certificate of Need application. The Commission will then decide whether the Environmental Report is adequate and whether to grant a Certificate of Need.

There may be other opportunities to participate in the proceedings. Members of the public wishing to be informed of opportunities to provide input should subscribe to the Certificate of Need docket, as described below.

How will the Project's route be selected?
The Project involves installing a second circuit on existing transmission towers. Consequently, the route will largely follow the existing Brookings Line. The Applicant anticipates obtaining route approval through a minor alteration to the existing route permit for the Brookings Line. The minor-alteration process will overlap with the Certificate of Need process.

What is the anticipated schedule for the Certificate of Need process?
The table below provides a high level summary of the major steps in the Certificate of Need process and estimated timing.

Step	Approximate Date
Pre-Application stakeholder outreach	Late Second Quarter 2023/ Early Third Quarter 2023
Certificate of Need Application submitted to Commission	Late Second Quarter 2023/ Early Third Quarter 2023
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Environmental Report Issued	Fourth Quarter 2023
Public Hearings (public meeting and comment period)	First Quarter 2024
Commission Meeting (to determine the adequacy of the Environmental Report and whether to issue a Certificate of Need)	First Quarter 2024
Written Commission Decision	Second Quarter 2024

Will the Applicant need to acquire new land rights for the Project?
Because the Project primarily involves installing a second circuit on existing transmission towers, the Applicant does not anticipate requiring significant new land rights for the Project. Before beginning construction, the Applicant will attempt to acquire any new land rights through negotiations with the landowner for each parcel.

How can I obtain additional information about the Project?
You may subscribe to the Project's Certificate of Need docket to receive email notifications when information is filed in that docket, please visit www.edockets.state.mn.us, click on the "Subscribe to a Docket" button, enter your email address and select "Docket Number" from the Type of Subscriptions dropdown box, then select "23" from the first Docket number drop down box and enter "200" in the second box before clicking on the "Add to List" button. You must then click the "Save" button at the bottom of the page to confirm your subscription to the Project's Certificate of Need docket.

To be placed on the Project Certificate of Need mailing list (MPUC Docket No. E002/CN-23-200), mail, fax, or email Robin Benson at Minnesota Public Utilities Commission, 121 7th Place E., Suite 350, St. Paul, MN 55101-2147, Fax: 651-297-7073 or robin.benson@state.mn.us.

If you have questions about the state regulatory process, you may contact the Minnesota state regulatory staff listed below:

Minnesota Public Utilities Commission
Michael Kaluzniak
121 7th Place East, Suite 350
St. Paul, Minnesota 55101

651-201-2257

800-657-3782

Email:
mike.kaluzniak@state.mn.us

Website: www.mn.gov/puc/

Minnesota Department of Commerce EERA
Suzanne Steinhauer
85 7th Place East, Suite 280
St. Paul, Minnesota 55101

651-539-1843

800-657-3602

Email:
suzanne.steinhauer@state.mn.us

Website: https://apps.commerce.state.mn.us/eera/web/page/home

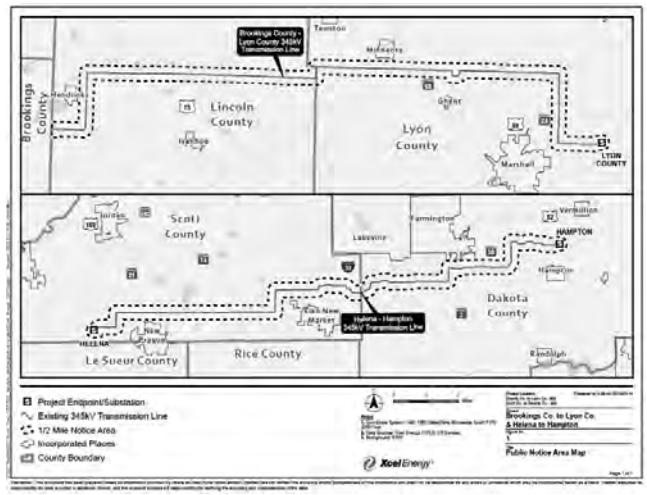
Please visit the Project websites at:
www.Brooking2ndCircuit.com for more information.

Project phone numbers and e-mail addresses are:

Project Phone Numbers: 800-367-7414

Project e-mail addresses: Brookings2ndcircuit@xcelenergy.com

How do I learn more about other transmission projects and the transmission planning process in Minnesota?
You may access reports that provide information about the transmission planning process used by utilities in the state of Minnesota and information about other transmission line projects at www.minnelectrans.com. These reports are prepared pursuant to Minnesota Statutes Section 216B.2425, which requires each electric transmission owning utility in the state to file a biennial transmission planning report with the Commission in the fall of odd-numbered years.



August 4, 2023

RE: Notice of Certificate of Need Application for the Proposed 345 kV Brookings County – Lyon County and Helena – Hampton Transmission Project

MPUC Docket No. E002 /CN-23-200

This letter is intended to notify you of a proposed transmission line project and to provide the following information:

1. Project location and a description of the need for the Project;

2. Describe how you can participate in the regulatory process; and

3. Provide contact information to get additional information and to sign up for email and mailing lists.

Northern States Power Company, doing business as Xcel Energy (Applicant), proposes to add a second circuit to the portion of an existing 345 kiloVolt (kV) transmission line between Brookings County, South Dakota, and Lyon County, Minnesota, and between the Helena Substation, west of New Prague, Minnesota, and the Hampton Substation, north of Hampton, Minnesota (Project). When originally built, the project was referred to as the "CapX2020 Brookings County-Hampton project."

A "second circuit" means the installation of an additional transmission circuit (three lines) on existing transmission towers that were designed to accommodate an additional circuit. The majority of the Project will not require changing the route of the existing transmission line or new infrastructure. The Brookings County – Lyon County portion of the Project, however, will require reconfiguring an existing line at the Steep Bank Lake Substation near Hendricks, Minnesota, to avoid the second circuit crossing the existing transmission line. The Helena – Hampton portion of the Project will also require routing the new circuit around the Chub Lake Substation, northeast of Elko New Market, which requires the construction of two new towers.

This notice is being provided to you as a tribal government in the region.

Why is the Project needed?

The Project is needed to reduce energy costs by addressing one of the most electrically congested areas in Minnesota. Currently, low-cost energy (primarily generated by wind) generated in South Dakota and southern Minnesota faces congestion when flowing to

customers in eastern Minnesota, including the Twin Cities. This congestion increases the cost of electricity either due to additional charges imposed on transmitting electricity during times of high congestion or because electricity must come from higher-cost generators in areas without transmission constraints. These higher costs create inefficiencies in the wholesale energy market and increase costs for consumers. The Project is needed to relieve the current transmission congestion in this area and allow access to lower-cost generation, provide economic benefits, strengthen the regional grid, and support future wind generation facilities in Minnesota and South Dakota. The Applicant estimates the Project would provide $323 million in production-cost benefits on a present-value basis over 20 years, as well as significant progress toward carbon-emission reduction policy objectives.

What is the regulatory process for the Project?

Before construction can begin on the Project, the Minnesota Public Utilities Commission (the Commission) must determine whether the Project is needed in a Certificate of Need proceeding.

The Certificate of Need process includes opportunities for tribal involvement and analyzes the benefits and impacts the Project may have, including costs, electric needs, issues the Project will solve, and potential impacts on the environment and general area where the Project is located.

The Certificate of Need process is governed by Minnesota law, including Minnesota Statutes Section 216B.243, and Minnesota Rules Chapters 4410, 7829, and 7849. A copy of the Certificate of Need application can be obtained by visiting the Commission's website at www.mn.gov/puc/ in Docket No. E002/CN-23-200.

What will the Certificate of Need proceedings address? The Certificate of Need proceedings will address whether the Project is necessary to provide adequate, reliable, and efficient electric service to the Applicant's customers, and residents of Minnesota and neighboring states. The proceedings will also address whether any alternatives to the Project could meet these energy needs. Finally, the proceedings will assess the human and environmental impacts of the Project and how any negative impacts can be mitigated.

How will the human and environmental impacts of the Project be evaluated?

As part of the Certificate of Need process, Minnesota Department of Commerce, Energy Environmental Review and Analysis (EERA) will prepare an environmental report as required by Minnesota Rule 7849.1200 (Environmental Report). The

Environmental Report will describe the human and environmental impacts of the Project and methods to mitigate any anticipated adverse impacts.

What is the process for determining the scope of the Environmental Report?

EERA will hold a meeting on the scope of the Environmental Report. Before the meeting, EERA will give interested persons notice of the meeting. At the meeting, EERA will explain the process for preparing the Environmental Report. The meeting will also give interested parties the opportunity to ask questions, present comments, and suggest alternatives and possible impacts of the Project to be evaluated in the Environmental Report. EERA will accept written comments after the meeting. After the close of the comment period, EERA will issue a decision determining the alternatives and potential impacts to be addressed in the Environmental Report, the schedule for completion, and other matters to be included in the Environmental Report.

What additional opportunities are there for tribal participation?

The Commission is still developing the process for soliciting input. Nevertheless, the Applicant anticipates that, after EERA issues the Environmental Report, the Commission will invite written comments on the Certificate of Need and Environmental Report. The Applicant also expects that the Commission will hold a hearing to receive oral comments and give interested parties an opportunity to ask questions regarding the Environmental Report and Certificate of Need application. The Commission will then decide whether the Environmental Report is adequate and whether to grant a Certificate of Need.

There may be other opportunities to participate in the proceedings. Tribes wishing to be informed of opportunities to provide input should subscribe to the Certificate of Need docket, as described below.

How will the Project's route be selected?

The Project involves installing a second circuit on existing transmission towers. Consequently, the route will largely follow the existing Brookings Line. The Applicant anticipates obtaining route approval through a minor alteration to the existing route permit for the Brookings Line (Docket 08-1474). The minor-alteration process will overlap with the Certificate of Need process.

What is the anticipated schedule for the Certificate of Need process?

The table below provides a high-level summary of the major steps in the Certificate of Need process and estimated timing.

Major Certificate of Need Process Steps and Summary Schedule

Step	Approximate Date
Pre-Application stakeholder outreach	Late Second Quarter 2023/ Early Third Quarter 2023
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Environmental Report Issued	Fourth Quarter 2023
Hearings and Comment Period	First Quarter 2024
Commission Meeting (to determine the adequacy of the Environmental Report and whether to issue a Certificate of Need)	First Quarter 2024
Written Commission Decision	Second Quarter 2024

How can tribes obtain additional information about the Project?

Tribes may subscribe to the Project's Certificate of Need docket to receive email notifications when information is filed in that docket, please visit www.edockets.state.mn.us, click on the "Subscribe to a Docket" button, enter the appropriate email address and select "Docket Number" from the Type of Subscriptions dropdown box, then select "23" from the first Docket number drop down box and enter "200" in the second box before clicking on the "Add to List" button. You must then click the "Save" button at the bottom of the page to confirm your subscription to the Project's Certificate of Need docket.

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If you have questions about the state regulatory process, you may contact the Minnesota state regulatory staff listed below:

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121 7th Place East, Suite 350
St. Paul, Minnesota 55101
651.201.2257
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Website: www.mn.gov/puc/

Minnesota Department of Commerce EERA
Suzanne Steinhauer
85 7th Place East, Suite 280
St. Paul, Minnesota 55101
651.539.1843
800.657.3602
Email: suzanne.steinhauer@state.mn.us
Website: https://apps.commerce.state. mn.us/eera/web/page/home

Please visit the Project website at: www.Brookings2ndCircuit.com for more information. Project phone numbers and e-mail addresses are:

Project Phone Numbers: 800.367.7414

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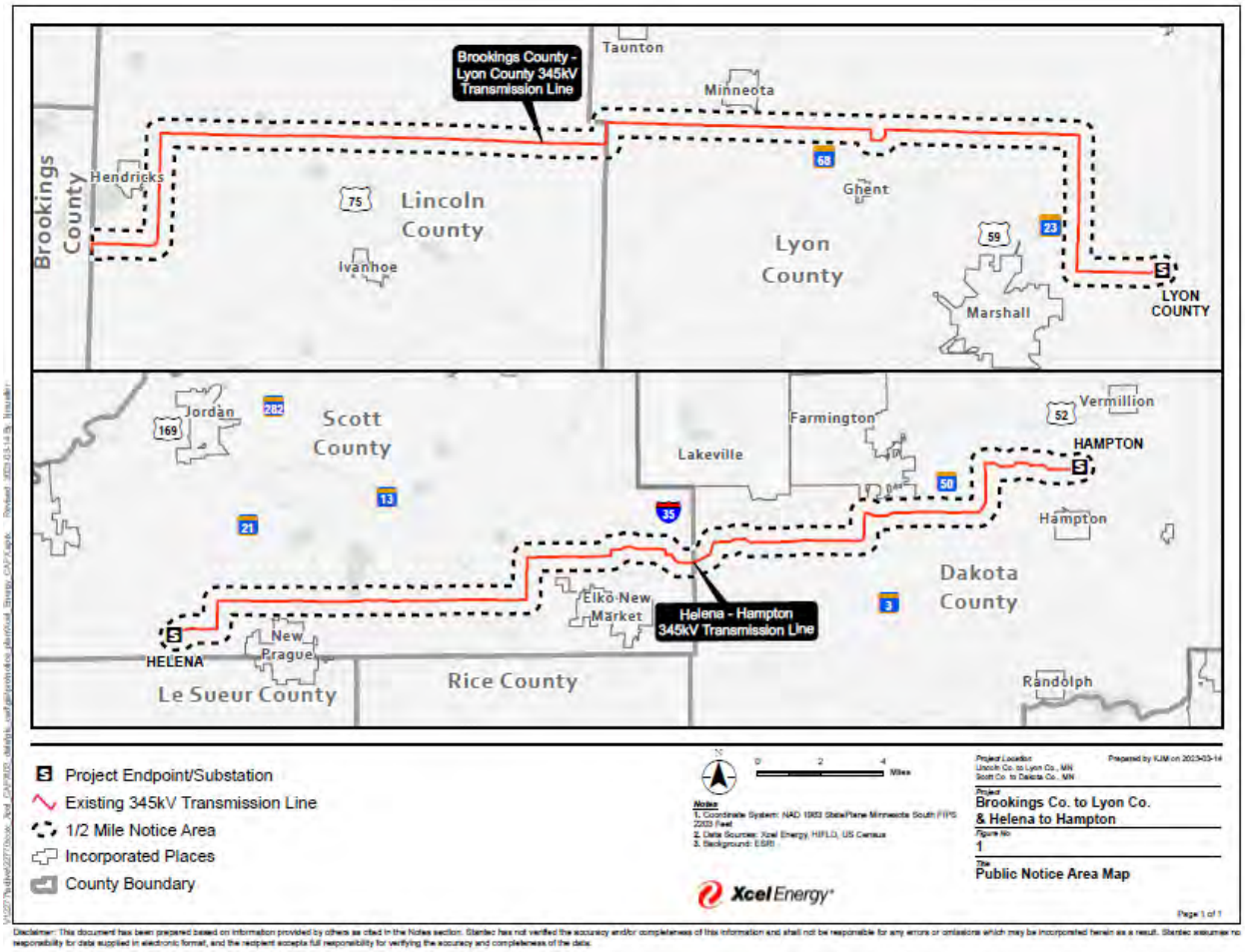
How do tribes learn more about other transmission projects and the transmission planning process in Minnesota?

Tribes may access reports that provide information about the transmission planning process used by utilities in the state of Minnesota and information about other transmission line projects at www.minnelectrans.com. These reports are prepared pursuant to Minnesota Statutes Section 216B.2425, which requires each electric transmission owning utility in the state to file a biennial transmission planning report with the Commission in the fall of odd-numbered years.

Figure 1


Brookings County - Lyon County 345kV Transmission Line
Taunton
Minneota
Brookings County
Hendricks
Lincoln County
Ivanhoe
Ghent
Lyon County
Marshall
LYON COUNTY
Jordan
Scott County
Lakeville
Farmington
Vermillion
HAMPTON
Hampton
Dakota County
Elko New Market
Helena - Hampton 345kV Transmission Line
HELENA
New Prague
Le Sueur County
Rice County
Randolph
Project Endpoint/Substation
Existing 345kV Transmission Line
1/2 Mile Notice Area
Incorporated Places
County Boundary
Xcel Energy
Brookings Co. to Lyon Co. & Helena to Hampton
Public Notice Area Map

August 4, 2023

RE: Notice of Certificate of Need Application for the Proposed 345 kV Brookings County – Lyon County and Helena – Hampton Transmission Project

MPUC Docket No. E002 /CN-23-200

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1. Project location and a description of the need for the Project;

2. Describe how you can participate in the regulatory process; and

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A "second circuit" means the installation of an additional transmission circuit (three lines) on existing transmission towers that were designed to accommodate an additional circuit. The majority of the Project will not require changing the route of the existing transmission line or new infrastructure. The Brookings County – Lyon County portion of the Project, however, will require reconfiguring an existing line at the Steep Bank Lake Substation near Hendricks, Minnesota, to avoid the second circuit crossing the existing transmission line. The Helena – Hampton portion of the Project will also require routing the new circuit around the Chub Lake Substation, northeast of Elko New Market, which requires the construction of two new towers.

This notice is being provided to you because you fall into one of the categories listed below as they relate to the area shown in the attached "Notice Area" map:

- Landowners with property within the Notice Area,

- Residents living within the Notice Area,

- Local units of government in and around the Notice Area,
- State elected officials in and around the Notice Area, and/or
- Government agencies and offices.

Why is the Project needed?

The Project is needed to reduce energy costs by addressing one of the most electrically congested areas in Minnesota. Currently, low-cost energy (primarily generated by wind) generated in South Dakota and southern Minnesota faces congestion when flowing to customers in eastern Minnesota, including the Twin Cities. This congestion increases the cost of electricity either due to additional charges imposed on transmitting electricity during times of high congestion or because electricity must come from higher-cost generators in areas without transmission constraints. These higher costs create inefficiencies in the wholesale energy market and increase costs for consumers. The Project is needed to relieve the current transmission congestion in this area and allow access to lower-cost generation, provide economic benefits, strengthen the regional grid, and support future wind generation facilities in Minnesota and South Dakota. The Applicant estimates the Project would provide $323 million in production-cost benefits on a present value basis over 20 years, as well as significant progress toward carbon-emission reduction policy objectives.

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Written Commission Decision	Second Quarter 2024

Will the Applicant need to acquire new land rights for the Project?

Because the Project primarily involves installing a second circuit on existing transmission towers, the Applicant does not anticipate requiring significant new land rights for the Project. Before beginning construction, the Applicant will attempt to acquire any new land rights through negotiations with the landowner for each parcel.

How can I obtain additional information about the Project?

You may subscribe to the Project's Certificate of Need docket to receive email notifications when information is filed in that docket, please visit www.edockets.state.mn.us, click on the "Subscribe to a Docket" button, enter your email address and select "Docket Number" from the Type of Subscriptions dropdown box, then select "23" from the first Docket number drop down box and enter "200" in the second box before clicking on the "Add to List" button. You must then click the "Save" button at the bottom of the page to confirm your subscription to the Project's Certificate of Need docket.

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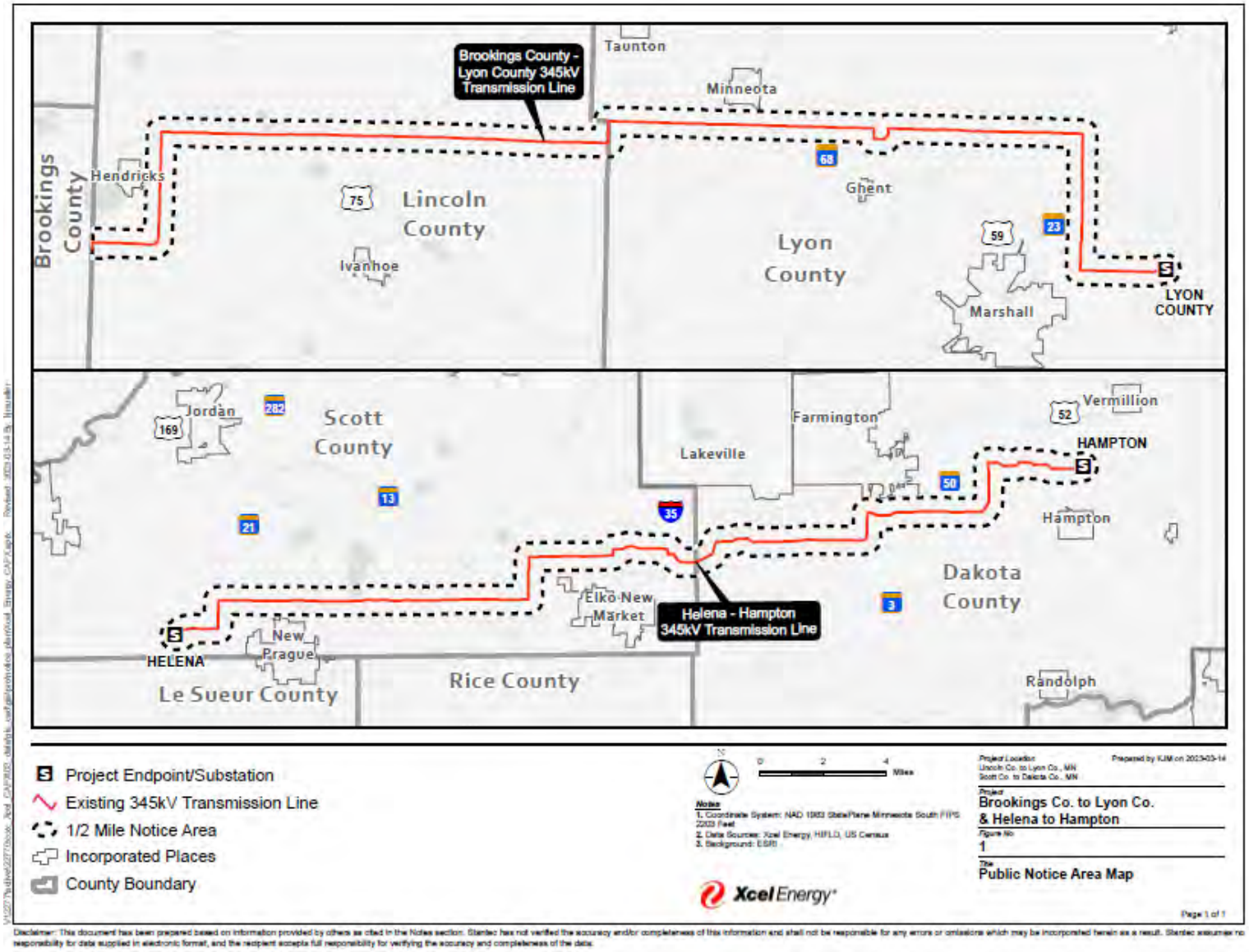
Figure 1


Brookings County - Lyon County 345kV Transmission Line
Taunton
Minneota
Brookings County
Hendricks
Lincoln County
Ivanhoe
Ghent
Lyon County
Marshall
LYON COUNTY
Jordan
Scott County
Farmington
Vermillion
Lakeville
HAMPTON
Hampton
Dakota County
Elko New Market
Helena - Hampton 345kV Transmission Line
New Prague
HELENA
Le Sueur County
Rice County
Randolph
Project Endpoint/Substation
Existing 345kV Transmission Line
1/2 Mile Notice Area
Incorporated Places
County Boundary
Miles
Project Location
Lincoln Co. to Lyon Co., MN
Scott Co. to Dakota Co., MN
Project
Brookings Co. to Lyon Co. & Helena to Hampton
Figure No.
1
Title
Public Notice Area Map
Xcel Energy

BROOKINGS SECOND CIRCUIT OPEN HOUSES

Join us to learn about the proposed installation of the second circuit for the CapX2020 Brookings project.

Xcel Energy is proposing to add a second transmission line (or 'circuit') to the existing transmission line between the Brookings Substation near White, S.D., and the Lyon County substation near Marshall, MN, as well as the portion between the Helena Substation in Scott County, MN and the Hampton Substation in Dakota County. The portion between Lyon County and Helena Substation was built as a double-circuit project when originally constructed.

Landowners and local officials are invited to attend an open house to learn more about the project, including schedule, construction activities and the regulatory process. Project representatives will be there to answer questions and provide information about the project.

Adding a 'second circuit' means the installation of an additional transmission circuit on existing transmission towers that were designed to accommodate the additional infrastructure.

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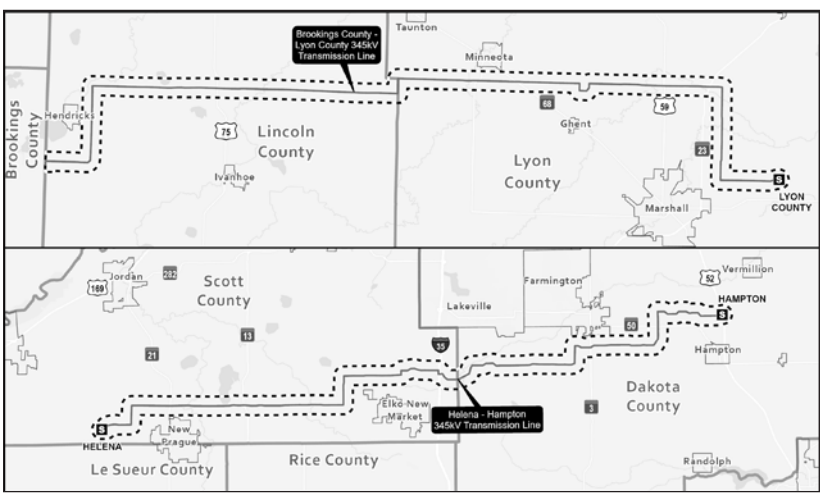

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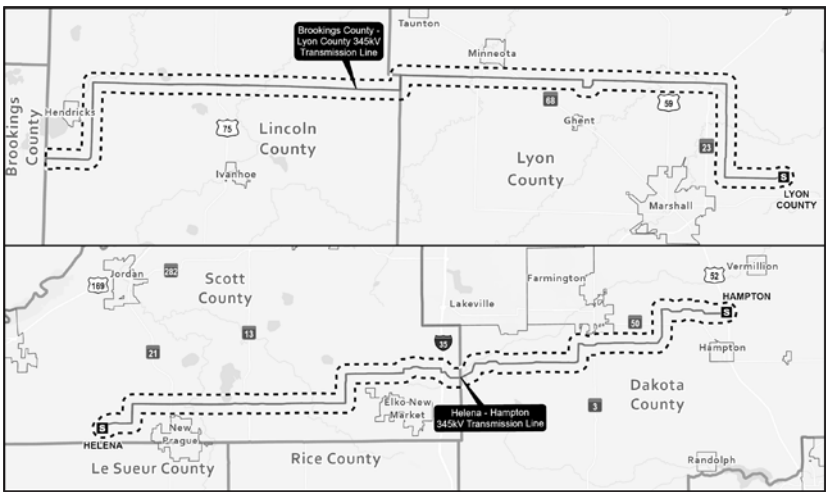

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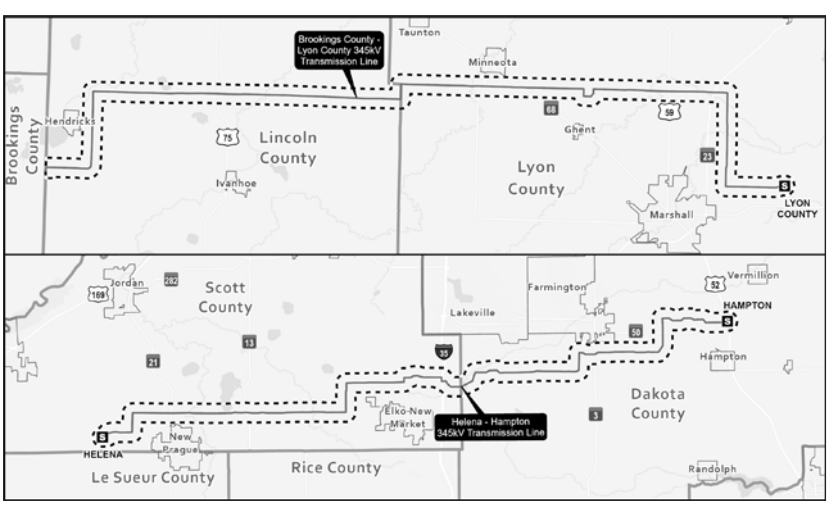

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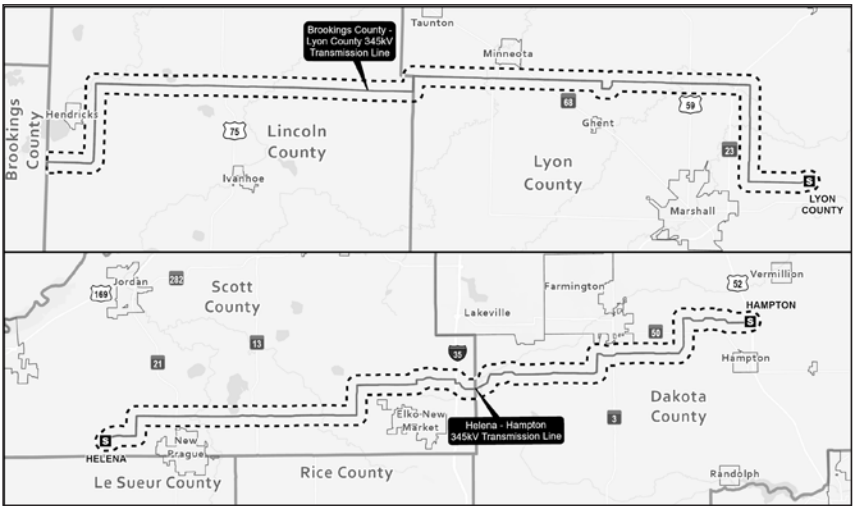

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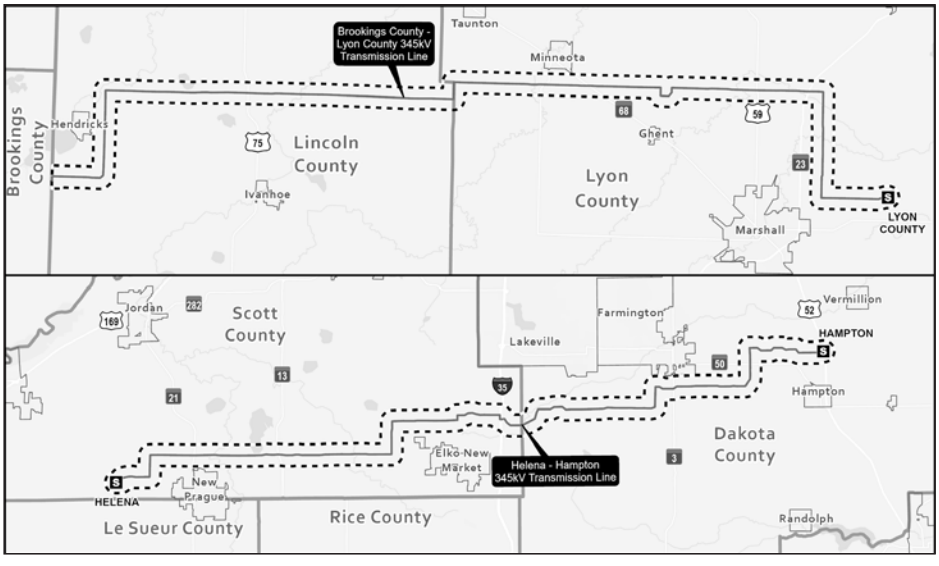

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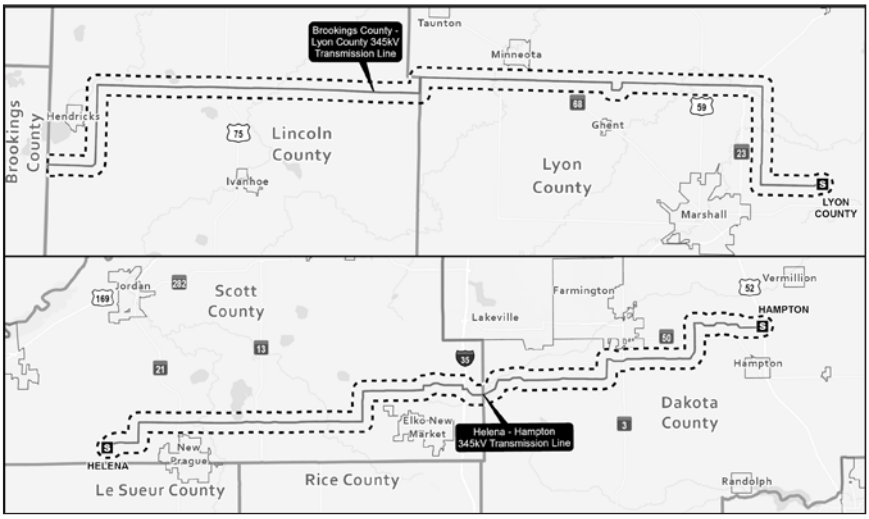

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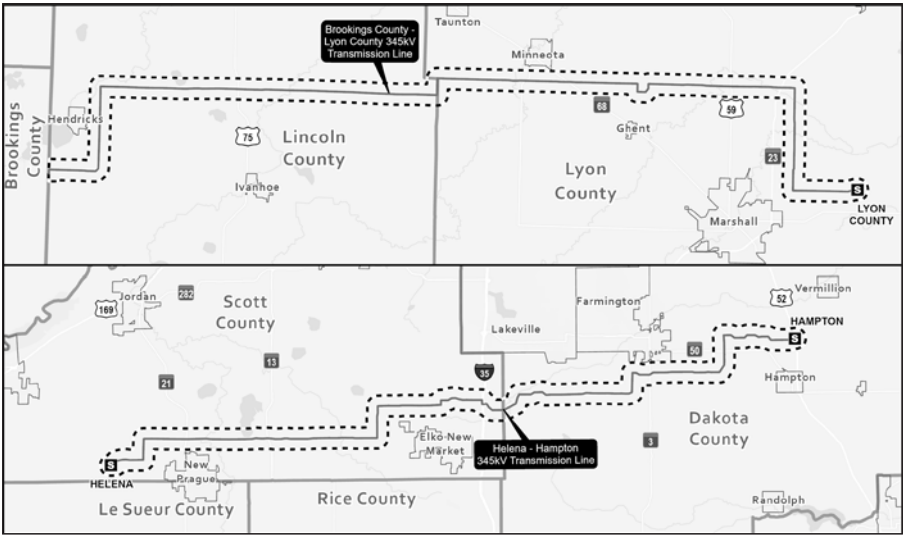

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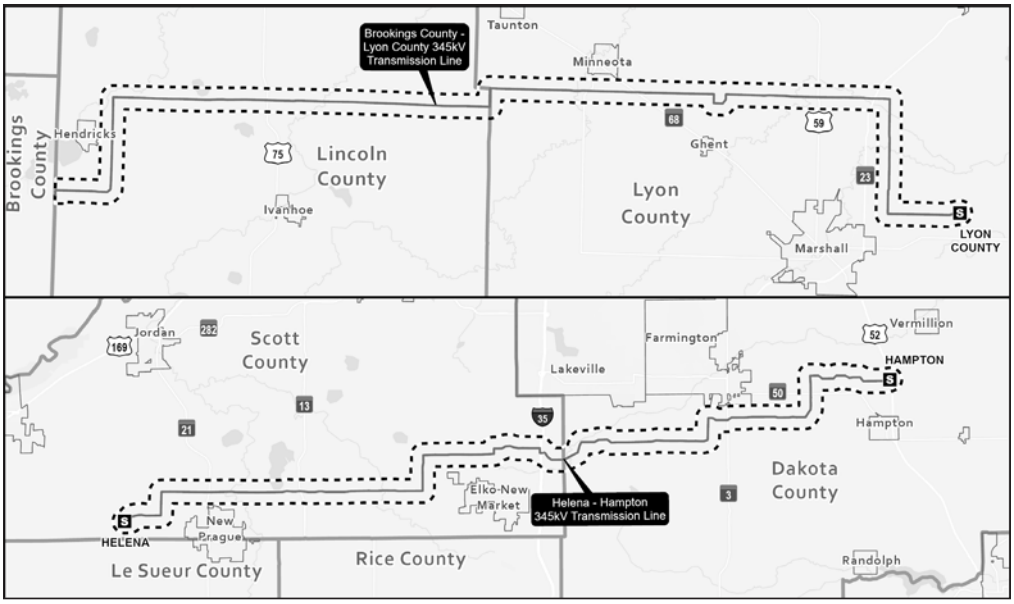

Xcel Energy®

November 8, 2023

XCEL ENERGY

Brookings County to Lyon County & Hampton to Helena 345 kV Double Circuit Transmission Lines

EMF and Audible Noise Report
Revision 0

PROJECT NUMBER:
0243473_0000, 0243474_0000, 0243475_0000, 0243476_0000

PROJECT CONTACT:
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POWER ENGINEERS

EMF AND AUDIBLE NOISE REPORT

PREPARED FOR:
XCEL ENERGY

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REVISION HISTORY						
REV.	ISSUE DATE	ISSUED FOR	PREP BY	CHKD BY	APPD BY	NOTES
A	2023-06-09	Appvl	DP	JAM	GCD	Issued for review
B	2023-08-11	Appvl	DP	JAM	GCD	Issued for implementation
0	2023-11-08	Impl	KM	JAM	GCD	Update to include pre-project audible noise results. Issued for implementation.

"Issued For" Definitions:

- "Prelim" means this document is issued for preliminary review, not for implementation
- "Appvl" means this document is issued for review and approval, not for implementation
- "Impl" means this document is issued for implementation
- "Record" means this document is issued after project completion for project file

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1.0 EXECUTIVE SUMMARY

POWER Engineers, Inc. (POWER) performed an analysis of electric fields, magnetic fields (EMF) and audible noise for Xcel Energy's 345 kV double circuit transmission lines from Brookings County Substation to Lyon County Substation (BOK-LYC) and from Hampton Substation to Helena Substation (HMP-HNA). The Brookings County to Lyon County route is from Brookings County, South Dakota to Lyon County Minnesota, while the Hampton to Helena route is from Scott County, Minnesota to Dakota County, Minnesota. Both transmission line routes are having a second circuit installed on existing double circuit tower structures. Existing circuits for each transmission line route consist of double bundle 954 kcmil T13 "Cardinal" ACSS/TW phase conductors. New circuits for each transmission line route will consist of a double bundle 795 kcmil "Ibis/VR2" ACSR phase conductors. For each route, an existing 3/8 inch EHS steel shield wire will be replaced with a DNO-10723 OPGW.

The EMF and corona effects were modeled using the Corona and Field Effects Program (CAFEP) software, developed by Bonneville Power Administration (BPA). All calculated values are below the recommended levels specified.

Table 1 and Table 2 show a summary of the maximum values calculated for each line route (BOK-LYC and HMP-HNA) with the double 345 kV transmission line on its own and in parallel with 69 kV and higher circuits identified along each route. The results are be separated by each state: Minnesota and South Dakota.

Table 6 shows a summary of the currents for the existing circuits (pre-project), future loading of the existing circuits (post-project), the new circuits at 100% loading (max) and 60% loading (daily), which are used for the magnetic field analysis. The magnetic field plots in the Results section show results for three different loading cases: 1) the existing circuits only at pre-project loading, 2) the existing circuits with post-project loading and the new second circuit with 100% loading (max); and 3) the existing circuits with post-project loading and the new second circuit with 60% loading (daily). Results presented in Table 1 and Table 2, for magnetic fields, are only for the existing circuits with post-project loading and the new second circuit with 100% loading (max).

The audible noise results for South Dakota are compared against Environmental Protection Agency (EPA) recommended levels for comparison purposes only. The audible noise for Minnesota are compared against Minnesota Pollution Control Agency (MPCA) limits, which are provided in Table 3 in the Methodology section. These audible noise limits are zone dependent with Residential nighttime limit as the most stringent at 50 dBA. The majority of these two routes are the stand-alone double circuit structure with the closest resident 87 feet away from ROW centerline on the side of the new circuit. The maximum audible noise results at 87 feet from centerline on the side of the new circuit is 49.8 dBA.

TABLE 1: MAXIMUM CALCULATED VALUES – MINNESOTA			
CALCULATION	LOCATION	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	BOK-LYC and HMP-HNA (stand-alone)	5.2 kV/m	0.4 kV/m
	*BOK-LYC: 0972-281 to 0972-295	4.4 kV/m	0.4 kV/m
	*BOK-LYC: 0972-295 to 0972-302	5.2 kV/m	1.0 kV/m
	**HMP-HNA: 0960-107 to 0960-109	4.6 kV/m	0.5 kV/m
Magnetic Field	BOK-LYC (stand-alone)	188 mG	39 mG
	HMP-HNA (stand-alone)	178 mG	47 mG
	*BOK-LYC: 0972-281 to 0972-295	182 mG	52 mG
	*BOK-LYC: 0972-295 to 0972-302	181 mG	98 mG
	**HMP-HNA: 0960-107 to 0960-109	166 mG	55 mG
Audible Noise	BOK-LYC and HMP-HNA (stand-alone)	52.7 dBA	50.6 dBA
	*BOK-LYC: 0972-281 to 0972-295	52.3 dBA	50.7 dBA
	*BOK-LYC: 0972-295 to 0972-302	52.8 dBA	50.7 dBA
	**HMP-HNA: 0960-107 to 0960-109	51.6 dBA	50.2 dBA

*Parallel 115 kV transmission lines.
**Parallel 69 kV transmission line

TABLE 2: MAXIMUM CALCULATED VALUES – SOUTH DAKOTA			
CALCULATION	LOCATION	MAXIMUM WITHIN ROW	MAXIMUM AT EDGE OF ROW
Electric Field	BOK-LYC (stand-alone)	5.2 kV/m	0.4 kV/m
	*BOK-LYC: 0972-2 to 0972-4	8.5 kV/m	0.7 kV/m
	*BOK-LYC: 0972-4 to 0972-15	5.4 kV/m	1.5 kV/m
Magnetic Field	BOK-LYC (stand-alone)	188 mG	39 mG
	*BOK-LYC: 0972-2 to 0972-4	217 mG	79 mG
	*BOK-LYC: 0972-4 to 0972-15	194 mG	167 mG
Audible Noise	BOK-LYC (stand-alone)	59.1 dBA	57 dBA
	*BOK-LYC: 0972-2 to 0972-4	55.6 dBA	52.0 dBA
	*BOK-LYC: 0972-4 to 0972-15	58.8 dBA	56.7 dBA

*Two parallel 115 kV transmission lines.

2.0 METHODOLOGY

2.1 EMF & Audible Noise Effects

The EMF and audible noise analysis was performed using Bonneville Power Administration's CAFEP software. CAFEP uses the electrical and physical characteristics of the transmission line to calculate resulting electric and magnetic fields, and audible noise.

The electric fields and audible noise are driven by the maximum operating voltage of conductors. Magnetic fields are driven by the line current loading, which varies over time. Therefore, the magnetic fields calculations were preformed using steady state winter emergency loading conditions.

The values of these effects are typically of concern at various points across the right-of-way (ROW). Therefore, values reported include the maximum values within the ROW, along with the calculated values at the edge of the ROW. Also included for reference are plots of the results for all analyzed values across the entire width of the ROW and slightly beyond the ROW. For the analysis, electric and magnetic fields were analyzed at a minimum conductor height (near mid-span, at maximum sag), as this location will produce the worst-case scenario. Audible noise was analyzed at the average conductor height along a span, as these effects are generally a concern over a larger area.

2.2 Permissible Levels

2.2.1 Minnesota Specific Levels

Both line routes are located, in some portion, in Minnesota. Minnesota has a reference electric field value of 8 kV/m. which is defined only for maintaining a 2 mA limit and, therefore, is not used as means of reference here for public concern. Minnesota Pollution Control Agency (MPCA) has standards for audible noise depending on the noise area classification. Table 3 provides these audible noise rules per classification area. As these line routes pass through various area classifications, the most stringent, at 50 dBA for nighttime $L_{50,}$ is being used to compare against results. Minnesota does not have any specified levels for magnetic fields.

TABLE 3: NOISE RULES IN MINNESOTA

NOISE AREA CLASSIFICATION	DAYTIME		NIGHTTIME	
	L_{10}	L_{50}	L_{10}	L_{50}
1: Residential housing, religious activities, camping and picnicking areas, health services, hotels, educational services	65 dBA	60 dBA	55 dBA	50 dBA
2: Retail, business and government services, recreational activities, transit passenger terminals	70 dBA	65 dBA	70 dBA	65 dBA
3: Manufacturing, fairgrounds and amusement parks, agricultural and forestry activities	80 dBA	75 dBA	80 dBA	75 dBA

2.2.2 South Dakota Specific Levels

The transmission line route from Brookings County to Lyons County has a portion of the line located in South Dakota. South Dakota does not have any specified levels for electric field, magnetic field,

and audible noise. Nationally audible noise from a transmission line has no regulated limit. The Environmental Protection Agency (EPA) provides a recommended limit of 55 dBA for outdoors for a day-night average sound level. More on each of these references are discussed in the results sections.

3.0 STUDY DETAILS

Electric and magnetic fields, and audible noise are all based on the electrical and physical characteristics of the transmission line. Specifically, these factors are driven by the voltage and current loading of the line, the physical conductor characteristics and bundling, relationships of each phase conductor to the other phase conductors and shield wires, and the heights of the conductor from the ground. As a result, there are a number of factors that will affect results. The data listed in Table 4 was used for the analysis. The dominant double circuit structure shown in Figure 27 in Appendix A was used for entirely of both line routes with exception of structure 0972-281 to 0972-295 of the Brookings County to Lyon County route, where a double circuit with a 115 kV underbuilt structure was used, as referenced in Table 5. Should any of this data change, the results will also change.

TABLE 4: SUMMARY OF INPUT DATA

MEASUREMENT CATEGORY	DATA	APPLICABLE LINE ROUTE
Voltage	362 kV (105% of nominal)	Both
Frequency	60 Hz	Both
Line Length	58 miles	BOK-LYC
	39 miles	HMP-HNA
Average Line Elevation	1,500 feet	Both
Right-of-Way (ROW) Width	150 feet	Both
Phase Conductor	A-B-C, C-B-A	Both
Bundling	2	Both
Minimum Conductor Height	30.2 feet	Both
Average Structure Height	150 feet	Both
Conductor Sag	49.6 feet*	Both
OPGW	DN0-10723	Both
OPGW Sag	42.2 feet**	Both

*Assumed sag based on minimum conductor height and average structure height
**Shield wire sag assumed to be 85% of phase conductor sag

Along the Brookings County to Lyon County route, four different parallel line configurations were identified and one parallel line configuration along the Hampton to Helena route. Table 5 provides the line information and location of these parallel transmission lines. Table 6 is a summary of the existing and post project currents that was used for the analysis for both routes.

TABLE 5: SUMMARY OF PARALLEL LINE INPUT DATA					
MEASUREMENT CATEGORY	PARALLEL CIRCUITS				
	EAST RIVER ELECTRIC (UNKNOWN)	GREAT RIVER ENERGY (UNKNOWN)	5538 CIRCUIT (BOK-YNK-1)	5547 CIRCUIT (BOK-YNK-2)	EAST RIVER ELECTRIC (WHITE-IVANHOE)
Location	BOK-LYC 0972-281 to 0972-302	HMP-HNA 0960-107 to 096-109	BOK-LYC 0972-2 to 0972-4	BOK-LYC 0972-2 to 0972-15	BOK-LYC 0972-4 to 0972-15
Voltage	115 kV	69 kV	115 kV	115 kV	115 kV
Structure Reference	Appendix A Figure 28 and Figure 29[4]	Appendix A Figure 28	Appendix A Figure 30	Appendix A Figure 31 and Figure 32[5]	Appendix A Figure 32
Conductor	ACSS Drake[2]	ACSR Drake[2]	ACSS Drake	ACSS Drake	ACSS Drake
Bundling	1	1	2	2	1
Minimum Conductor Height	25.2 feet[6]	25.2 feet[6]	25.2 feet[6]	25.2 feet[6]	25.2 feet[6]
Conductor Sag	57.6 feet	49.6 feet	42.1 feet	42.1 feet	67.3 feet
Shield Wire	NA	NA	3/8" EHS	3/8" EHS	3/8" EHS
Shield Wire Sag	NA	NA	35.8 feet	35.8 feet	57.2 feet

(1)105% of Nominal
(2) Assumed based on East River Electric White-Ivanhoe 115 kV transmission line and Xcel Energy conductor rating for ACSS Drake.
(3) Rating for ACSS Drake used for magnetic field analysis, which is very conservative for the ACSR Drake conductor.
(4) Reference Figure 28 for structures 0972-281 to 0972-295 and reference Figure 29 for structures 0972-295 to 0972-302
(5) Reference Figure 31 for structures 0972-2 to 0972-4 and reference Figure 32 for structures 0972-4 to 0972-15
(6) Minimum conductor height per Xcel Energy standards for 115 kV assumed

TABLE 6: SUMMARY OF EXISTING AND POST-PROJECT CURRENTS				
CIRCUIT	NEW CIRCUIT(AMPS)		EXISTING (Amps)	POST-PROJECT (Amps)
	60% Load	100% Load	100% Load	100% Load
Brookings County-Lyons County (Existing)	NA	NA	1870	1342
Brookings County-Lyons County (New)	574	957	NA	NA
Hampton to Helena (Existing)	NA	NA	1466	1310
Hampton to Helena (New)	552	920.	NA	NA
East River Electric	NA	NA	747	442
Great River Energy	NA	NA	254	167
5538 Circuit	NA	NA	898	1014
5547 Circuit	NA	NA	909	1024
Easter River Electric (White-Ivanhoe)	NA	NA	1436	70

Phasing information and horizontal distances used in this project are shown in Figure 1 through Figure 6. Figure 1 shows a cross-phasing between the two circuits for both the Brookings County to Lyon County and Hampton to Helena routes. The phasing of the parallel circuit along the Hampton to

Helena route is unknown; therefore, the same phasing from the Brookings County to Lyon County route was used, which is also the worst-case (highest results). The cross-phasing may not always be A-B-C and C-B-A from top-to-bottom but will have similar results. The phase angles are assumed to be the same between Xcel Energy, East River Electric, and Great River Electric with assigned designation of A = 0, B = 240, and C = 120 degrees.

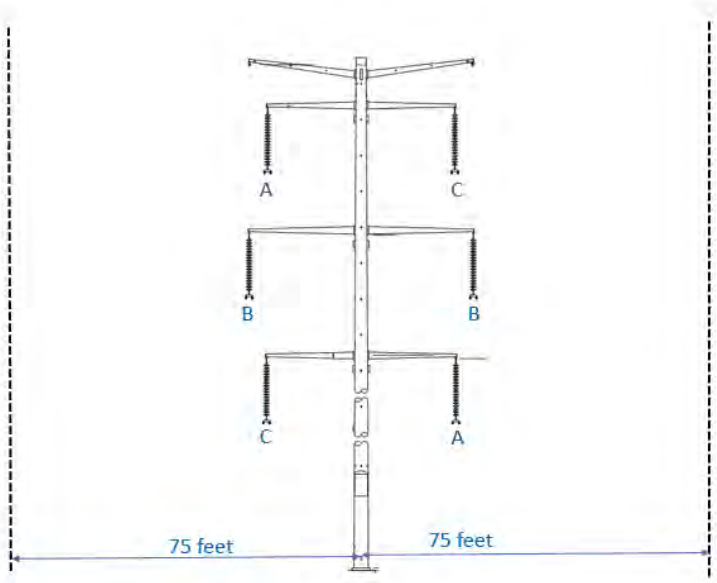

Figure 1: BOK-LYC and HMP-HNA Double 345 kV Phasing (Typical)

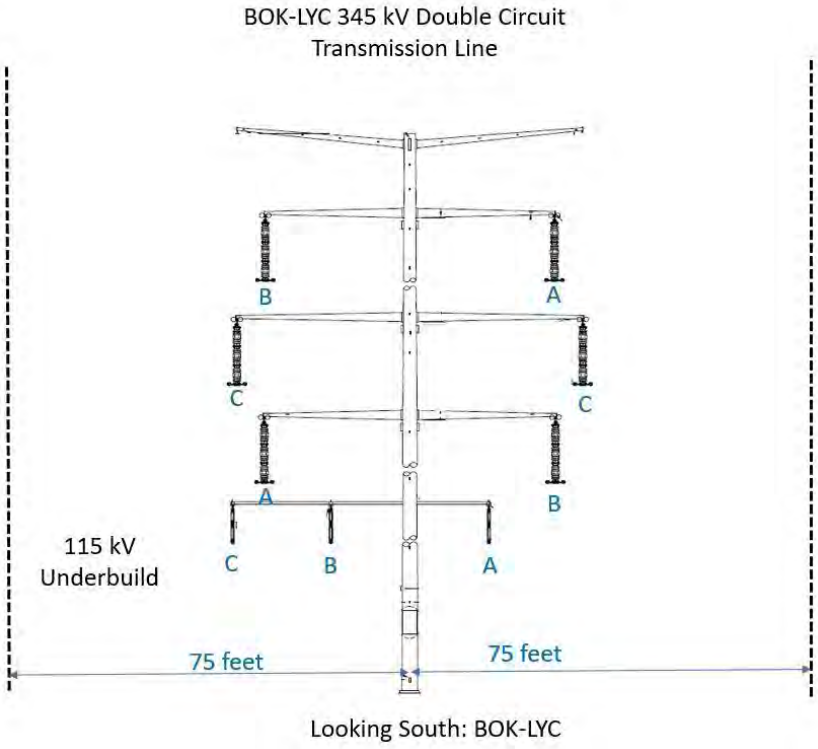

Figure 2: Parallel Circuit Phasing – BOK-LYC (0972-281 to 0972-295)

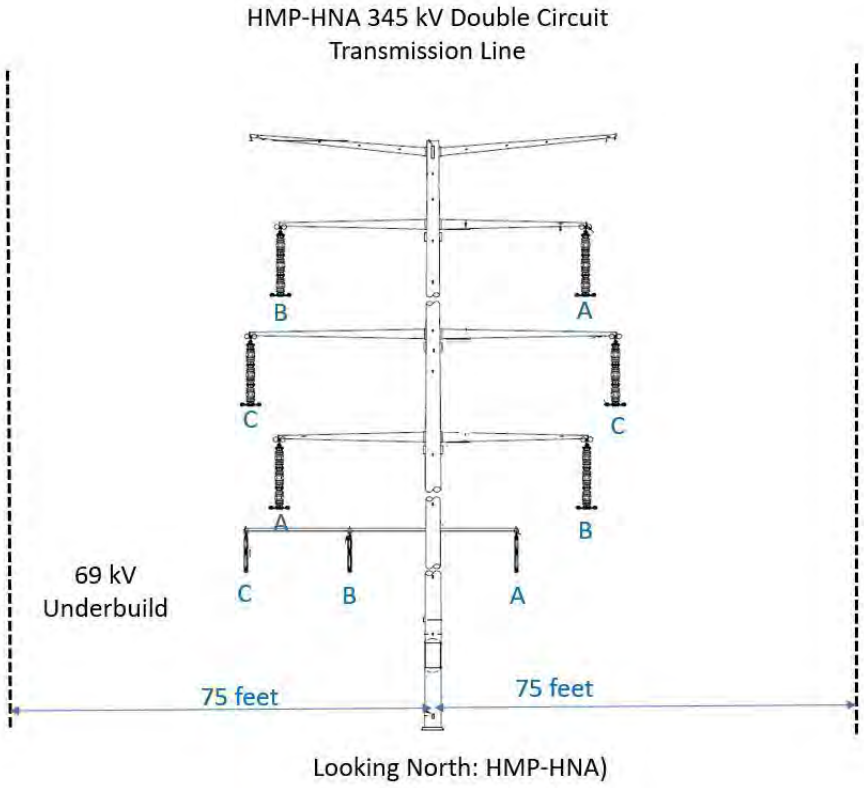

Figure 3: HMP-HNA (0960-107 to 0960-109) with 69 kV Underbuild

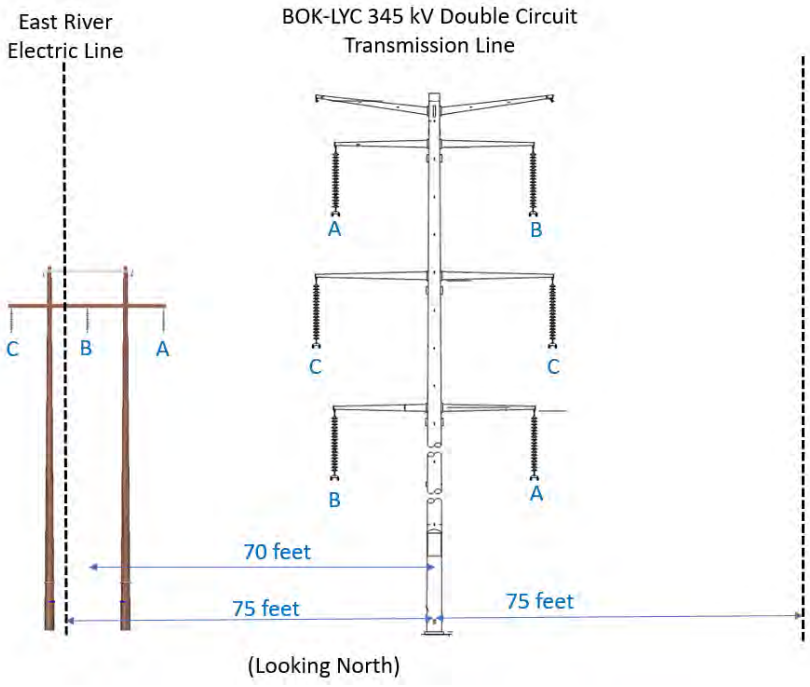

Figure 4: Parallel Circuit Phasing and Distances – BOK-LYC (0972-295 to 0972-302)

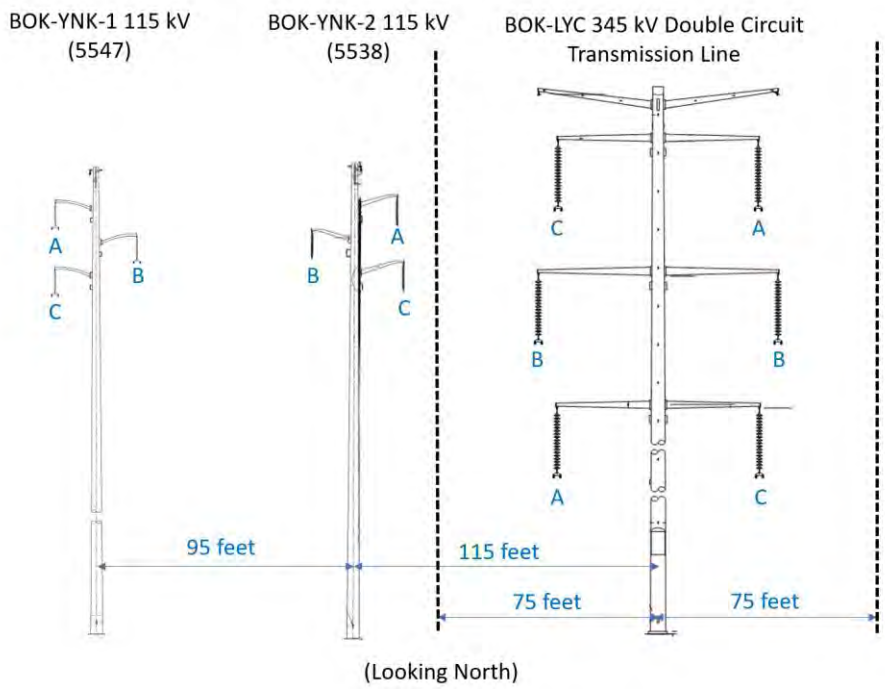

Figure 5: Parallel Circuit Phasing and Distances – BOK-LYC (0972-2 to 0972-4)

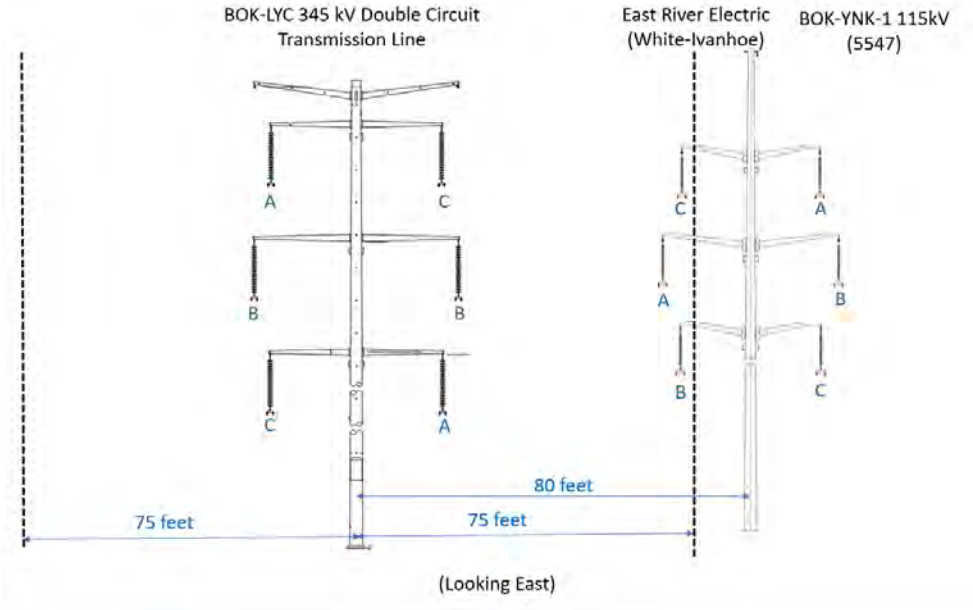

Figure 6: Parallel Circuit Phasing and Distances – BOK-LYC (0972-4 to 0972-15)

4.0 RESULTS

4.1 Electric Field

The electric field strength is a measure of the force per unit charge at a given point in space relative to a charged object. It is typically measured in volts or kilovolts per meter (kV/m). Table 7 through Table 9 in Appendix B provide a summary of the electric field values across the ROW in 25 feet increments, broken down by route and impacted state. Values are calculated at the minimum conductor height (near mid-span) at a height of 1.0 m (3.28 ft) above the ground per IEEE Std 644-2019.

Figure 7 shows the electric fields across the ROW for the double circuit structure used on both the Brookings County to Lyon County and Hampton to Helena routes for both Minnesota and South Dakota. Figure 8 through Figure 12 show electric fields across the ROW for the double circuit 345 kV transmission line in parallel with other circuits identified along each route. Results are with all circuits in services.

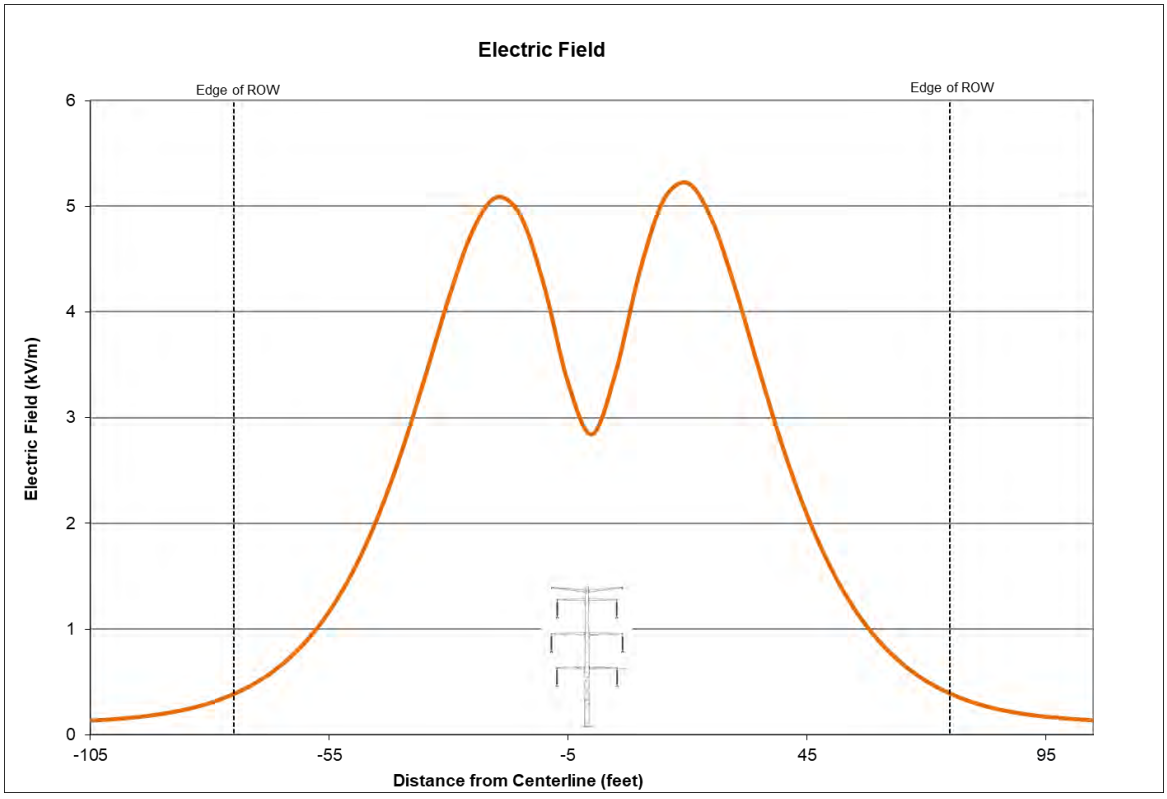

Figure 7: BOK-LYC & HMP-HNA Double 345 kV Electric Fields – Stand Alone

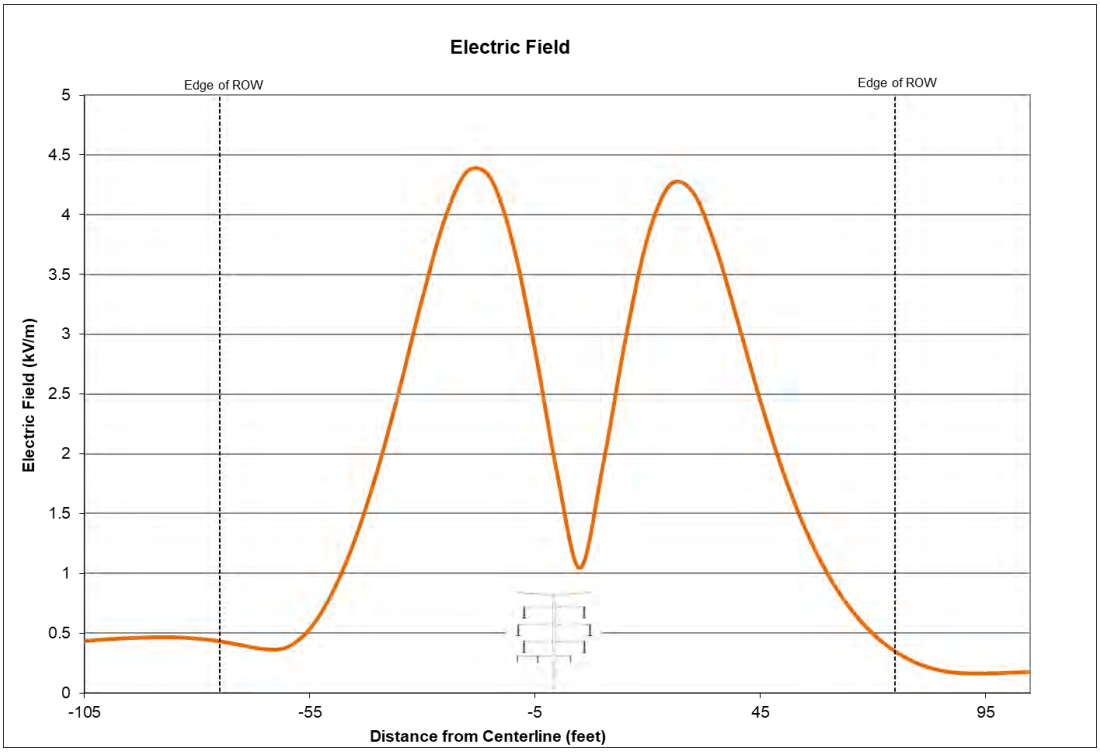

Figure 8: BOK-LYC (0972-281 to 0972-295) Electric Fields – 115 kV Underbuild

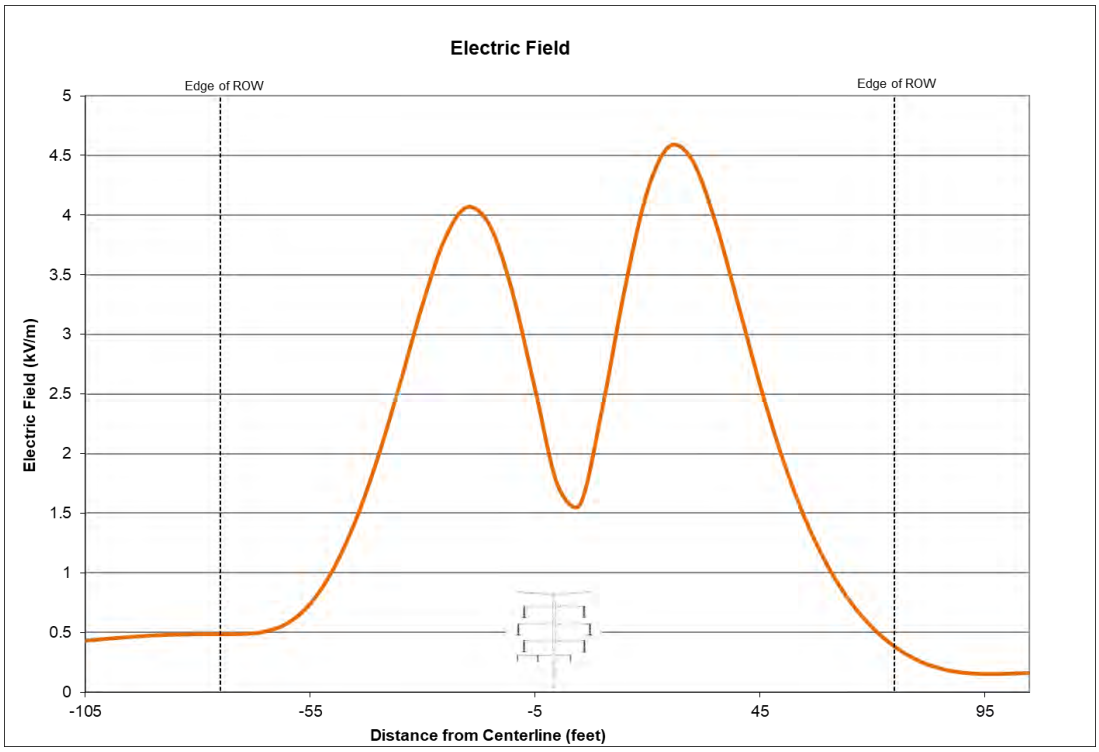

Figure 9: HMP-HNA (0960-107 to 0960-109) Electric Fields – 69 kV Underbuild

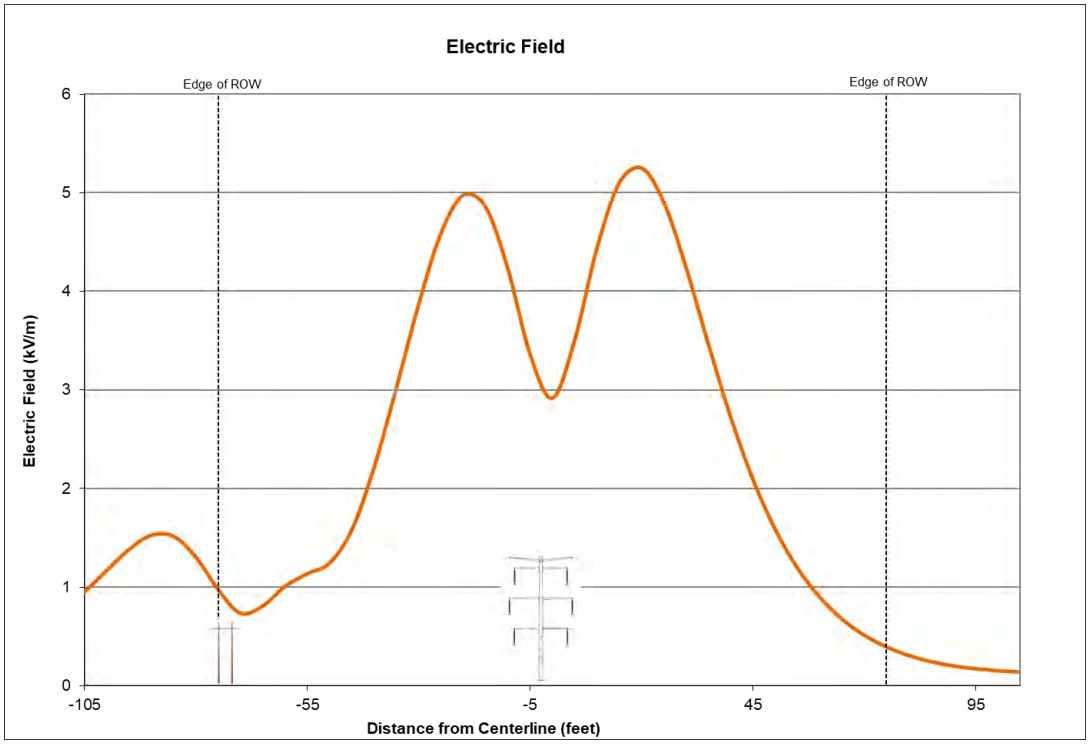

Figure 10: BOK-LYC (0972-295 to 0972-302) Electric Fields – Parallel 115 kV H-Frame

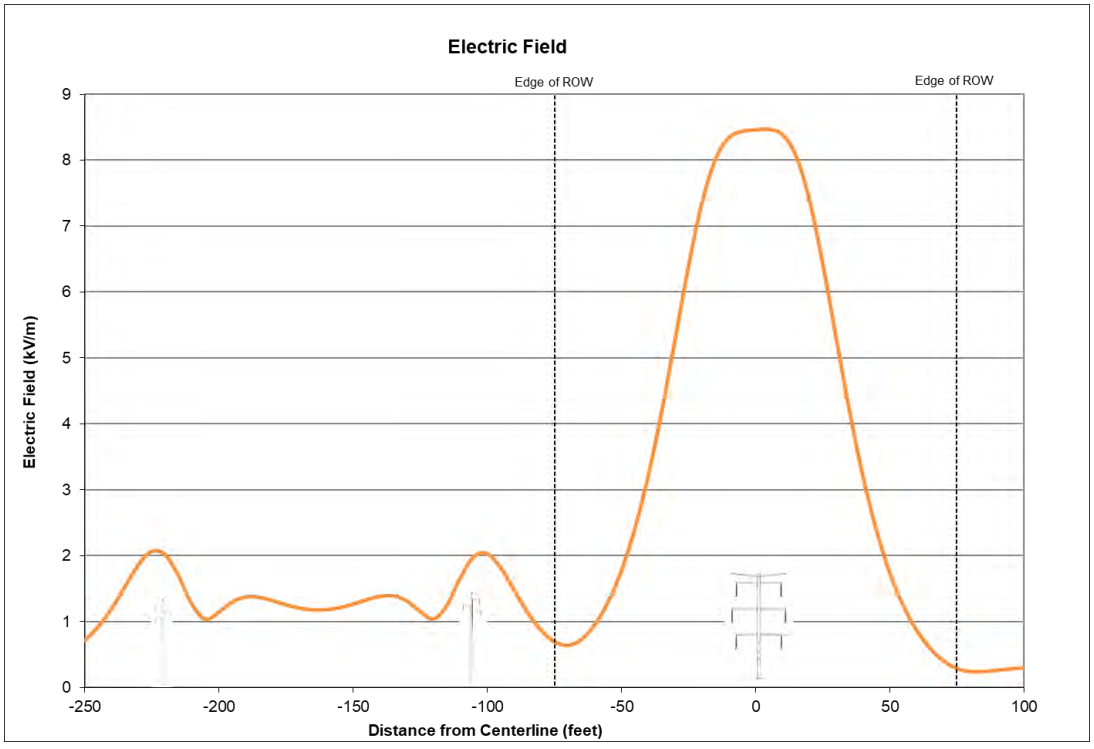

Figure 11: BOK-LYC (0972-2 to 0972-4) Electric Fields – Two Single Circuit Parallel 115 kV

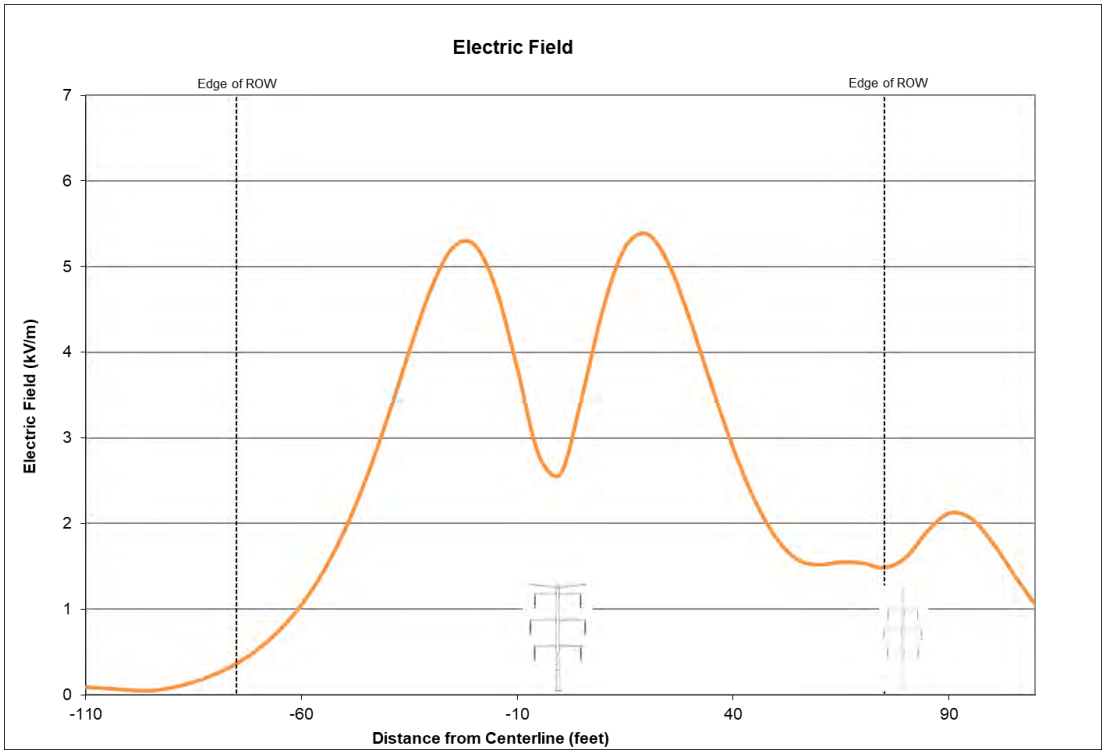

Figure 12: BOK-LYC (0972-4 to 0972-15) Electric Fields – Double Circuit Parallel 115 kV

4.2 Magnetic Field

The reported magnetic field values are the magnetic flux density at a given point in space. Magnetic flux density is measured in gauss or milligauss (mG). Magnetic fields are calculated with post-project loading, max loading, and daily loading current of each circuit in review.

Table 10 through Table 12 in Appendix B provide a summary of the magnetic field values across the ROW in 25 feet increments for each of the transmission line sections analyzed with results broken down by line route and impacted state. Values are calculated at the minimum conductor height (near mid-span) at a height of one meter above the ground per IEEE Std 644-2019.

Figure 13 and Figure 14 show magnetic fields across the ROW for the double circuit structure used on both the Brookings County to Lyon County and Hampton to Helena routes. Figure 15 through Figure 19 show the loading of magnetic fields across the ROW for the double circuit 345 kV transmission line in parallel with other circuits identified along each route. Results are with all circuits in services.

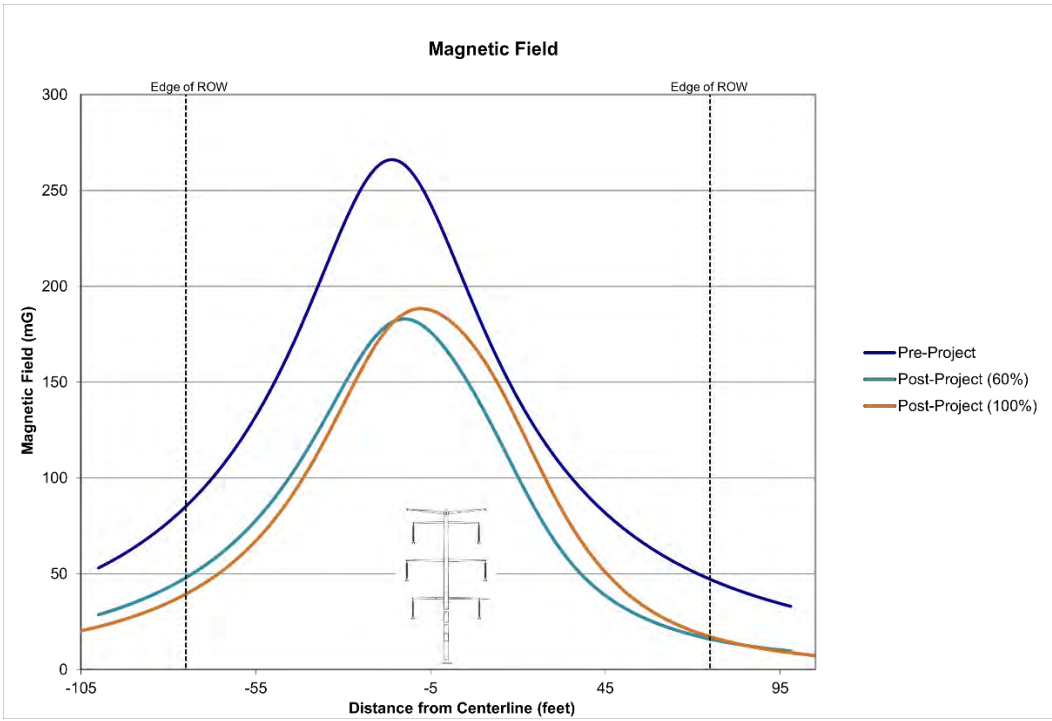

Figure 13: BOK-LYC Double 345 kV Magnetic Fields – Stand Alone

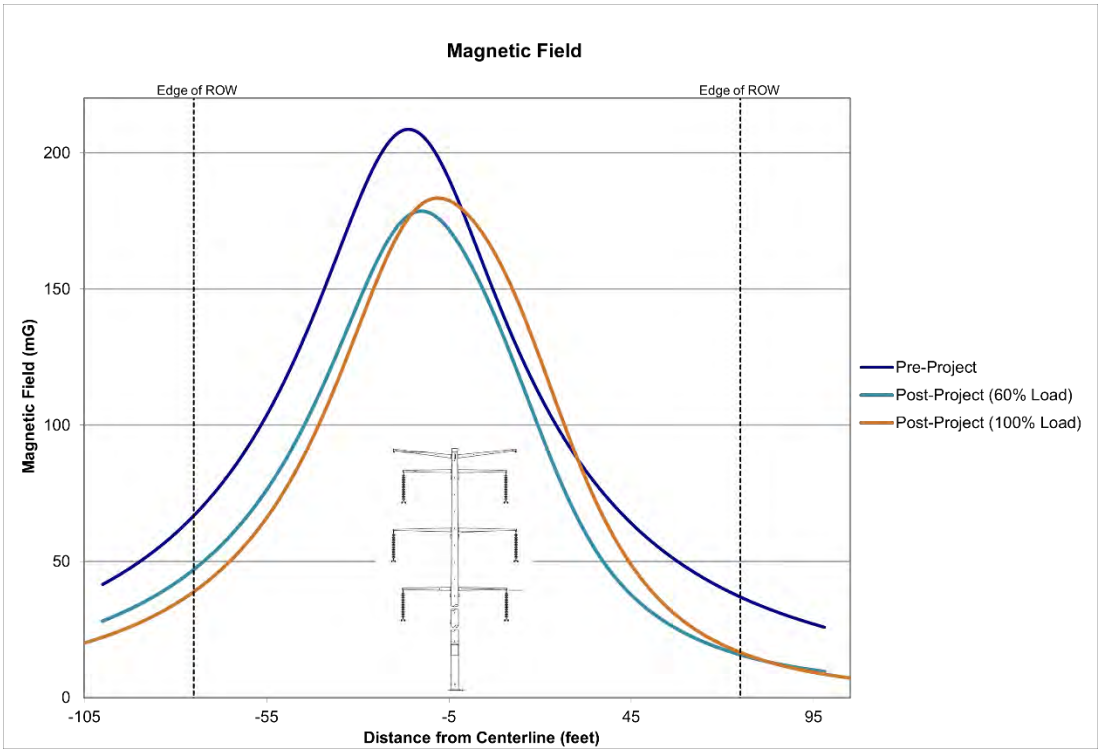

Figure 14: HMP-HNA Double 345 kV Magnetic Fields – Stand Alone

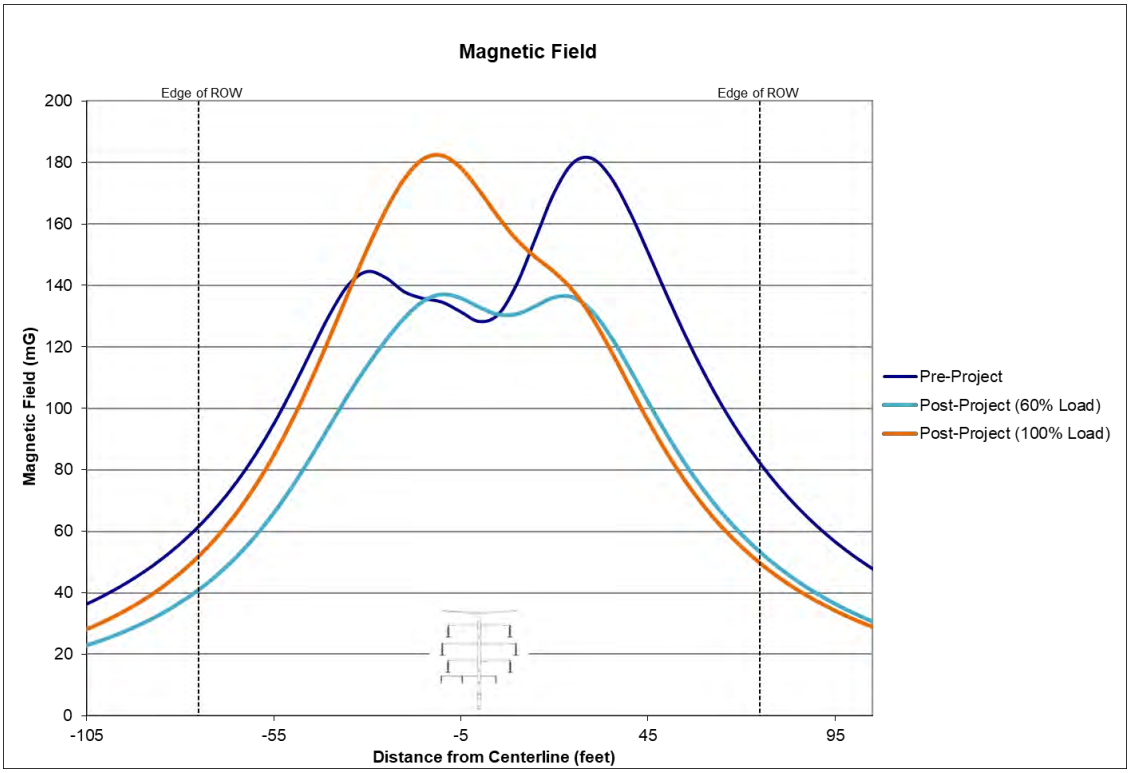

Figure 15: BOK-LYC (0972-281 to 0972-295) Magnetic Fields – 115 kV Underbuild

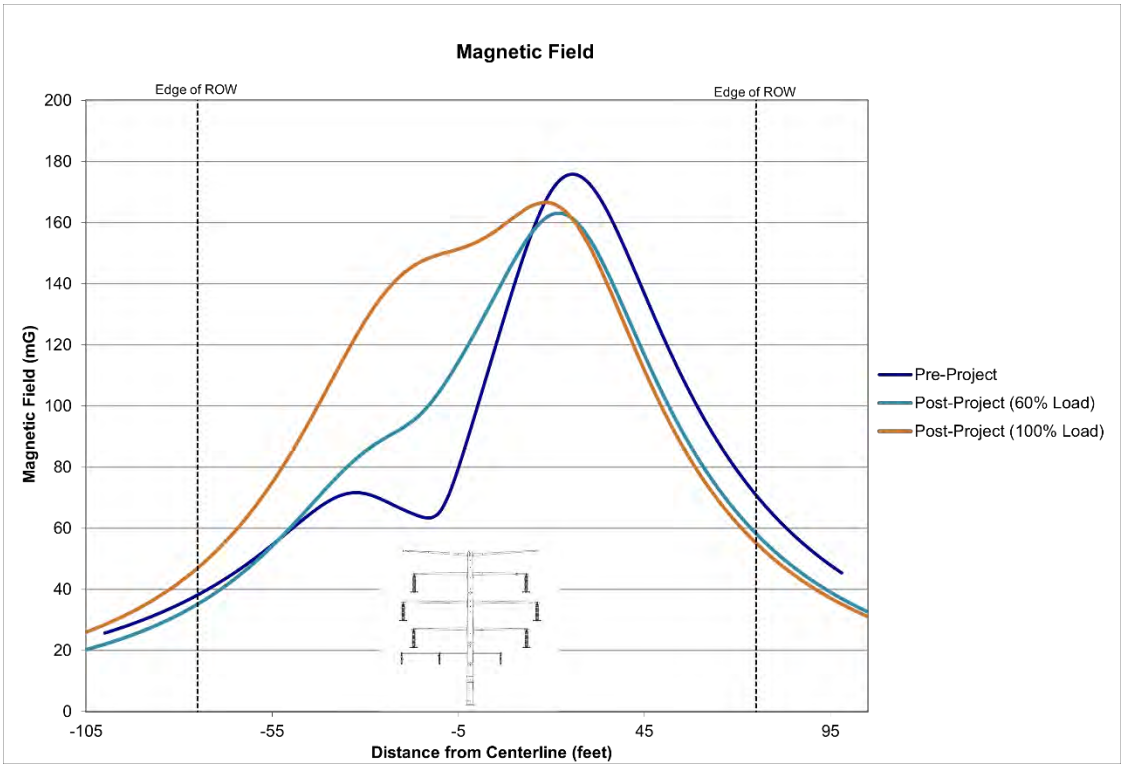

Figure 16: HMP-HNA (0960-107 to 0960-109) Magnetic Fields – 69 kV Underbuild

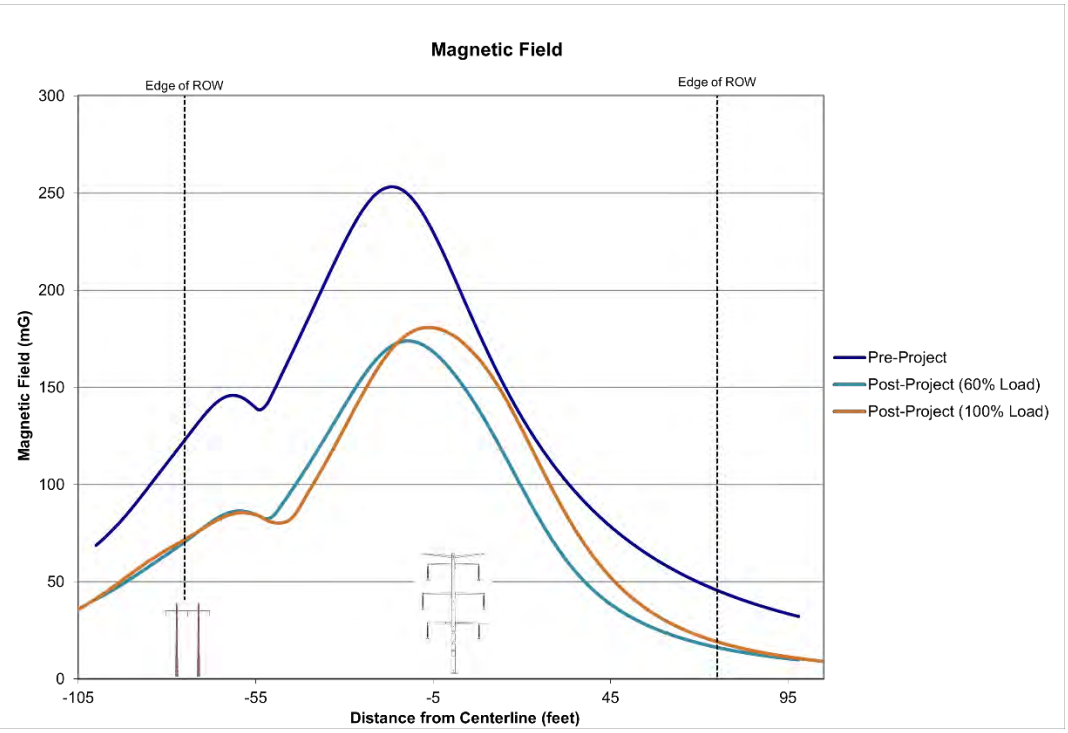

Figure 17: BOK-LYC (0972-295 to 0972-302) Magnetic Fields – Parallel 115 kV H-Frame

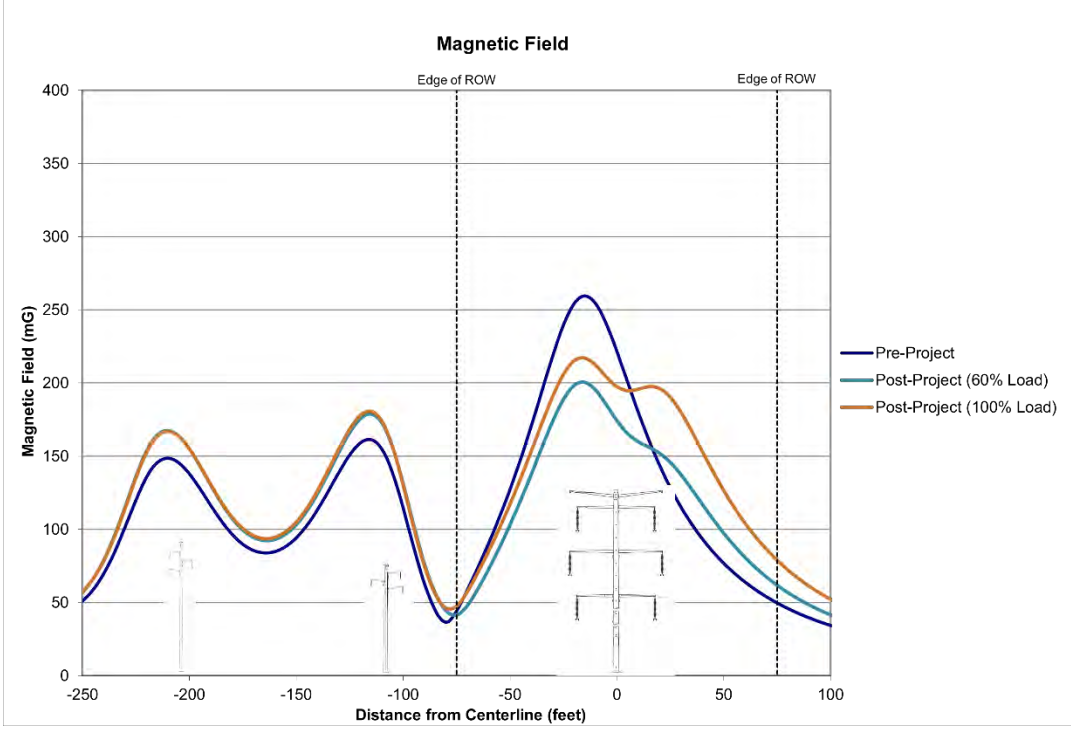

Figure 18: BOK-LYC (0972-2 to 0972-4) Magnetic Fields – Two Single Circuit Parallel 115 kV

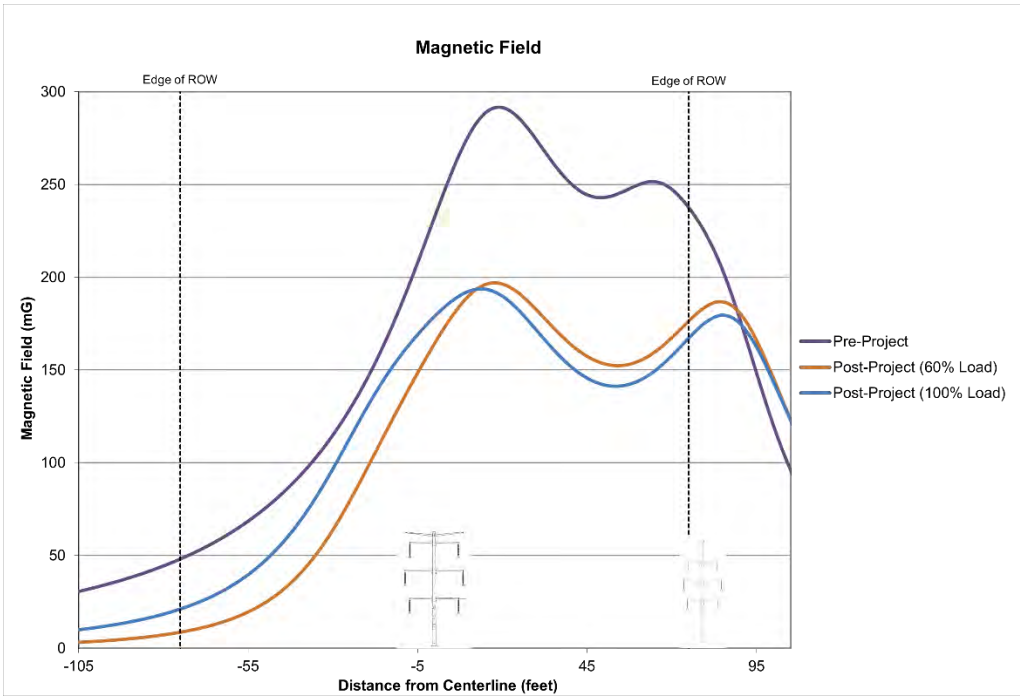

Figure 19: BOK-LYC (0972-4 to 0972-15) Magnetic Fields – Double Circuit Parallel 115 kV

4.3 Audible Noise

Audible noise is measured as an equivalent A-weighted sound-pressure level in decibels (dBA). The L_{50} audible noise (foul weather) values represent the predicted average (L_{50}) noise levels present when foul weather conditions cause the conductors to become wet. The actual value is expected to be at or below this calculated L_{50} value 50% of the time, and above the value the other 50% of the time. Values are calculated at a height of five feet above the ground per IEEE Std 656-2018. These values are applicable against the Minnesota Pollution Control Agency (MPCA) levels presented in Table 3 for noise area classifications.

No guidelines are provided on limits for audible noise in South Dakota; however, EPA guidelines recommend levels below 55 dBA for a day-night average in the outdoors. If applied to transmission lines, this is often measured at the edge of the ROW. The calculated L_{50} rating does not account for the fact that noise intrusions will be more disruptive at night. The L_{dn} (day/night) rating accounts for this fact by adding a 10 dBA penalty to all sounds occurring typically between 10 p.m. and 7 a.m. L_{dn} values can also be derived from daytime and nighttime equivalent values using the following computational formula (Keast 1980 and EPRI 2005):

$$Ldn = 10\ log_{10}\left\{\left(\frac{1}{24}\right)\left[15 * 10^{Ld/10} + 9 * 10^{Ln+10/10}\right]\right\} \quad (1)$$

where L_d = is the daytime L_{50} and L_n is the nighttime L_{50}.

Using this formula, L_{dn} values are calculated for proposed transmission lines using their respective L_{50} values.

The purpose of the EPA guideline is to provide a basis for state and local governments' judgments in setting standards and is not in itself a standard. The EPRI AC Transmission Line Reference Book interprets the L_{dn} = 55 dBA guideline to be applicable to residential areas and other areas where people spend widely varying amounts of time and other places where quiet is a basis for use.

Table 13 through Table 15 in Appendix B provides a summary of the audible noise values across the ROW in 25 feet and 50 feet increments separated by line route and state. Results in Table 13 and Table 15 for Minnesota are presented as L_{50} values and results represented in Table 14 for South Dakota are presented as L_{DN} values.

Figure 20 shows the L50 audible noise across the ROW for the double circuit structure used on both the Brookings County to Lyon County and Hampton to Helena routes applicable to Minnesota. Figure 21 shows the LDN audible noise across the ROW for the double circuit structure used on the Brookings County to Lyon County route applicable to South Dakota. Results are with all circuits in services (Post-Project) and with all circuits in service except for the new second 345 kV circuit (Pre-Project).

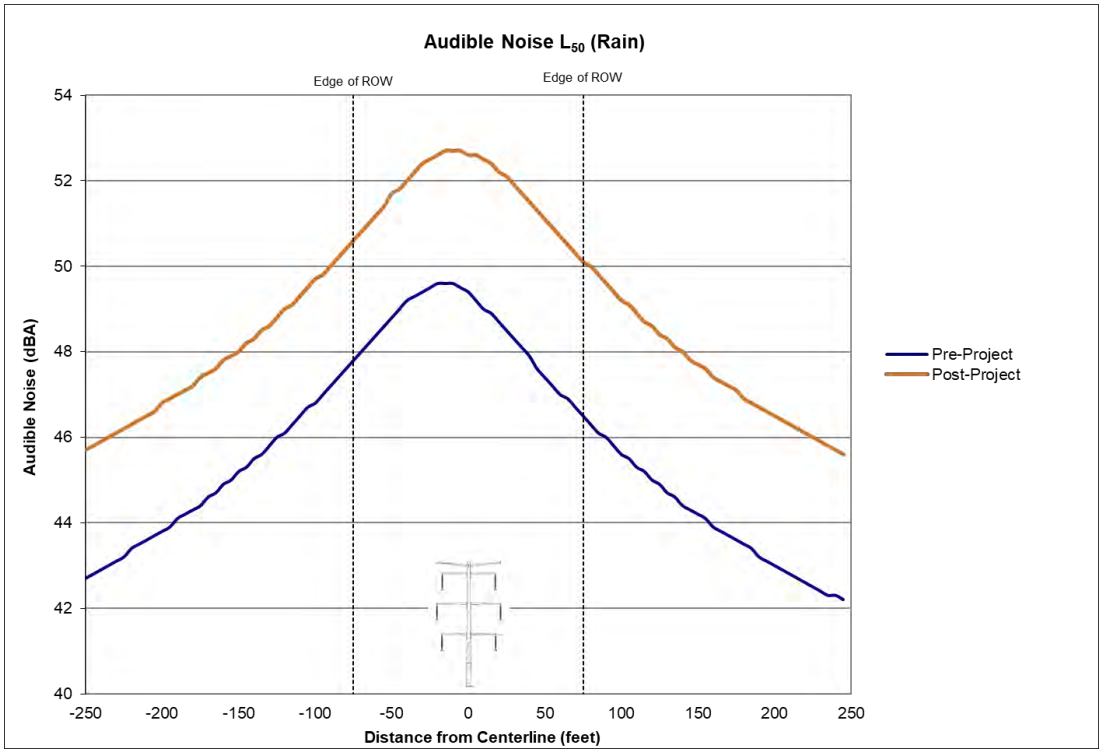

Figure 20: BOK-LYC & HMP-HNA Double 345 kV Audible Noise – Stand Alone (Minnesota)

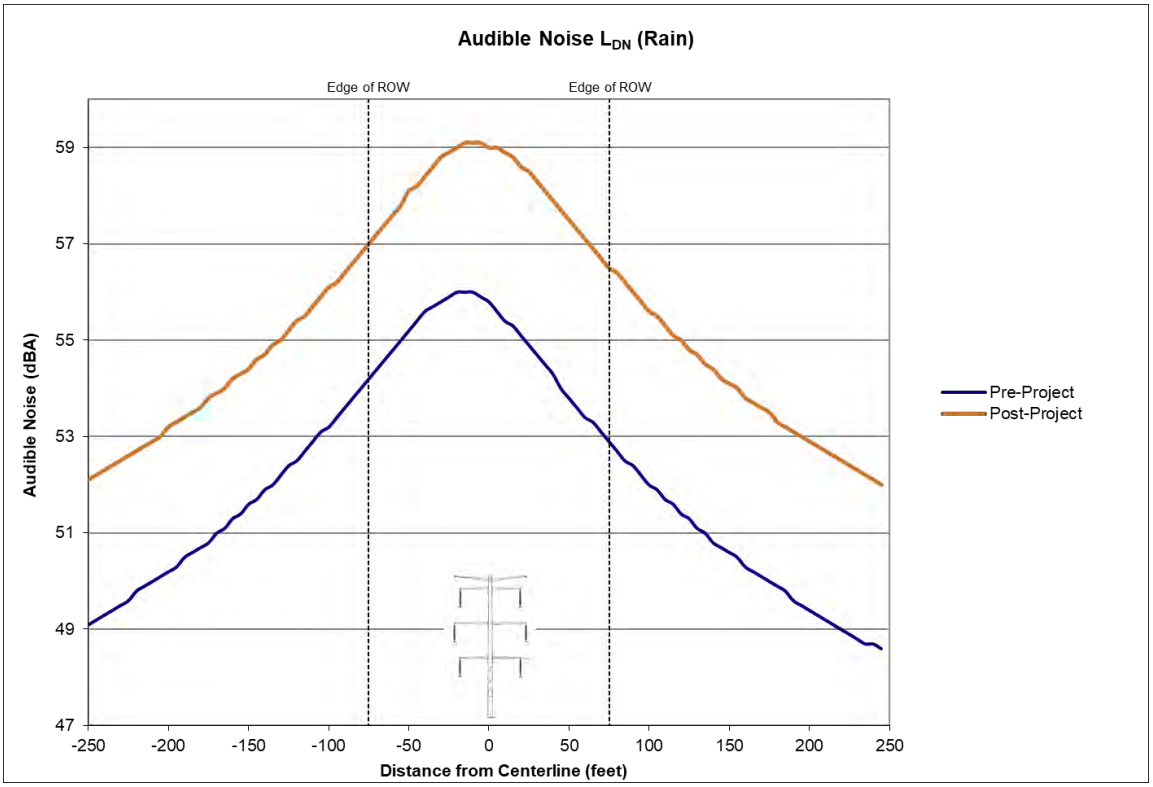

Figure 21: BOK-LYC Double 345 kV Audible Noise – Stand Alone (South Dakota)

Figure 22 through Figure 26 show audible noise across the ROW for the double circuit 345 kV transmission line in parallel with other circuits identified along each route. Results are presented as L_{50} for Figure 22 and Figure 24, applicable to Minnesota, and presented as L_{DN} for Figure 25 and Figure 26, applicable to South Dakota.

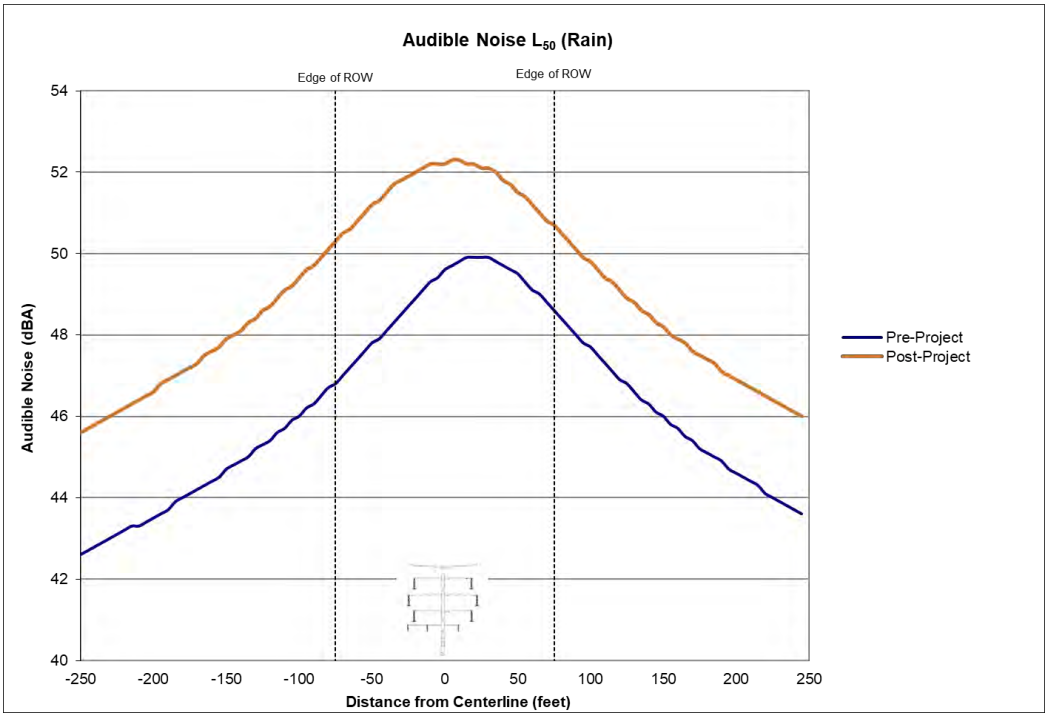

Figure 22: BOK-LYC (0972-281 to 0972-295) Audible Noise – 115 kV Underbuild (Minnesota)

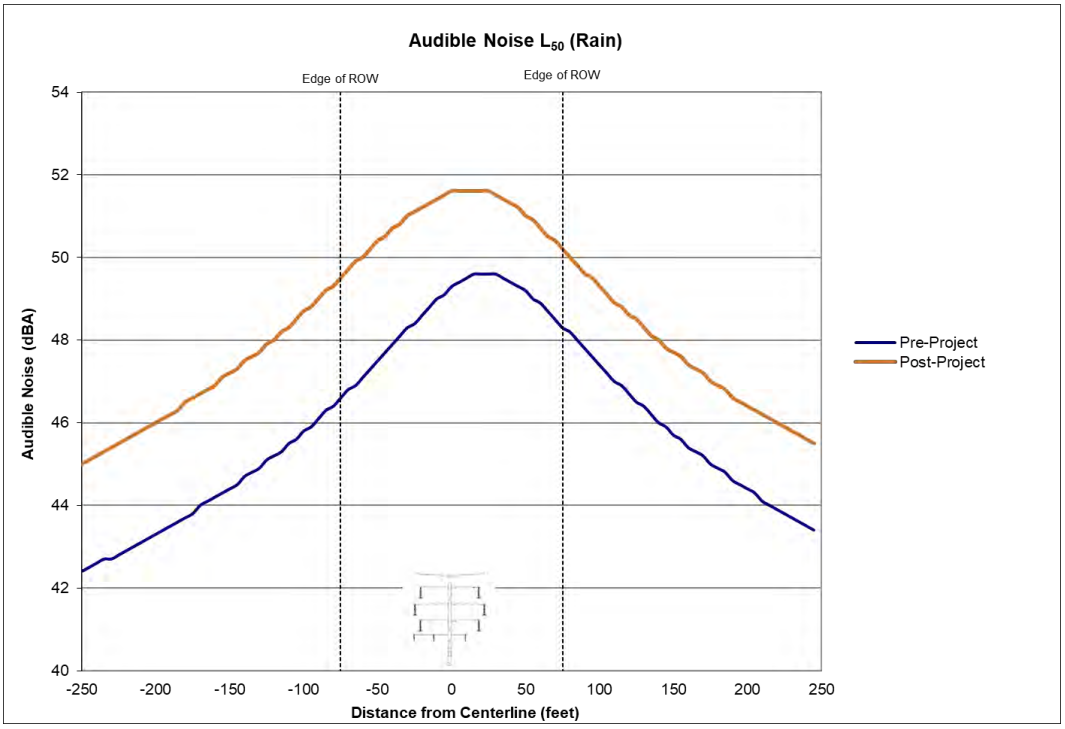

Figure 23: HMP-HNA (0960-107 to 0960-109) Audible Noise – 69 kV Underbuild (Minnesota)

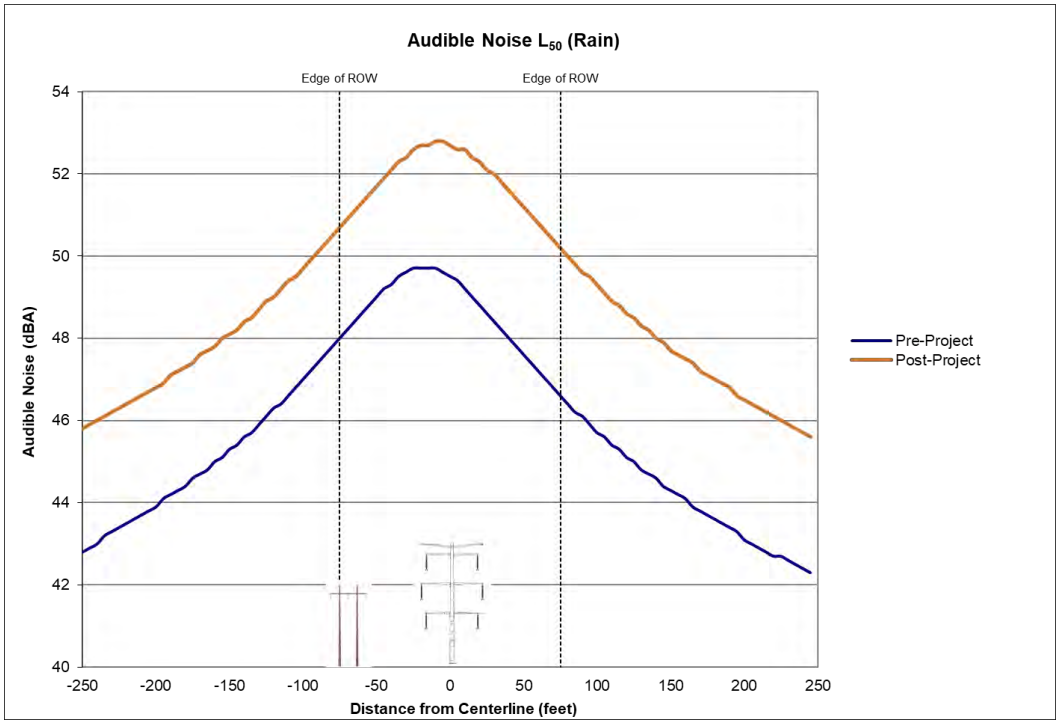

Figure 24: BOK-LYC (0972-295 to 0972-302) Audible Noise – Parallel 115 kV H-Frame (Minnesota)

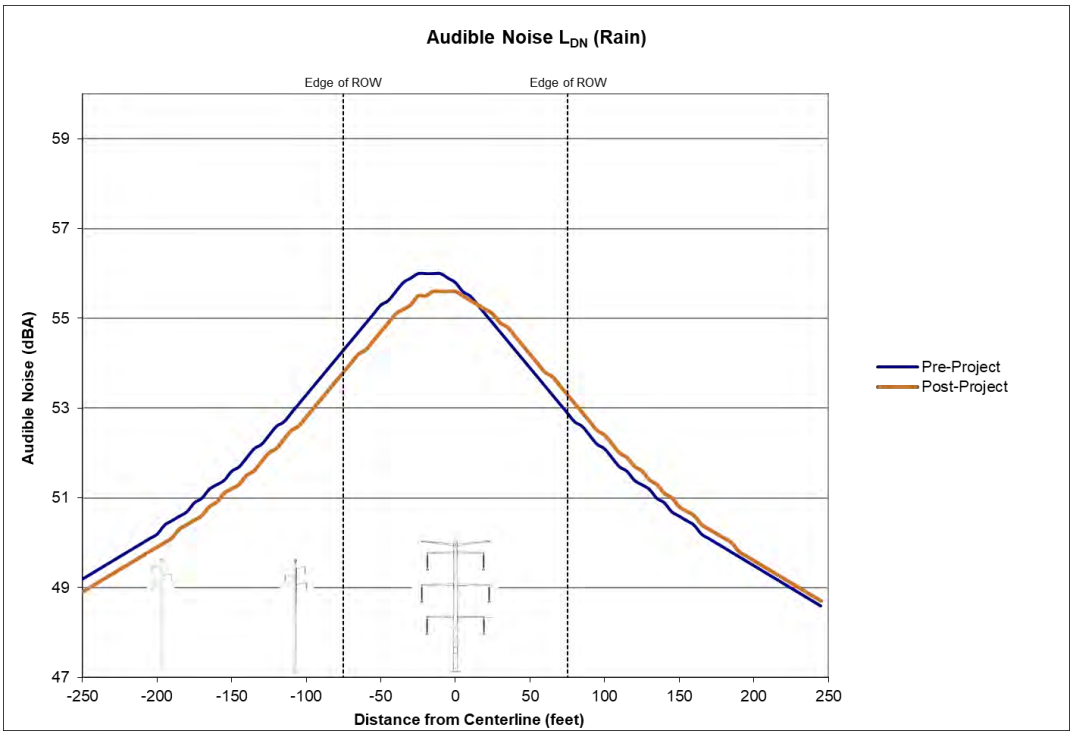

Figure 25: BOK-LYC (0972-2 to 0972-4) Audible Noise – Two Single Circuit Parallel 115 kV (South Dakota)

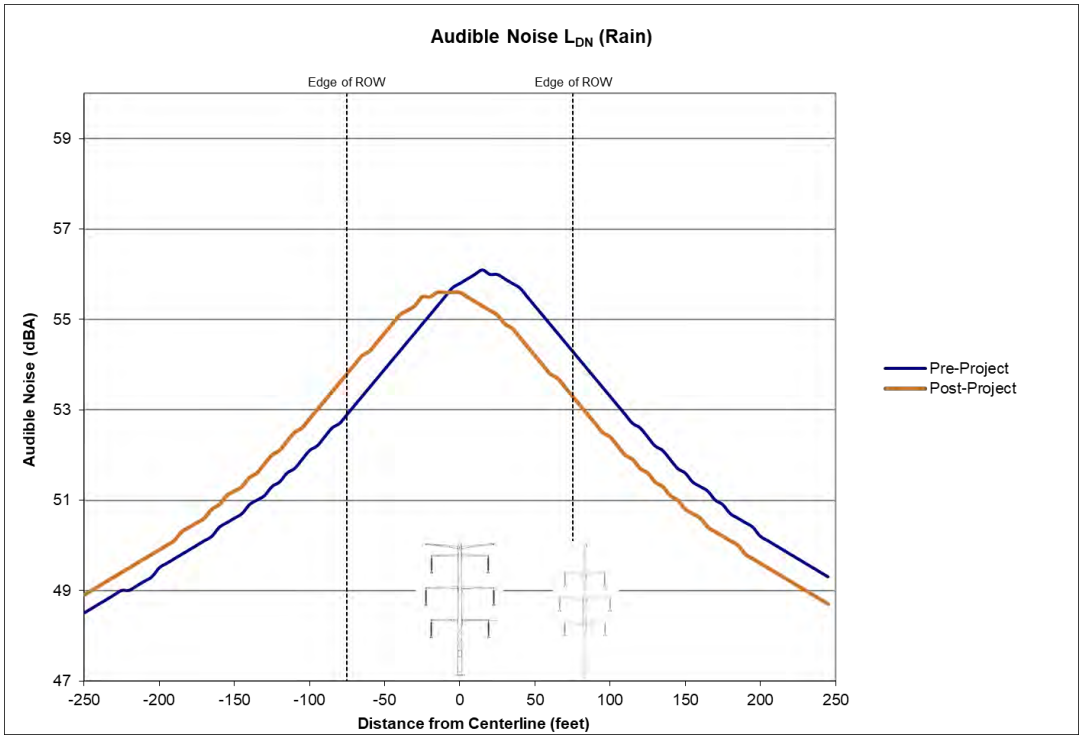

Figure 26: BOK-LYC (0972-4 to 0972-15) Audible Noise – Double Circuit Parallel 115 kV (South Dakota)

4.0 CONCLUSION

Xcel Energy ask POWER Engineers, Inc. to investigate electric fields, magnetic fields and audible noise for their 345 kV double circuit transmission lines from Brookings County Substation to Lyon County Substation and from Hampton Substation to Helena Substation. The purpose of this study was to determine the maximum amount of EMF and audible noise the transmission lines produce within and at the edge of the given ROW of the 345 kV double circuit transmission line.

The electric field and magnetic field results were presented without any reference limit or values. However, the audible noise results for South Dakota were compared against Environmental Protection Agency (EPA) recommended levels for comparison purposes only. The audible noise for Minnesota were compared against Minnesota Pollution Control Agency (MPCA limits, as provided in Table 3 of the Methodology section. These limits are zone dependent with Residential nighttime limit at 50 dBA being the most stringent. The majority of these two routes are stand-alone double circuit structures with the closest resident 87 feet away from ROW centerline on the side of the new circuit. The maximum audible noise results at 87 feet from centerline on the side of the new circuit is 49.8 dBA.

APPENDIX A – STRUCTURE DATA

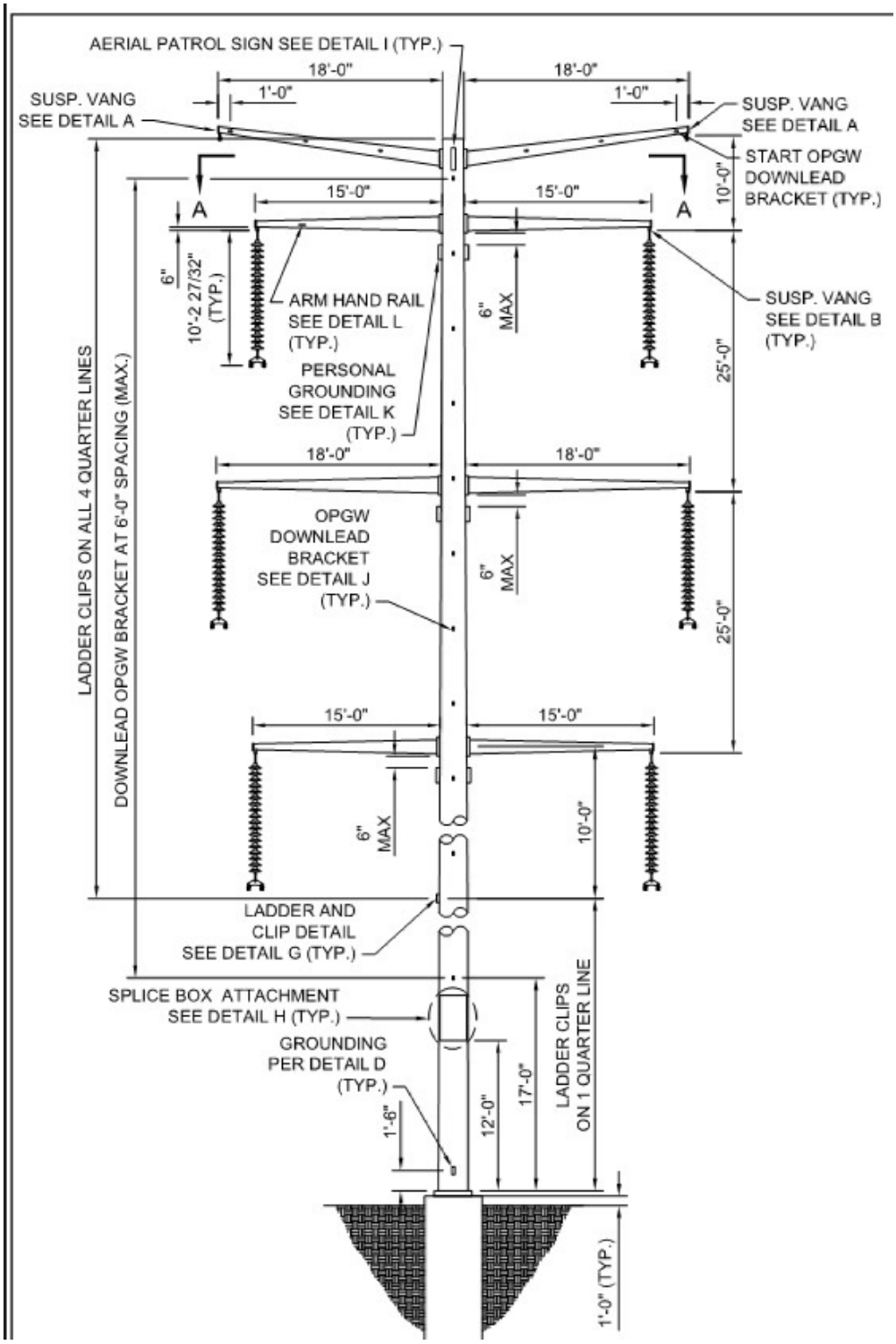

Figure 27: BOK-LYC and HMP-HNA Double Circuit Structure

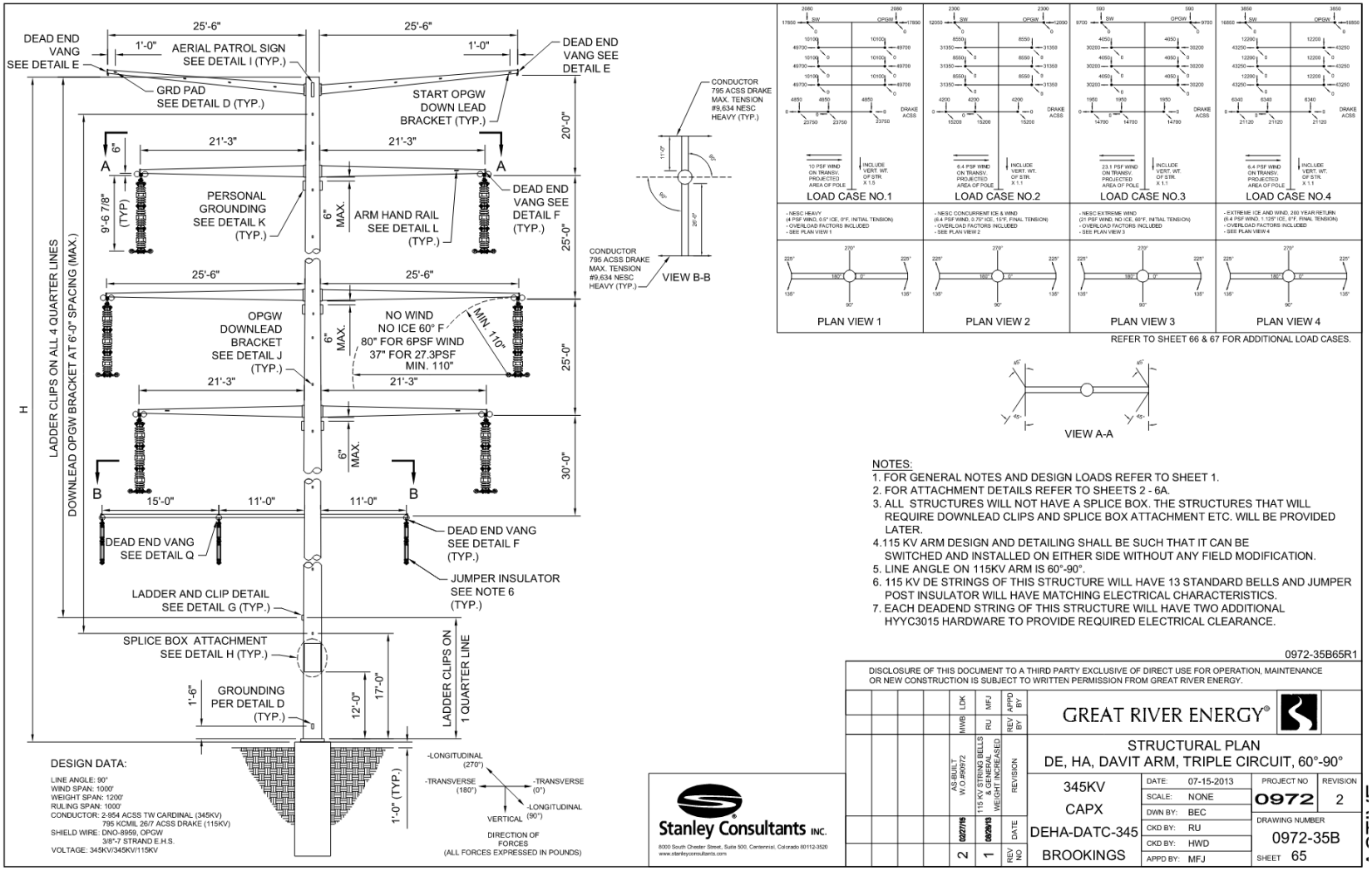

Figure 28: Double Circuit 345 kV Structure with Underbuild (BOK LYC: 0972-281 to 0972-295) & (HMP-HNA 0960-107 to 0960-109)

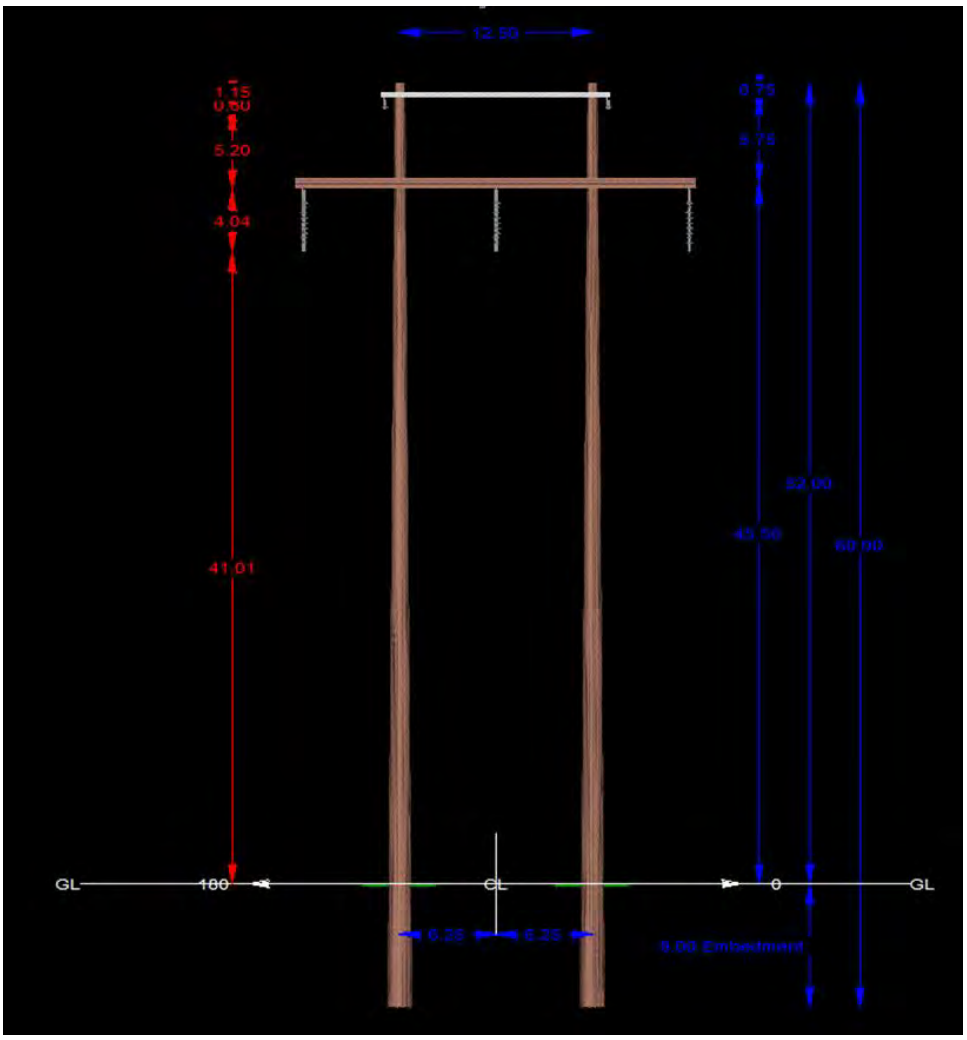

Figure 29: East River 115 kV H-Frame Structure (BOK LYC: 0972-281 to 0972-295)

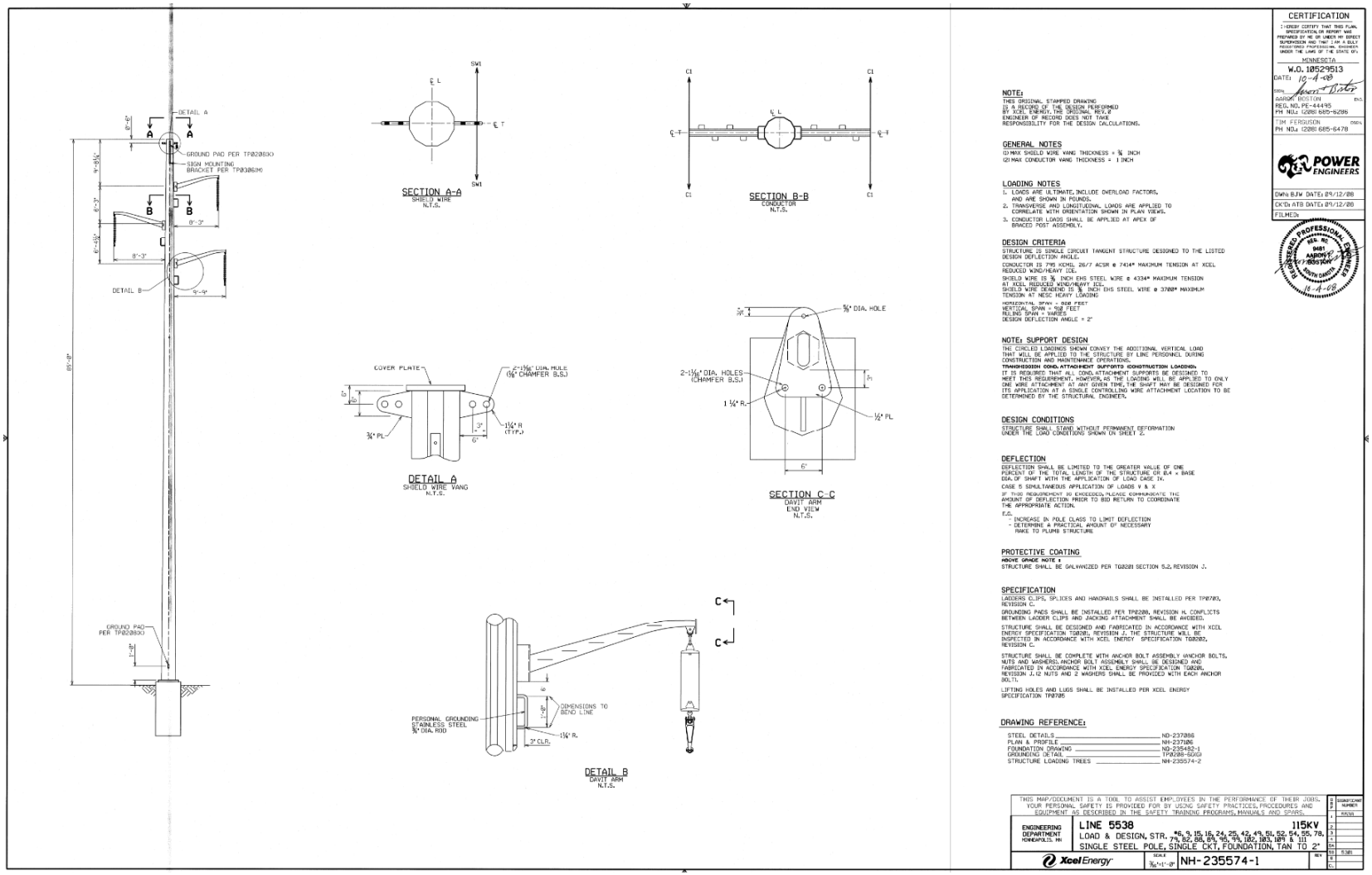

Figure 30: Circuit 5538 Single Circuit 115 kV Structure (BOK LYC: 0972-2 to 0972-4)

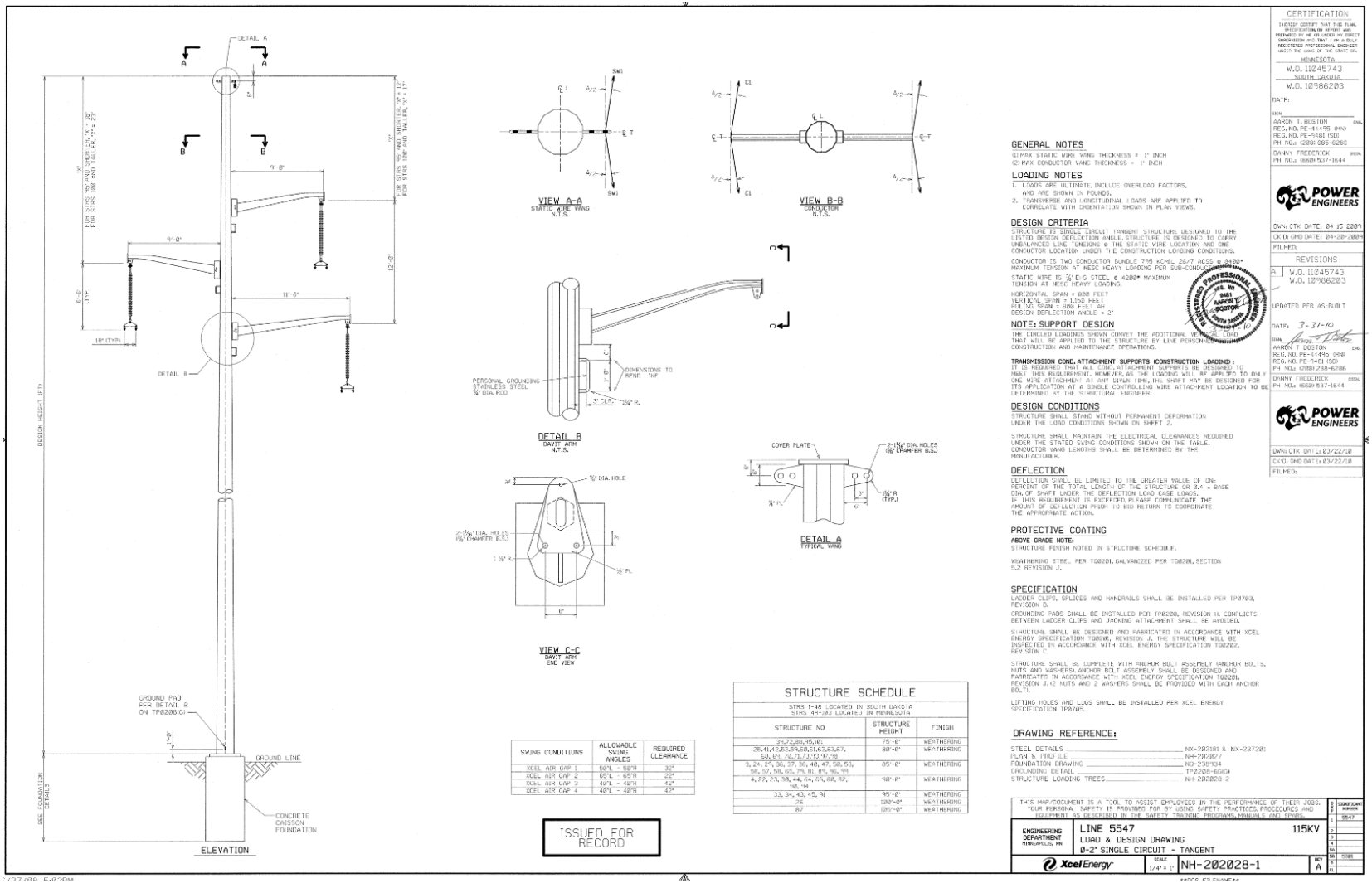

Figure 31: Circuit 5547 Single Circuit 115 kV Structure (BOK LYC: 0972-2 to 0972-4)

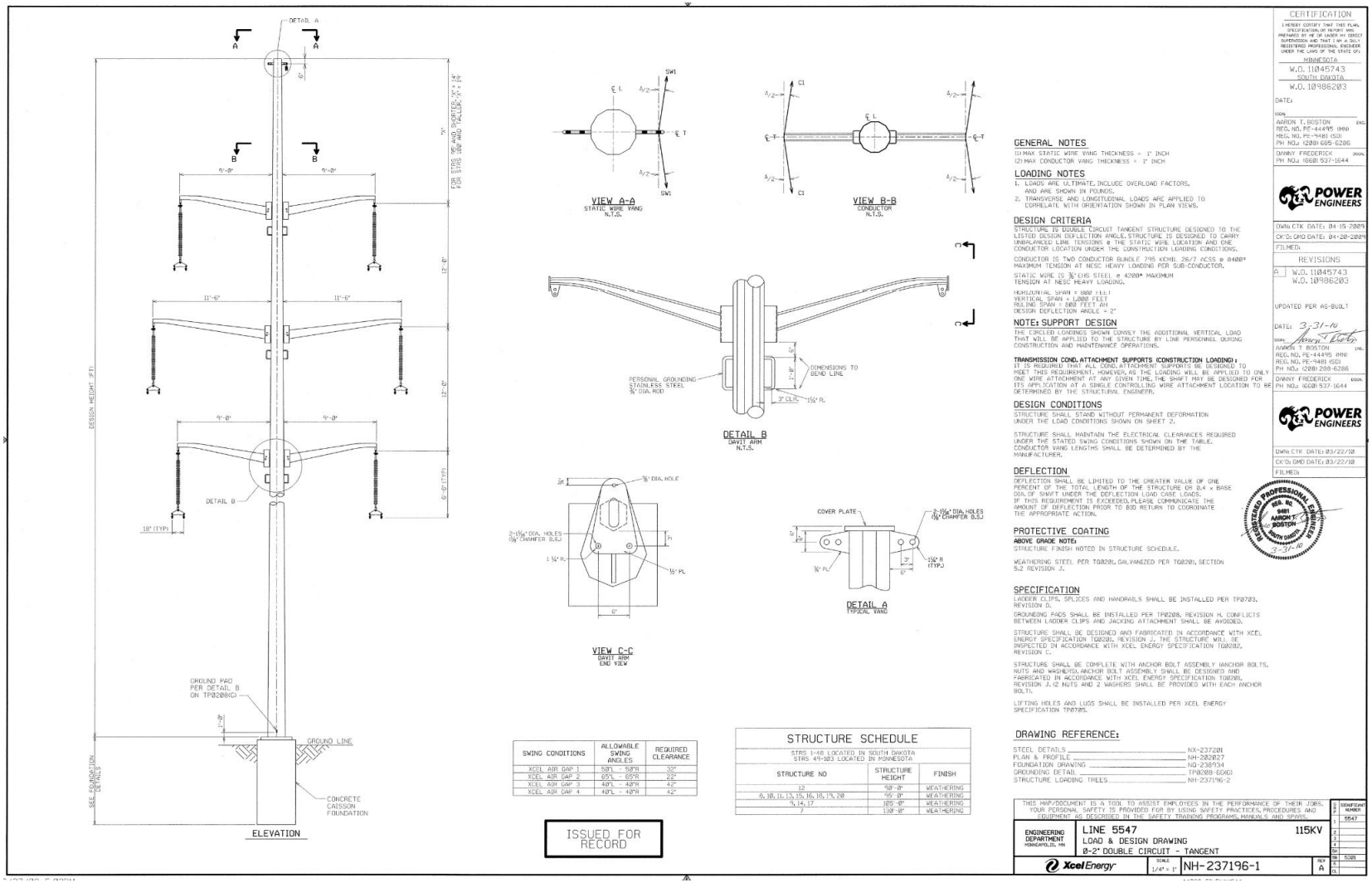

Figure 32: Circuit 5547 and East River Double Circuit 115 kV Structure (BOK LYC: 0972-4 to 0972-15)

APPENDIX B – TABULATED RESULTS

B.1 Electric Field

B.1.1 Brookings County to Lyon County (BOK-LYC)

TABLE 7: BOK-LYC CALCULATED ELECTRIC FIELD MAGNITUDES – MINNESOTA

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV Double Circuit Monopole	2 x BOK-LYC	5.2 kV/m	0.4 kV/m	1.5 kV/m	4.9 kV/m	2.8 kV/m	4.8 kV/m	1.6 kV/m	0.4 kV/m
345 kV / 345 kV / 115 kV Double Circuit Monopole with 115 kV Underbuild	2 x BOK-LYC & East River Electric 115 kV	4.4 kV/m	0.4 kV/m	0.8 kV/m	3.8 kV/m	1.8 kV/m	4.3 kV/m	1.9 kV/m	0.4 kV/m
345 kV / 345 kV Double Circuit Monopole & 115 kV H-Frame	2 x BOK-LYC & East River Electric 115 kV	5.2 kV/m	0.8 kV/m	1.5 kV/m	4.6 kV/m	2.8 kV/m	4.8 kV/m	1.6 kV/m	0.4 kV/m

TABLE 8: BOK-LYC CALCULATED ELECTRIC FIELD MAGNITUDES – SOUTH DAKOTA

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV Double Circuit Monopole	2 x BOK-LYC	5.2 kV/m	0.4 kV/m	1.5 kV/m	4.9 kV/m	2.8 kV/m	4.8 kV/m	1.6 kV/m	0.4 kV/m
345 kV / 345 kV Double Circuit Monopole, 115 kV Single Circuit Steel Pole & 115 kV Single Circuit Steel Pole	2 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2	8.5 kV/m	0.7 kV/m	1.8 kV/m	6.4 kV/m	8.5 kV/m	6.4 kV/m	1.7 kV/m	0.3 kV/m
345 kV / 345 kV Double Circuit Monopole & 115 kV / 115 kV Double Circuit Monopole	2 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe	5.4 kV/m	0.3 kV/m	2.2 kV/m	5.4 kV/m	2.5 kV/m	5.0 kV/m	1.7 kV/m	1.5 kV/m

B.1.2 Hampden to Helena (HMP-HNA)

TABLE 9: HMP-HNA CALCULATED ELECTRIC FIELD MAGNITUDES – MINNESOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV Double Circuit Monopole	2 x HMP-HNA	5.2kV/m	0.4 kV/m	1.5 kV/m	4.9 kV/m	2.8 kV/m	5 kV/m	1.6 kV/m	0.41 kV/m
345 kV / 345 kV / 69 kV Double Circuit Monopole with 69 kV Underbuild	2 x HMP-HNA & Great River Energy 69 kV	4.6 kV/m	0.4 kV/m	1.0 kV/m	3.9 kV/m	1.7 kV/m	4.6 kV/m	2.0 kV/m	0.4 kV/m

B.2 Magnetic Field

B.2.1 Brookings County to Lyon County (BOK-LYC)

TABLE 10: BOK-LYC CALCULATED MAGNETIC FIELD MAGNITUDES – MINNESOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV single circuit Circuit Monopole (Pre-Project)	1 x BOK-LYC	266 mG	83 mG	149 mG	247 mG	222 mG	123 mG	74 mG	46 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Daily load)	2 x BOK-LYC	183 mG	47 mG	89 mG	160 mG	166 mG	80 mG	33 mG	16 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Max load)	2 x BOK-LYC	188 mG	39 mG	78 mG	152 mG	183 mG	106 mG	42 mG	17 mG
345 kV / 115 kV Single Circuit Monopole with 115 kV Underbuild (Pre-Project)	2 x BOK-LYC & East River Electric 115 kV	182 mG	63 mG	107 mG	141 mG	128 mG	178 mG	137 mG	81 mG
345 kV / 345 kV / 115 kV Double Circuit Monopole with 115 kV Underbuild (Post-Project Daily Loading)	2 x BOK-LYC & East River Electric 115 kV	137 mG	41 mG	75 mG	122 mG	133 mG	136 mG	92 mG	53 mG

TABLE 10: BOK-LYC CALCULATED MAGNETIC FIELD MAGNITUDES – MINNESOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV / 115 kV Double Circuit Monopole with 115 kV Underbuild (Post-Project Max Loading)	2 x BOK-LYC & East River Electric 115 kV	182 mG	52 mG	96 mG	164 mG	171 mG	138 mG	86 mG	50 mG
345 kV Single Circuit Monopole & 115 kV H-Frame (Pre-Project)	1 x BOK-LYC & East River Electric 115 kV	257 mG	161 mG	115 mG	241 mG	215 mG	122 mG	72 mG	46 mG
345 kV / 345 kV Double Circuit Monopole & 115 kV H-Frame (Post-Project Daily Loading)	2 x BOK-LYC & East River Electric 115 kV	177 mG	97 mG	70 mG	157 mG	151 mG	83 mG	33 mG	16 mG
345 kV / 345 kV Double Circuit Monopole & 115 kV H-Frame (Post-Project Max Loading)	2 x BOK-LYC & East River Electric 115 kV	182 mG	98 mG	62 mG	149 mG	178 mG	111 mG	44 mG	18 mG

TABLE 11: BOK-LYC CALCULATED MAGNETIC FIELD MAGNITUDES – SOUTH DAKOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV single circuit Circuit Monopole (Pre-Project)	1 x BOK-LYC	266 mG	83 mG	149 mG	247 mG	222 mG	123 mG	74 mG	46 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Daily Load)	2 x BOK-LYC	183 mG	47 mG	89 mG	160 mG	166 mG	80 mG	33 mG	16 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Max Load)	2 x BOK-LYC	188 mG	39 mG	78 mG	152 mG	183 mG	106 mG	42 mG	17 mG
345 kV Single Circuit Monopole,115 kV Single Circuit Steel Pole & 115 kV Single Circuit Steel Pole (Pre-Project)	1 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2	259 mG	42 mG	123 mG	234 mG	213 mG	133 mG	80 mG	48 mG
345 kV / 345 kV Double Circuit Monopole,115 kV Single Circuit Steel Pole & 115 kV Single Circuit Steel Pole (Post-Project Daily Load)	2 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2	200 mG	41 mG	103 mG	189 mG	174 mG	146 mG	97 mG	62 mG
345 kV / 345 kV Double Circuit Monopole,115 kV Single Circuit Steel Pole & 115 kV Single Circuit Steel Pole (Post-Project Max Load)	2 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2	217 mG	48 mG	117 mG	206 mG	197 mG	190 mG	127 mG	79 mG
345 kV Single Circuit Monopole & 115 kV / 115 kV Double Circuit Monopole (Pre-Project)	1 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe	291 mG	47 mG	78 mG	131 mG	232 mG	287 mG	244 mG	235 mG

TABLE 11: BOK-LYC CALCULATED MAGNETIC FIELD MAGNITUDES – SOUTH DAKOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV Double Circuit Monopole & 115 kV / 115 kV Double Circuit Monopole (Post-Project Daily Load)	2 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe	197 mG	8 mG	27 mG	75 mG	164 mG	193 mG	153 mG	178 mG
345 kV / 345 kV Double Circuit Monopole & 115 kV / 115 kV Double Circuit Monopole (Post-Project Max Load)	2 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe	193 mG	21 mG	47 mG	117 mG	179 mG	184 mG	141 mG	169 mG

B.2.2 Hampden to Helena (HMP-HNA)

TABLE 12: HMP-HNA CALCULATED MAGNETIC FIELD MAGNITUDES – MINNESOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV single circuit Circuit Monopole (Pre-Project)	1 xHMP-HNA	209 mG	68 mG	117 mG	199 mG	174 mG	101 mG	58 mG	38 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Daily Load)	2 x HMP-HNA	178 mG	48 mG	87 mG	162 mG	161 mG	84 mG	32 mG	16 mG
345 kV / 345 kV Double Circuit Monopole (Post Project Max Load)	2 x HMP-HNA	183 mG	40 mG	76 mG	156 mG	177 mG	110 mG	40 mG	17 mG
345 kV / 345 kV / 69 kV Double Circuit Monopole with 69 kV Underbuild (Pre-Project)	1 x HMP-HNA & Great River Energy 69 kV	176 mG	39 mG	60 mG	70 mG	99 mG	175 mG	123 mG	72 mG

TABLE 12: HMP-HNA CALCULATED MAGNETIC FIELD MAGNITUDES – MINNESOTA									
STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)						
			-75	-50	-25	0	25	50	75
345 kV / 345 kV / 69 kV Double Circuit Monopole with 69 kV Underbuild (Post-Project Daily Load)	2 x HMP-HNA & Great River Energy 69 kV	163 mG	35 mG	60 mG	89 mG	125 mG	162 mG	104 mG	58 mG
345 kV / 345 kV / 69 kV Double Circuit Monopole with 69 kV Underbuild (Post-Project Max Load)	2 x HMP-HNA & Great River Energy 69 kV	166 mG	47 mG	84 mG	137 mG	154 mG	162 mG	99 mG	55 mG

B.3 Audible Noise

B.3.1 Brookings County to Lyon County (BOK-LYC)

TABLE 13: BOK-LYC CALCULATED AUDIBLE NOISE MAGNITUDES – MINNESOTA (L50)

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)														
			-250	-200	-150	-100	-75	-50	-25	0	25	50	75	100	150	200	250
345 kV / 345 kV Double Circuit Monopole	1 x BOK-LYC (Pre-Project)	49.6 dBA	42.7 dBA	43.8 dBA	45.2 dBA	46.8 dBA	47.8 dBA	48.8 dBA	49.5 dBA	49.4 dBA	48.5 dBA	47.4 dBA	46.5 dBA	45.6 dBA	44.2 dBA	43 dBA	42.2 dBA
	2 x BOK-LYC (Post-Project)	52.7 dBA	45.7 dBA	46.8 dBA	48 dbA	49.7 dBA	50.6 dBA	51.7 dBA	52.5 dBA	52.6 dBA	52.1 dBA	51.1 dBA	50.1 dBA	49.3 dBA	47.7 dBA	46.5 dBA	45.6 dBA
345 kV / 345 kV / 115 kV Double Circuit Monopole with 115 kV Underbuild	1 x BOK-LYC & East River Electric 115 kV (Pre-Project)	49.9 dBA	42.6 dBA	43.5 dBA	44.7 dBA	46.0 DBA	46.8 dBA	47.8 dBA	48.7 dBA	49.6 dBA	49.9 dBA	49.5 dBA	48.6 dBA	47.7 dBA	46.0 dBA	44.6 dBA	43.6 dBA
	2 x BOK-LYC & East River Electric 115 kV (Post-Project)	52.3 dBA	45.6 dBA	46.6 dBA	47.9 dBA	49.4 dBA	50.3 dBA	51.2 dBA	51.9 dBA	52.2 dBA	52.1 dBA	51.5 dBA	50.7 dBA	49.8 dbA	48.2 dBA	46.9 dBA	46.0 dBA
345 kV / 345 kV Double Circuit Monopole & 115 kV H-Frame	1 x BOK-LYC & East River Electric 115 kV (Pre-Project)	40.7 dBA	42.8 dBA	43.9 dBA	45.3 dBA	47.0 dBA	48.0 dBA	49.0 dBA	49.7 dBA	49.5 dBA	48.6 dBA	47.6 dBA	46.6 dBA	45.7 dBA	44.3 dBA	43.1 dBA	42.3 dBA
	2 x BOK-LYC & East River Electric 115 kV (Post-Project)	52.8 dBA	45.8 dBA	46.8 dBA	48.1 dBA	49.7 dBA	50.7 dBA	51.8 dBA	52.6 dBA	52.8 dBA	52.2 dBA	51.2 dBA	50.2 dBA	49.3 dBA	47.8 dBA	46.5 dBA	45.6 dBA

TABLE 14: BOK-LYC CALCULATED AUDIBLE NOISE MAGNITUDES – SOUTH DAKOTA (L_{DN})

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)														
			-250	-200	-150	-100	-75	-50	-25	0	25	50	75	100	150	200	250
345 kV / 345 kV Double Circuit Monopole	1 x BOK-LYC (Pre-Project))	56.0 dBA	49.1 dBA	50.2 dBA	51.6 dBA	53.2 dBA	54.2 dBA	55.2 dBA	55.9 dBA	55.8 dBA	54.9 dBA	53.8 dBA	52.9 dBA	52.0 dBA	50.6 dBA	49.4 dBA	48.6 dBA
	2 x BOK-LYC (Post-Project)	59.1 dBA	52.1 dBA	53.2 dBA	54.4 dbA	56.1 dBA	57.0 dBA	58.1 dBA	58.9 dBA	59.0 dBA	58.5 dBA	57.5 dBA	56.5 dBA	55.6 dBA	54.1 dBA	52.9 dBA	52.0 dBA
345 kV / 345 kV Double Circuit Monopole, 115 kV Single Circuit Steel Pole & 115 kV Single Circuit Steel Pole	1 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2 (Pre-Project)	56.0 DBA	49.2 dBA	50.2 dBA	51.6 dBA	53.3 dBA	54.3 dBA	55.3 dBA	56.0 dBA	55.8 dBA	54.9 dBA	53.9 dBA	52.9 dBA	52.1 dBA	50.6 dBA	49.5 dBA	48.6 dBA
	2 x BOK-LYC, BOK-YNK-1, & BOK-YNK-2 (Post-Project)	55.6 dBA	48.9 dBA	49.9 dBA	51.2 dBA	52.8 dBA	53.8 dBA	54.7 dBA	55.5 dBA	55.6 dBA	55.1 dBA	54.2 dBA	53.3 dBA	52.4 dBA	50.8 dbA	49.6 dBA	48.7 dBA

TABLE 14: BOK-LYC CALCULATED AUDIBLE NOISE MAGNITUDES – SOUTH DAKOTA (L_{DN})

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)														
			-250	-200	-150	-100	-75	-50	-25	0	25	50	75	100	150	200	250
345 kV / 345 kV Double Circuit Monopole & 115 kV / 115 kV Double Circuit Monopole	1 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe (Pre-Project)	56.1 dBA	48.5 dBA	49.5 dBA	50.6 dBA	51.2 dBA	52.9 dBA	53.9 dBA	54.9 dBA	55.8 dBA	56.0 dBA	55.3 dBA	54.3 dBA	53.3 dBA	51.6 dBA	50.2 dBA	49.3 dBA
	2 x BOK-LYC, BOK-YNK-1, & East River Electric White-Ivanhoe (Post-Project)	58.7 dBA	51.8 dBA	52.8 dBA	54.1 dBA	55.8 dBA	56.7 dBA	57.8 dBA	58.6 dBA	58.7 dBA	58.1 dBA	57.2 dBA	56.2 dBA	55.3 dBA	53.7 dBA	52.5 dBA	51.6 dBA

B.3.2 Hampden to Helena (HMP-HNA)

TABLE 15: HMP-HNA CALCULATED AUDIBLE NOISE MAGNITUDES – MINNESOTA (L_{50})

STRUCTURE TYPES	CIRCUITS PRESENT	MAXIMUM WITHIN ROW	DISTANCE TO PROPOSED CENTERLINE (FEET)														
			-250	-200	-150	-100	-75	-50	-25	0	25	50	75	100	150	200	250
345 kV / 345 kV Double Circuit Monopole	1 x BOK-LYC (Pre-Project)	49.6 dBA	42.7 dBA	43.8 dBA	45.2 dBA	46.8 dBA	47.8 dBA	48.8 dBA	49.5 dBA	49.4 dBA	48.5 dBA	47.4 dBA	46.5 dBA	45.6 dBA	44.2 dBA	43 dBA	42.2 dBA
	2 x BOK-LYC (Post-Project)	52.7 dBA	45.7 dBA	46.8 dBA	48 dbA	49.7 dBA	50.6 dBA	51.7 dBA	52.5 dBA	52.6 dBA	52.1 dBA	51.1 dBA	50.1 dBA	49.3 dBA	47.7 dBA	46.5 dBA	45.6 dBA
345 kV / 345 kV / 69 kV Double Circuit Monopole with 69 kV Underbuild	1 x HMP-HNA & Great River Energy 69 kV (Pre-Project)	49.6 dBA	42.4 dBA	43.3 dBA	44.4 dBA	45.8 dBA	46.6 dBA	47.5 dBA	48.4 dBA	49.3 dBA	49.6 dBA	49.2 dBA	48.3 dBA	47.4 dBA	45.7 dBA	44.4 dBA	43.4 dBA
	2 x HMP-HNA & Great River Energy 69 kV (Post-Project)	51.6 dBA	45.0 dBA	46.0 dBA	47.2 dBA	48.7 dBA	49.5 dBA	50.4 dBA	51.1 dBA	51.6 dBA	51.6 dBA	51.0 dBA	50.2 dBA	49.3 dBA	47.7 dBA	46.4 dBA	45.5 dBA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
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In Reply Refer To: June 27, 2023
Project Code: 2023-0098413
Project Name: Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No

further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the range-wide northern long-eared bat D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/ Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter.

Please note: On November 30, 2022, the Service published a proposal final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. On January 26, 2023, the Service published a 60-day extension for the final reclassification rule in the Federal Register, moving the effective listing date from January 30, 2023, to March 31, 2023. This extension will provide stakeholders and the public time to preview interim guidance and consultation tools before the rule becomes effective. When available, the tools will be available on the Service's northern long-eared bat website (https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis). Once the final rule goes into effect on March 31, 2023, the 4(d) D-key will no longer be available (4(d) rules are not available for federally endangered species) and will be replaced with a new Range-wide NLEB D-key (range-wide d-key). For projects not completed by March 31, 2023, that were previously reviewed under the 4(d) d-key, there may be a need for reinitiation of consultation. For these ongoing projects previously reviewed under the 4(d) d-key that may result in incidental take of the northern long-eared bat, we recommend you review your project using the new range-wide d-key once available. If your project does not comply with the range-wide d-key, it may be eligible for use of the Interim (formal) Consultation framework (framework). The framework is intended to facilitate the transition from the 4(d) rule to typical Section 7 consultation procedures for federally endangered species and will be available only until spring 2024. Again, when available, these tools (new range-wide d-key and framework) will be available on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Assistant Regional Director-Ecological Services
5600 American Blvd. West
Bloomington, MN 55437-1458
Phone: (612) 713-5350 Fax: (612) 713-5292

In Reply Refer To: June 27, 2023
Project code: 2023-0098413
Project Name: Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit'

Dear Bruce Galer:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on June 27, 2023, for 'Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit' (here forward, Project). This project has been assigned Project Code 2023-0098413 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

PROJECT SUMMARY

Project Code: 2023-0098413

Project Name: Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit

Project Type: Transmission Line - Maintenance/Modification - Above Ground

Project Description: Installation of 345kV second circuit onto a transmission line built second circuit capable. Outline is a one-mile buffer around the entire project area. One new transmission tower to be installed, otherwise using all existing towers. Workspace only needed splices and turns are necessary, otherwise being installed via helicopter. Transmission line installation planned for summer of 2024.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.50746975,-96.41392410992141,14z

Counties: Minnesota and South Dakota

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Dakota Skipper *Hesperia dacotae*	Final

For information on why this critical habitat appears for your project, even though Dakota Skipper is not on the list of potentially affected species at this location, contact the local field office.
https://ecos.fws.gov/ecp/species/1028#crithab

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
NORTHERN TALLGRASS PRAIRIE NATIONAL WILDLIFE REFUGE https://www.fws.gov/refuges/profiles/index.cfm?id=32641	2,517.261

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31

NAME	BREEDING SEASON
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Franklin's Gull *Leucophaeus pipixcan* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

NAME	BREEDING SEASON
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

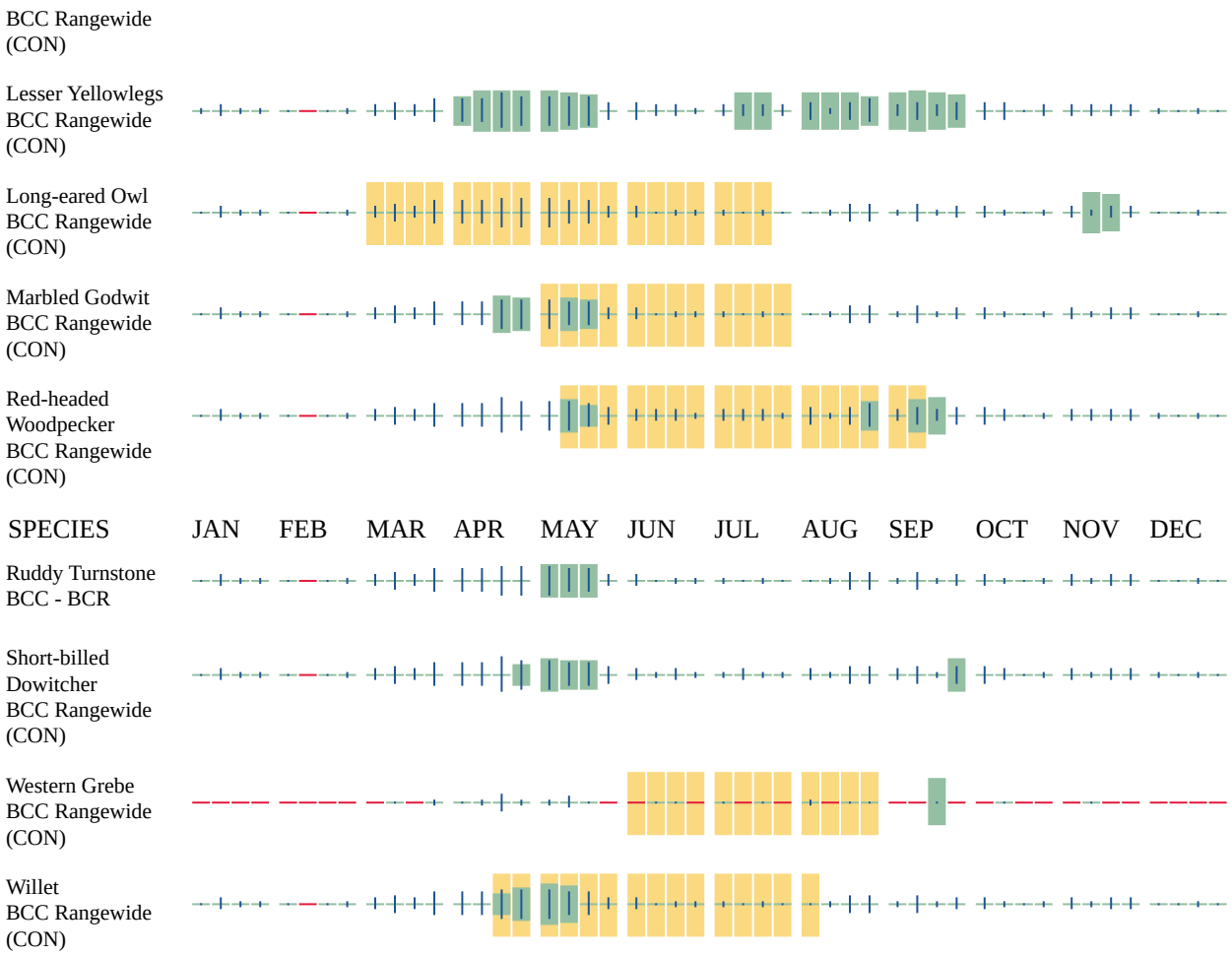
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Bruce Galer
Address: One Carlson Parkway
Address Line 2: Suite 100
City: Plymouth
State: MN
Zip: 55447
Email bruce.galer@stantec.com
Phone: 7632526809

days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Red Knot *Calidris canutus rufa* Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

Critical Habitats:

- Dakota Skipper Hesperia dacotae Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Assistant Regional Director-Ecological Services and reference Project Code 2023-0098413 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit

2. Description

The following description was provided for the project 'Xcel Energy - Brookings County to Lyon County 345kV Transmission Line Second Circuit':

> Installation of 345kV second circuit onto a transmission line built second circuit capable. Outline is a one-mile buffer around the entire project area. One new transmission tower to be installed, otherwise using all existing towers. Workspace only needed splices and turns are necessary, otherwise being installed via helicopter. Transmission line installation planned for summer of 2024.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.50746975,-96.41392410992141,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Bruce Galer
Address: One Carlson Parkway
Address Line 2: Suite 100
City: Plymouth
State: MN
Zip: 55447
Email bruce.galer@stantec.com
Phone: 7632526809

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793 Fax: (952) 646-2873

In Reply Refer To: June 27, 2023
Project Code: 2023-0098437
Project Name: Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No**

Effect determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the range-wide northern long-eared bat D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/ Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter.

Please note: On November 30, 2022, the Service published a proposal final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. On January 26, 2023, the Service published a 60-day extension for the final reclassification rule in the Federal Register, moving the effective listing date from January 30, 2023, to March 31, 2023. This extension will provide stakeholders and the public time to preview interim guidance and consultation tools before the rule becomes effective. When available, the tools will be available on the Service's northern long-eared bat website (https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis). Once the final rule goes into effect on March 31, 2023, the 4(d) D-key will no longer be available (4(d) rules are not available for federally endangered species) and will be replaced with a new Range-wide NLEB D-key (range-wide d-key). For projects not completed by March 31, 2023, that were previously reviewed under the 4(d) d-key, there may be a need for reinitiation of consultation. For these ongoing projects previously reviewed under the 4(d) d-key that may result in incidental take of the northern long-eared bat, we recommend you review your project using the new range-wide d-key once available. If your project does not comply with the range-wide d-key, it may be eligible for use of the Interim (formal) Consultation framework (framework). The framework is intended to facilitate the transition from the 4(d) rule to typical Section 7 consultation procedures for federally endangered species and will be available only until spring 2024. Again, when available, these tools (new range-wide d-key and framework) will be available on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the

mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2023-0098437
Project Name: Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line
Project Type: Transmission Line - Maintenance/Modification - Above Ground
Project Description: Installation of 345kV second circuit onto a transmission line build second circuit capable. Outline is a one-mile buffer around the entire project area. Eight new transmission towers to be installed near substations, otherwise using all existing towers. Workspace only needed for slices and turns are necessary, otherwise being installed via helicopter. Transmission line installation planned for summer of 2025.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.5999685,-93.2763801427347,14z

Counties: Dakota , Le Sueur , and Scott counties, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

CLAMS

NAME	STATUS
Higgins Eye (pearlymussel) *Lampsilis higginsii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5428	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Rusty Patched Bumble Bee *Bombus affinis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9383 General project design guidelines: https://ipac.ecosphere.fws.gov/project/DARTGX3HWBGC5JLPVHAV2WWDNA/documents/generated/5967.pdf	Endangered

FLOWERING PLANTS

NAME	STATUS
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
DAKOTA COUNTY WATERFOWL PRODUCTION AREA https://www.fws.gov/refuges/profiles/index.cfm?id=32591	76.661

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

NAME	BREEDING SEASON
Black Tern *Chlidonias niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 21 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Henslow's Sparrow *Ammodramus henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

NAME	BREEDING SEASON
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

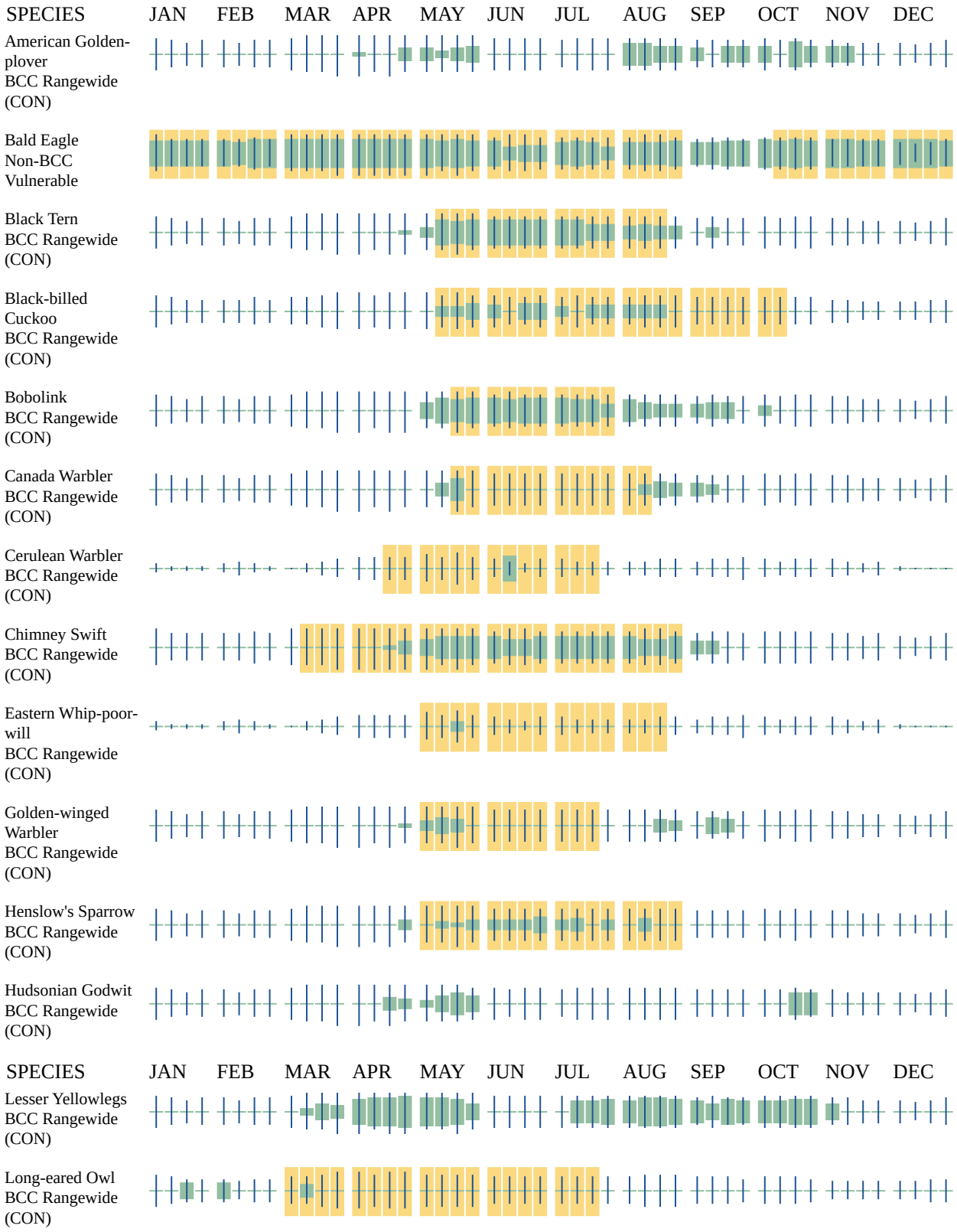
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data


SPECIES
JAN
FEB
MAR
APR
MAY
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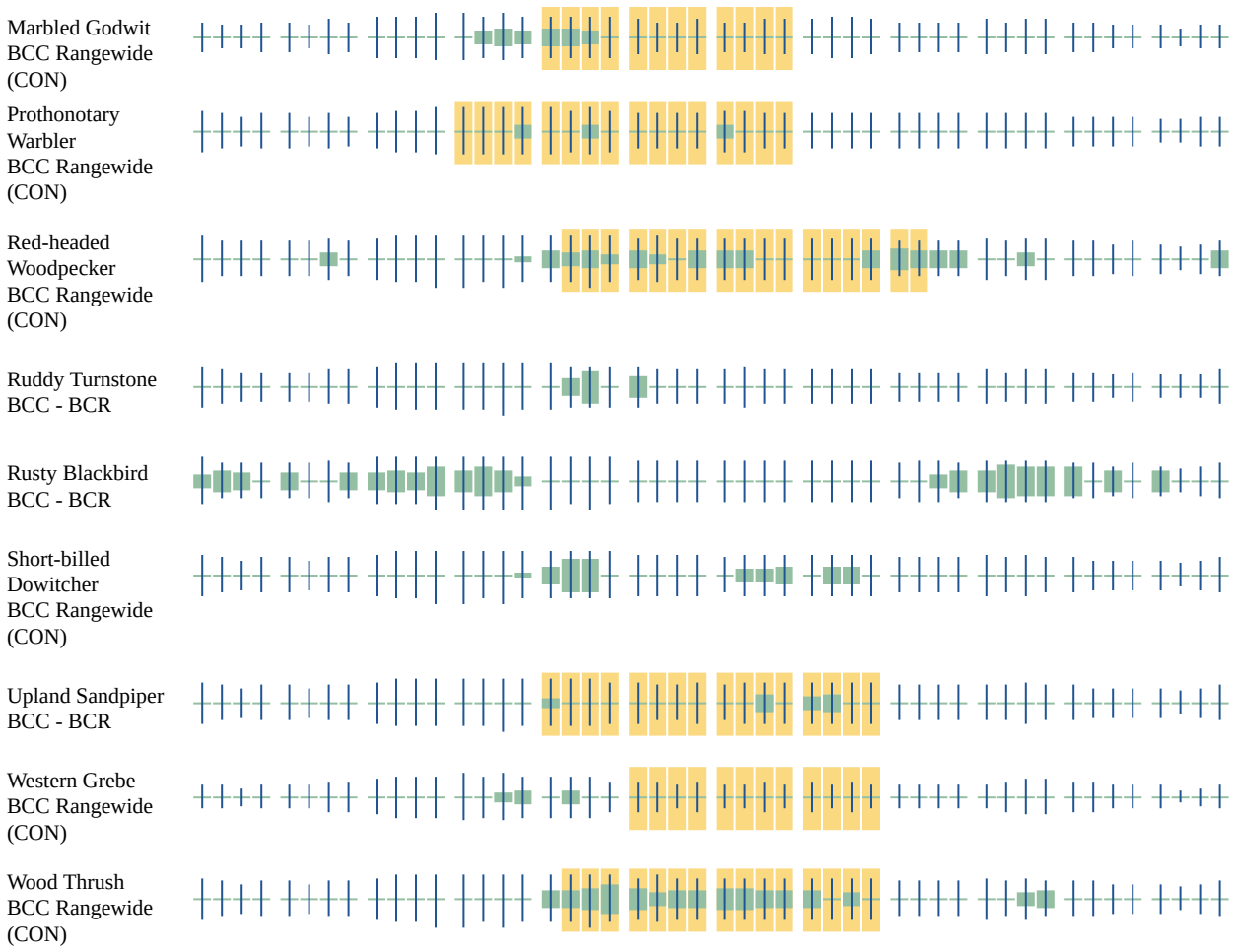
AUG
SEP
OCT
NOV
DEC
American Golden-plover BCC Rangewide (CON)
Bald Eagle Non-BCC Vulnerable
Black Tern BCC Rangewide (CON)
Black-billed Cuckoo BCC Rangewide (CON)
Bobolink BCC Rangewide (CON)
Canada Warbler BCC Rangewide (CON)
Cerulean Warbler BCC Rangewide (CON)
Chimney Swift BCC Rangewide (CON)
Eastern Whip-poor-will BCC Rangewide (CON)
Golden-winged Warbler BCC Rangewide (CON)
Henslow's Sparrow BCC Rangewide (CON)
Hudsonian Godwit BCC Rangewide (CON)
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Lesser Yellowlegs BCC Rangewide (CON)
Long-eared Owl BCC Rangewide (CON)



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Bruce Galer
Address: One Carlson Parkway
Address Line 2: Suite 100
City: Plymouth
State: MN
Zip: 55447
Email bruce.galer@stantec.com
Phone: 7632526809

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793 Fax: (952) 646-2873

In Reply Refer To: June 27, 2023
Project code: 2023-0098437
Project Name: Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line'

Dear Bruce Galer:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on June 27, 2023, for 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line' (here forward, Project). This project has been assigned Project Code 2023-0098437 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Higgins Eye (pearlymussel) *Lampsilis higginsii* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Prairie Bush-clover *Lespedeza leptostachya* Threatened
- Rusty Patched Bumble Bee *Bombus affinis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Minnesota-Wisconsin Ecological Services Field Office and reference Project Code 2023-0098437 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line

2. Description

The following description was provided for the project 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line':

> Installation of 345kV second circuit onto a transmission line build second circuit capable. Outline is a one-mile buffer around the entire project area. Eight new transmission towers to be installed near substations, otherwise using all existing towers. Workspace only needed for slices and turns are necessary, otherwise being installed via helicopter. Transmission line installation planned for summer of 2025.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.5999685,-93.2763801427347,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Bruce Galer
Address: One Carlson Parkway
Address Line 2: Suite 100
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State: MN
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793 Fax: (952) 646-2873

In Reply Refer To: June 27, 2023
Project code: 2023-0098437
Project Name: Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line

Subject: Consistency letter for 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line' for specified threatened and endangered species that may occur in your proposed project location consistent with the Minnesota-Wisconsin Endangered Species Determination Key (Minnesota-Wisconsin DKey).

Dear Bruce Galer:

The U.S. Fish and Wildlife Service (Service) received on **June 27, 2023** your effect determination(s) for the 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line' (Action) using the Minnesota-Wisconsin DKey within the Information for Planning and Consultation (IPaC) system. You have submitted this key to satisfy requirements under Section 7(a)(2). The Service developed this system in accordance of with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 et seq.).

Based on your answers and the assistance of the Service's Minnesota-Wisconsin DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Higgins Eye (pearlymussel) (*Lampsilis higginsii*)	Endangered	No effect
Monarch Butterfly (*Danaus plexippus*)	Candidate	No effect
Prairie Bush-clover (*Lespedeza leptostachya*)	Threatened	No effect
Rusty Patched Bumble Bee (*Bombus affinis*)	Endangered	No effect
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	No effect
Whooping Crane (*Grus americana*)	Experimental Population, Non-Essential	No effect

Determination Information

Thank you for informing the Service of your "No Effect" determination(s). No further coordination is necessary for the species you determined will not be affected by the Action.

Additional Information

Sufficient project details: Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

Future project changes: The Service recommends that you contact the Minnesota-Wisconsin Ecological Services Field Office or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. Please include the Federal action agency in additional correspondence regarding this project.

Species-specific information

Freshwater Mussels: Freshwater mussels are one of the most critically imperiled groups of organisms in the world. In North America, 65% of the remaining 300 species are vulnerable to extinction (Haag and Williams 2014). Implementing measures to conserve and restore freshwater mussel populations directly improves water quality in lakes, rivers, and streams throughout Minnesota and Wisconsin. An adult freshwater mussel filters anywhere from 1 to 38 gallons of water per day (Baker and Levinton 2003, Barnhart pers. comm. 2019). A 2015 survey found that in some areas, mussels can reduce the bacterial populations by more than 85% (Othman et al. 2015 in Vaughn 2017). Mussels are also considered to be ecosystem engineers by stabilizing substrate and providing habitat for other aquatic organisms (Vaughn 2017). In addition to ecosystem services, mussels play an important role in the food web, contributing critical nutrients to both terrestrial and aquatic habitats, including those that support sport fish (Vaughn 2017). Taking proactive measures to conserve and restore freshwater mussels will improve water quality, which has the potential to positively impact human health and recreation in the States of Minnesota and Wisconsin.

You have indicated that your Action will have no effect (NE) on Federally listed mussel species. However, state-listed mussels may occur in your Action area. Contact the Minnesota or Wisconsin Department of Natural Resources to determine effects to state-listed mussels.

Listed Plants: You have indicated that your Action has no effect (NE) on a threatened or endangered plant species, without a Federal nexus of any kind (i.e., the project is not on Federal land; no Federal funding, authorization, or permitting required; no Federal agency involvement

in planning or implementation). Although your Endangered Species Act requirements are met, we recommend you contact the Minnesota or Wisconsin Department of Natural Resources regarding compliance with state law. **You may need a state permit if your Action will harm state listed plants. We encourage landowners to maintain habitat for listed plant species and avoid disturbing listed plants to the extent possible.**

Bald and Golden Eagles: Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the "taking" of bald and golden eagles and defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Eagle Act's implementing regulations define disturb as "… to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

You indicate that your project **is** near a bald eagle nest. **If the Action may affect bald or golden eagles, additional coordination with the Service under the Eagle Act may be required.** For more information on eagles and conducting activities in the vicinity of an eagle nest, please visit our regional eagle website or contact Margaret at Margaret_Rheude@fws.gov. In addition, the Service developed the National Bald Eagle Management Guidelines (May 2007) to assist landowners in avoiding the disturbance of bald eagles.

In general, the guidelines recommend that disturbance of nesting eagles be avoided by (1) Keeping a distance between the activity and the nest (distance buffers), (2) Maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) Avoiding certain activities during the breeding season.

By adhering to the guidelines, landowners and project proponents should be able to avoid eagle disturbance most of the time. If avoiding disturbance is not possible, the project proponent may choose to apply for a take permit. A permit is not required to conduct any particular activity but is necessary to avoid potential liability for take caused by the activity.

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Northern Long-eared Bat *Myotis septentrionalis* Endangered

Coordination with the Service is not complete if additional coordination is advised above for any species.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line

2. Description

The following description was provided for the project 'Xcel Energy - Helena to Hampton 345 kV 2nd Circuit Transmission Line':

> Installation of 345kV second circuit onto a transmission line build second circuit capable. Outline is a one-mile buffer around the entire project area. Eight new transmission towers to be installed near substations, otherwise using all existing towers. Workspace only needed for slices and turns are necessary, otherwise being installed via helicopter. Transmission line installation planned for summer of 2025.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.5999685,-93.2763801427347,14z

QUALIFICATION INTERVIEW

1. This determination key is intended to assist the user in evaluating the effects of their actions on Federally listed species in Minnesota and Wisconsin. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Additionally, this key DOES NOT cover wind development, purposeful take (e.g., for research or surveys), communication towers that have guy wires or are over 450 feet in height, aerial or other large-scale application of any chemical (such as insecticide or herbicide), and approval of long-term permits or plans (e.g., FERC licenses, HCP's).

   Click **YES** to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

   Yes
2. Is the action being funded, authorized, or carried out by a Federal agency?

   No
3. Are you the Federal agency or designated non-federal representative?

   No
4. Does the action involve the installation or operation of wind turbines?

   No
5. Does the action involve purposeful take of a listed animal?

   No
6. Does the action involve a new communications tower?

   No
7. Does the activity involve aerial or other large-scale application of ANY chemical, including pesticides (insecticide, herbicide, fungicide, rodenticide, etc)?

   No
8. Does the action occur near a bald eagle nest?

   Note: Contact the Minnesota or Wisconsin Department of Natural Resources for an up-to-date list of known bald eagle nests.

   Yes
9. Will your action permanently affect local hydrology?

   No
10. Will your action temporarily affect local hydrology?

    No

11. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new stormwater outfall discharge, dams, other in-stream work, etc.)?

    No

12. Does your project have the potential to impact the riparian zone or indirectly impact a stream/river (e.g., cut and fill; horizontal directional drilling; construction; vegetation removal; pesticide or fertilizer application; discharge; runoff of sediment or pollutants; increase in erosion, etc.)?

    Note: Consider all potential effects of the action, including those that may happen later in time and outside and downstream of the immediate area involved in the action.

    Endangered Species Act regulation defines "effects of the action" to include all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (50 CFR 402.02).

    No

13. Will your action disturb the ground or existing vegetation?

    Note: This includes any off-road vehicle access, soil compaction (enough to collapse a rodent burrow), digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application (herbicide, fungicide), vegetation management (including removal or maintenance using equipment or prescribed fire), cultivation, development, etc.

    Yes

14. Will your action include spraying insecticides?

    No

15. Does your action area occur entirely within an already developed area?

    Note: Already developed areas are already paved, covered by existing structures, manicured lawns, industrial sites, or cultivated cropland, AND do not contain trees that could be roosting habitat. Be aware that listed species may occur in areas with natural, or semi-natural, vegetation immediately adjacent to existing utilities (e.g. roadways, railways) or within utility rights-of-way such as overhead transmission line corridors, and can utilize suitable trees, bridges, or culverts for roosting even in urban dominated landscapes (so these are not considered "already developed areas" for the purposes of this question). If unsure, select NO..

    No

16. Does the action include – or is it reasonably certain to result in – construction of one or more new roads or rail lines; the addition of travel lanes that are likely to increase vehicle traffic on one or more existing roads; or other structures or activities that will increase vehicle traffic?

    No

17. Does the action include – or is it reasonably certain to cause – the use of commercial/ managed bees (e.g., the use of honeybees or managed bumble bees to pollinate crops).

    No

18. Is there habitat for nesting, foraging, and/or overwintering for the rusty patched bumble bee in the action area?

    Note: Please refer to the ESA Section 7(a)(2) Voluntary Implementation Guidance for Rusty Patched Bumble Bee at: https://www.fws.gov/media/esa-section-7a2-voluntary-implementation-guidance-rusty-patched-bumble-bee.

    No

19. Does prairie bush-clover occur in the action area?

    No

20. [Hidden Semantic] Does the action area intersect the monarch butterfly species list area?

    Automatically answered
    Yes

21. Under the ESA, monarchs remain warranted but precluded by listing actions of higher priority. The monarch is a candidate for listing at this time. The Endangered Species Act does not establish protections or consultation requirements for candidate species. Some Federal and State agencies may have policy requirements to consider candidate species in planning. We encourage implementing measures that will remove or reduce threats to these species and possibly make listing unnecessary.

    If your project will have no effect on monarch butterflies (for example, if your project won't affect their habitat or individuals), then you can make a "no effect" determination for this project.

    Are you making a "no effect" determination for monarch?

    Yes

22. [Hidden semantic] Does the action intersect the Tricolored bat species list area?

    Automatically answered
    Yes

23. The tricolored bat was proposed for listing as endangered on September 13, 2022. During winter, tricolored bats hibernate in caves, abandoned mines, and abandoned tunnels ranging from small to large in size. During spring, summer and fall months, they roost primarily among leaf clusters of live or recently dead deciduous/hardwood trees.

    What effect determination do you want to make for the tricolored bat (Only make a "may affect" determination if you think the project is likely to jeopardize the continued existence of the species)?

    1. "No effect"

IPAC USER CONTACT INFORMATION

Agency: Private Entity
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Phone: 7632526809

DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

September 22, 2023
Correspondence # MCE 2023-00483

Kristina DeName
Stantec

Natural Heritage Review of the proposed 345 kv Second Circuit (Brookings-Lyon, Helena to Hampton), Dakota, Lincoln, Lyon, and Scott Counties

Dear Kristina DeName,

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

Ecologically Significant Areas

- The Minnesota Biological Survey (MBS) has identified five Sites of *Moderate* Biodiversity Significance in the vicinity of the proposed project. 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 *Moderate* contain occurrences of rare species and/or moderately disturbed native plant communities, and/or landscapes that have a strong potential for recovery. The Sites and any native plant communities are listed below.
    - T113N R43W Section 35 – This Site is across the road from the proposed project. Direct effects on the Site are not anticipated.
    - T113N R43W Section 31 – The proposed project is adjacent to the Site, which contains a mapped polygon of UPs13d – Dry Hill Prairie (Southern). This native plant community has a state conservation rank of S2: Imperiled.
    - T112N R45W Section 7 – This Site is across the road from the proposed project. Direct effects on the Site are not anticipated.

- T112N R46W Section 8 – The proposed project is approximately 50 m east of the Site, which contains a mapped polygon of UPs13b – Dry Sand – Gravel Prairie (Southern). This native plant community has a state conservation rank of S2: Imperiled.
- T112N R45W Section 2 – The proposed project is within the MBS Site but, from aerial imagery, it appears the Site has been hayed and possibly cropped over multiple years since designation. We can not determine the condition within this part of the Site but if it still contains native vegetation it may be of conservation significance.

There are four state-listed species of special concern that are reliant on native prairie that may be found in the native prairie communities listed above. These are slender milk-vetch (*Astragalus flexuosus* var. *flexuosus*), western white prairie-clover (*Dalea candida* var. *oligophylla*), the butterfly regal fritillary (*Argynnis idalia*), and Great Plains toad (*Anaxyrus cognatus*).

We encourage you to consider project alternatives that would avoid or minimize disturbance to these ecologically significant areas. Actions to minimize disturbance may include, but are not limited to, the following recommendations:

- Minimize vehicular disturbance in the MBS Site (allow only vehicles/equipment necessary for construction activities);
- Do not park equipment or stockpile supplies in the MBS Site;
- Do not place spoil in the MBS Site or other sensitive areas;
- Retain a buffer between proposed activities and the MBS Site;
- If possible, conduct the work under frozen ground conditions;
- Use effective erosion prevention and sediment control measures;
- Inspect and clean all equipment prior to bringing it to the Site to prevent the introduction and spread of invasive species;
- As much as possible, operate within already-disturbed areas;
- Revegetate disturbed soil with native species suitable to the local habitat as soon after construction as possible; and
- Use only weed-free mulches, topsoils, and seed mixes. Of particular concern are birdsfoot trefoil (*Lotus corniculatus*) and crown vetch (*Coronilla varia*), two invasive species that are sold commercially and are problematic in prairies and disturbed open areas.

There are three areas ranked as *Areas with Potential Local Conservation Value* near the project boundary in Lincoln and Lyon Counties that the Minnesota Biological Survey considered for Sites of Biodiversity Significance but were determined to be below the minimum biodiversity threshold for statewide significance. These areas, however, have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. These areas are in T112N R44W Sections 1 and 10 and T112N 45W Section 6.

MBS Sites of Biodiversity Significance and DNR Native Plant Communities can be viewed using the Minnesota Conservation Explorer or their GIS shapefiles can be downloaded from the MN Geospatial Commons. Please contact the NH Review Team if you need assistance accessing the data. Reference the MBS Site Biodiversity Significance and Native Plant Community websites for information on interpreting the data.

- The proposed project in central and eastern Lincoln County is within an area identified as *Prairie Core* or *Prairie Corridor* in the Minnesota Prairie Conservation Plan, a twenty-five year strategy for accelerating prairie conservation in the state. To meet the Plan's goals, areas within these designations will need to include restoration. As such, any efforts toward prairie or grassland restoration after project construction are encouraged.

State-listed Species

- The loggerhead shrike (*Lanius ludovicianus*), a state-listed endangered bird, has been documented in the vicinity of the project site in Dakota and Lincoln Counties. Loggerhead shrikes use grasslands that contain short grass and scattered perching sites such as hedgerows, shrubs, or small trees. They can be found in native prairie, pastures, shelterbelts, old fields or orchards, cemeteries, grassy roadsides, and farmyards. Minnesota's Endangered Species Statute (*Minnesota Statutes*, section 84.0895) and associated Rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) prohibit the take of endangered or threatened plants or animals, including their parts or seeds, without a permit. **Given the potential for this species to be found in the vicinity of the project, tree and shrub removal is required to be avoided during the breeding season, April through July in these two counties.** If you cannot avoid tree removal during loggerhead shrike breeding period, a qualified surveyor needs to conduct a survey for active nests before any trees or shrubs will be removed. Requirements for surveys and lists of DNR certified lists of surveyors can be found at the Natural Heritage Review website. Survey results should be sent to the NH Review Team at Reports.NHIS@state.mn.us.

- Henslow's sparrows (*Centronyx henslowii*), a state-listed endangered bird species, have been documented in the vicinity of the proposed project in T112N R45W Section 2. Suitable nesting habitat for this species includes uncultivated and unmowed grasslands and old fields with standing, dead vegetation, and a substantial litter layer. As such, initial disturbance in these areas **in this Section** should not occur during their breeding season, between May 15th and July 15th. **If avoidance during breeding season is not feasible, areas that will be disturbed that contain suitable nesting habitat will need to be surveyed for active nests prior to any project disturbance.** Surveys must follow the standards contained in the Rare Species Survey Process. Visit the Natural Heritage Review page for a list of certified surveyors and more information on this process. Please consult with the NH Review Team at Reports.NHIS@state.mn.us if you have any questions regarding this process.

- Blanding's turtles (*Emydoidea blandingii*), a state-listed threatened species, have been documented in the vicinity of the proposed project in Dakota and Scott Counties. Blanding's turtles use upland areas up to and over a mile distant from wetlands, waterbodies, and watercourses. Uplands are used for nesting, basking, periods of dormancy, and traveling between wetlands. Factors believed to contribute to the decline of this species include collisions with vehicles, wetland drainage and degradation, and the development of upland habitat. Any added mortality can be detrimental to populations of Blanding's turtles, as these turtles have a low reproduction rate that depends upon a high survival rate to maintain population levels.

  This project has the potential to impact this rare turtle through direct fatalities and habitat disturbance/destruction due to excavation, fill, and other construction activities associated with the project. As such, **the following avoidance measures are required in Dakota and Scott Counties**:

  - Avoid wetland and aquatic impacts during hibernation season, between September 15th and April 15th, if the area is suitable for hibernation.
  - The use of erosion control blanket shall be limited to 'bio-netting' or 'natural-netting' types, and specifically not products containing plastic mesh netting or other plastic components.
    - Also, be aware that hydro-mulch products may contain small synthetic (plastic) fibers to aid in their matrix strength. These loose fibers could potentially re-suspend and make their way into wetlands and other waters. As such, please review mulch products and do not allow any materials with synthetic (plastic) fiber additives in areas that drain into water bodies.
  - Construction areas, especially aquatic or wetland areas, should be thoroughly checked for turtles before the use of heavy equipment or any ground disturbance.
    - The Blanding's turtle flyer must be given to all contractors working in the area.
    - Monitor for turtles during construction and report any sightings to the DNR Nongame Specialist, Erica Hoaglund (Erica.Hoaglund@state.mn.us).
    - If turtles are in imminent danger they must be moved by hand out of harm's way, otherwise, they are to be left undisturbed.

  If following the above avoidance measures is not possible, please contact NHIS.Review@state.mn.us as further action may be needed.

  For additional information, see the Blanding's turtle fact sheet, which 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 both lists of recommendations and apply those that are relevant to your project.** For further assistance regarding the Blanding's turtle, please contact the DNR Regional Nongame Specialist, Erica Hoaglund.

- Creek heelsplitter (*Lasmigona compressa*), a state-listed mussel species of special concern, has been documented in the Yellow Medicine River and Redwood River in Lincoln County in the vicinity of the proposed project. Mussels are particularly vulnerable to deterioration in water quality, especially increased siltation. As such, it is important effective erosion prevention and sediment control practices be implemented and maintained throughout the duration of the project near these rivers and their tributaries.

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts. For further assistance with these species, please contact the appropriate DNR Regional Nongame Specialist or Regional Ecologist.

Federally Protected Species

- The area of interest overlaps with a U.S Fish and Wildlife Service (USFWS) Rusty Patched Bumble Bee High Potential Zone in T113N R19W Sections 4-8. The rusty patched bumble bee *(Bombus affinis)* is federally listed as endangered and is likely to be present in suitable habitat within High Potential Zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. If applicable, the DNR recommends reseeding disturbed soils with native species of grasses and forbs using BWSR Seed Mixes or MnDOT Seed Mixes.

  To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online Information for Planning and Consultation (IPaC) tool. Please note that all projects, regardless of whether there is a federal nexus, are subject to federal take prohibitions. The IPaC review will determine if prohibited take is likely to occur and, if not, will generate an automated letter. The USFWS RPBB guidance provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix.

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

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. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the Natural Heritage Review website for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

James Drake

James Drake
Natural Heritage Review Specialist
James.F.Drake@state.mn.us

Cc: Melissa Collins, Haley Byron