Appendices

Appendix A

Beaver Creek 161 kV Transmission Line Scoping Decision Document

In the Matter of the Application of Dairyland Power Cooperative for a Route Permit for the Beaver Creek 161 kV Transmission Line in Fillmore County, Minnesota

ENVIRONMENTAL ASSESSMENT SCOPING DECISION

DOCKET NO. ET-3/TL-24-95

The above matter has come before the Commissioner of the Department of Commerce (Department) for a decision on the scope of the environmental assessment (EA) that will be prepared for the Beaver Creek 161 kilovolt (kV) transmission line project proposed by Dairyland Power Cooperative (applicant) in Fillmore County, Minnesota.

Project Description

Dairyland Power Cooperative filed a route permit application for the Beaver Creek 161 kV transmission line project (project) on August 26, 2024.[1] The Minnesota portion of the project consists of approximately 3.5 miles of a new 161 kV single-circuit high voltage transmission line and associated facilities on a new right-of-way, adjacent to existing road right-of-way in York Township, Fillmore County.

On September 5, 2024, the Minnesota Public Utilities Commission (Commission) issued a notice soliciting comments on the following completeness of the application and other concerns related to this matter.[2] On October 15, 2024, the Commission accepted the route permit application as complete.[3]

Project Purpose

The applicant indicates that the proposed project was identified as part of the 2017 August West Area Midcontinent Independent System Operator (MISO) Generation Interconnection Study as being needed to allow proposed generators studied in 2017 to interconnect to the transmission system, to mitigate negative impacts to the thermal and voltage performance of the regional transmission system and to increase the capability of proposed generators in the future to connect to the transmission system.[4]

---

[1] Route Permit Application for the Beaver Creek 161 kV Transmission Line Project, Dairyland Power Cooperative, August 26, 2024, eDockets Numbers – Filing Letter 20248-209763-01; Application (Text) 20248-209763-02; Appendix A (Project Maps); 20248-209763-03; Appendix B (MISO DPP August West Area Study Phase 3 Final Report) 20248-209763-04; Appendix C (Agency and Tribal Correspondence) 20248-209763-05; Appendix D (Alternative Process Letter) 20248-209763-06; Appendix E (Property Owners Within or Adjacent to the Proposed Route) 20248-209763-07; Appendix F (Vegetation Management Pan) 20248-209763-08; Appendix G (Emissions Calculation Table) 20248-209763-09; Appendix H (Cultural Literature Review) 20248-209766-01; (Cultural Trade Secret) 20248-209766-02; Appendix I (IPaC and MnDNR NHI Response) 20248-209766-03; Appendix J (Unanticipated Discoveries Plan) 20248-209766-04 [hereinafter Application].

[2] Notice of Comment Period on Application Completeness, September 5, 2024, eDocket Number 20249-209999-01.

[3] Commission Order, October 15, 2024, eDockets Number 202410-211003-01.

Regulatory Background

The proposed project requires a route permit from the Commission. Department Energy Environmental Review and Analysis (EERA) staff is responsible for conducting environmental review of route permit applications on behalf of the Commission.[4] EERA staff will prepare an environmental assessment (EA) that will inform Commission decisions on the applicant's route permit application. The first step in preparing the EA is scoping. The purpose of scoping is to provide citizens, local governments, tribal governments, and agencies an opportunity to focus the EA on those issues and alternatives that are relevant to the proposed project.

Scoping Process

The EA scoping process has two primary purposes: (1) to gather public input on the impacts, mitigation measures, and alternatives to study in the EA, and (2) to focus the EA on those impacts, mitigation measures, and alternatives that will aid in the Commission's decision on the route permit.

EERA staff gathered input on the EA scope through two public meetings and an associated comment period. This scoping decision identifies potential impacts and mitigation measures that will be analyzed in the EA.

Public Scoping Meetings and Written Comments

A 42-day comment period, which began on October 22, 2024, and closed on December 3, 2024, provided the public an opportunity to submit comments to EERA staff on potential impacts and mitigation measures for consideration during the EA scope development process.

Commission and EERA staff held two public information and EA scoping meetings. One meeting was in-person, and one meeting was virtual. The in-person meeting was held on Tuesday, November 12, 2024, at the LeRoy Community Center, LeRoy, Minnesota. Four members of the public attended this meeting. The virtual meeting was held on Wednesday, November 13, 2024. No members of the public attended the virtual meeting.

Public Meeting Comments

The following individuals provided comments and are summarized as follows:

Todd Stockdale

Mr. Stockdale requested a schematic of the proposed transmission line structure. The applicant provided Mr. Stockdale with a copy of the structure design.[5]

James Wendel

Mr. Wendel inquired as to whether this project will eliminate any of the existing power lines, the impact to land where the project will be built, if the project will be built from the road or adjacent fields, and compensation to landowners and the township for damages caused by construction. Mr. Wendel also wanted to know if the State of Iowa could stop the project for the portion of the project proposed to be in Iowa.[6]

[4] Minnesota Statute 216E.04.
[5] Scoping Comments [eDocket No. 202412-213123-01, pp. 17-18, 22-23]
[6] *Id*., p. 19-21, 23-26.

Fred Scheevel
Mr. Scheevel's comments addressed the length of time needed to construct the project and the number of growing seasons and what will happen to the single-phase distribution lines operated by Mi Energy.[7]

Written Comments
The Minnesota Department of Natural (MnDNR) provided comments,[8] including an attachment from the Minnesota Natural Heritage information System.[9] Comments from MDNR noted the following:

1. A portion of the project is within a region prone to karst feature development and a suggested preparation of karst contingency plan prior to construction. MnDNR also noted the presence of two sinkholes adjacent to the project right-of-way and several other documented sinkholes with a mile of the project.
2. The presence of a calcareous fen in the project area. MnDNR requested that the applicant prepare a calcareous fen management plan if the project will impact the fen.
3. The need to utilize downlit and shielded lighting to minimize blue hue, if the project requires lighting.
4. Avoidance of products containing calcium chloride or magnesium which are used for dust control.
5. The use of erosion control blankets should be limited to "bio-netting" or "natural netting" types, and specifically not products containing plastic mesh netting or other plastic components.
6. Tree removal should be avoided from June 1 through August 15.

Route and Route Segment Proposals
No commenters proposed any new route or route segments for consideration in the EA. EERA staff is not proposing any modifications to Dairyland's proposed transmission line route.

Commission Review
On December 19, 2024, EERA staff provided the Commission with a summary of the EA scoping process.[10] The summary noted that no route alternatives were proposed during the scoping process and recommended that the EA evaluate solely the route proposed by the applicant. In an order dated January 7, 2025, the Commission authorized EERA to include in the scoping decision solely the route for the project identified by Dairyland Power Cooperative in its route permit application.[11]

---

[7] *Id*., p. 25.
[8] Minnesota Department of Natural Resources, [eDocket No. 202412-212653-01].
[9] MnDNR-Natural Heritage Information System, [eDocket No. 202412-212653-02].
[10] December 19, 2024, Minnesota Department of Commerce, EERA Comments and Recommendations on the Scoping Process and Routing Alternatives for the Beaver Creek 161 kV Transmission Line Project [eDocket No. 202412-213201-01].
[11] Commission Order, October 15, 2024, [eDocket Number 20251-213605-01].

HAVING REVIEWED THE MATTER, consulted with Department staff, and in accordance with Minnesota Rule 7850.3700, I hereby make the following scoping decision:

MATTERS TO BE ADDRESSED

The issues outlined below will be analyzed in the EA for the proposed Dairyland Power Cooperative Beaver Creek 161 kV transmission line project. The EA will describe the project and the human and environmental resources of the project area and will provide information on the potential project impacts as they relate to the topics outlined in this scoping decision, as well as possible mitigation measures. It will identify impacts that cannot be avoided, irretrievable commitments of resources, as well as permits from other government entities that may be required for the project. The EA will discuss the relative merits of the route studied in the EA using the routing factors found in Minnesota Rule 7850.4100.

I. GENERAL DESCRIPTION OF THE PROJECT

A. Project Description
B. Project Purpose
C. Route Description
    1. Route Width
    2. Right-of-Way
D. Project Costs

II. REGULATORY FRAMEWORK

A. High Voltage Transmission Line Route Permit
B. Environmental Review Process
C. Other Permits and Approvals

III. ENGINEERING AND DESIGN

A. Transmission Line Structures
B. Transmission Line Conductors

IV. CONSTRUCTION

A. Right-of-Way Acquisition
B. Construction
C. Restoration
D. Damage Compensation
E. Operation and Maintenance

V. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATIVE MEASURES

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

The EA data and analyses will be commensurate with the importance of potential impacts and the relevance of the information for consideration of mitigation measures. Additionally, EERA staff will consider the relationship between the cost of data and analyses and the relevance and importance of the information in determining the level of detail of information to be prepared for the EA. Less important material may be summarized, consolidated, or simply referenced.

If relevant information cannot be obtained within timelines prescribed by statute and rule, or if the costs of obtaining such information is excessive, or the means to obtain it is not known, EERA staff will include a statement in the EA that such information is incomplete or unavailable and the relevance of that information in evaluating potential impacts.

A. Environmental Setting
B. Human Settlements
    1. Noise
    2. Aesthetics
    3. Displacement
    4. Property Values
    5. Socioeconomics / Environmental Justice
    6. Zoning and Land Use Compatibility
    7. Public Services
    8. Electronic Interference
C. Public Health and Safety
    1. Electric and Magnetic Fields
    2. Implantable Medical Devices
    3. Stray Voltage
    4. Induced Voltage
D. Land Based Economies
    1. Agriculture
    2. Forestry
    3. Mining
    4. Recreation and Tourism
E. Archaeological and Historic Resources
F. Natural Environment
    1. Air Quality
    2. Climate Change and Project Climate Change Resilience
    3. Water Resources
        a) Surface Waters
        b) Groundwater
        c) Wetlands
    4. Soils
    5. Vegetation
    6. Wildlife
G. Threatened / Endangered / Rare and Unique Natural Resources
H. Electric System Reliability
I. Operation and Maintenance Costs that are Design Dependent
J. Adverse Impacts that Cannot be Avoided

K. Irreversible and Irretrievable Commitments of Resources
L. Cumulative Potential Effects

VI. ROUTES AND ROUTE ALTERNATIVES TO BE EVALUATED IN THE ENVIRONMENTAL ASSESSMENT

The EA will evaluate the route proposed in the applicant's route permit application.

VII. IDENTIFICATION OF PERMITS

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

ISSUES OUTSIDE THE SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The EA will not consider the following:

A. Any route, route segment, or alignment alternative not specifically identified for study in this scoping decision.
B. Policy issues concerning whether utilities or local governments should be liable for the cost to relocate utility poles when roadways are widened.
C. The way landowners are paid for transmission line right-of-way easements.

SCHEDULE

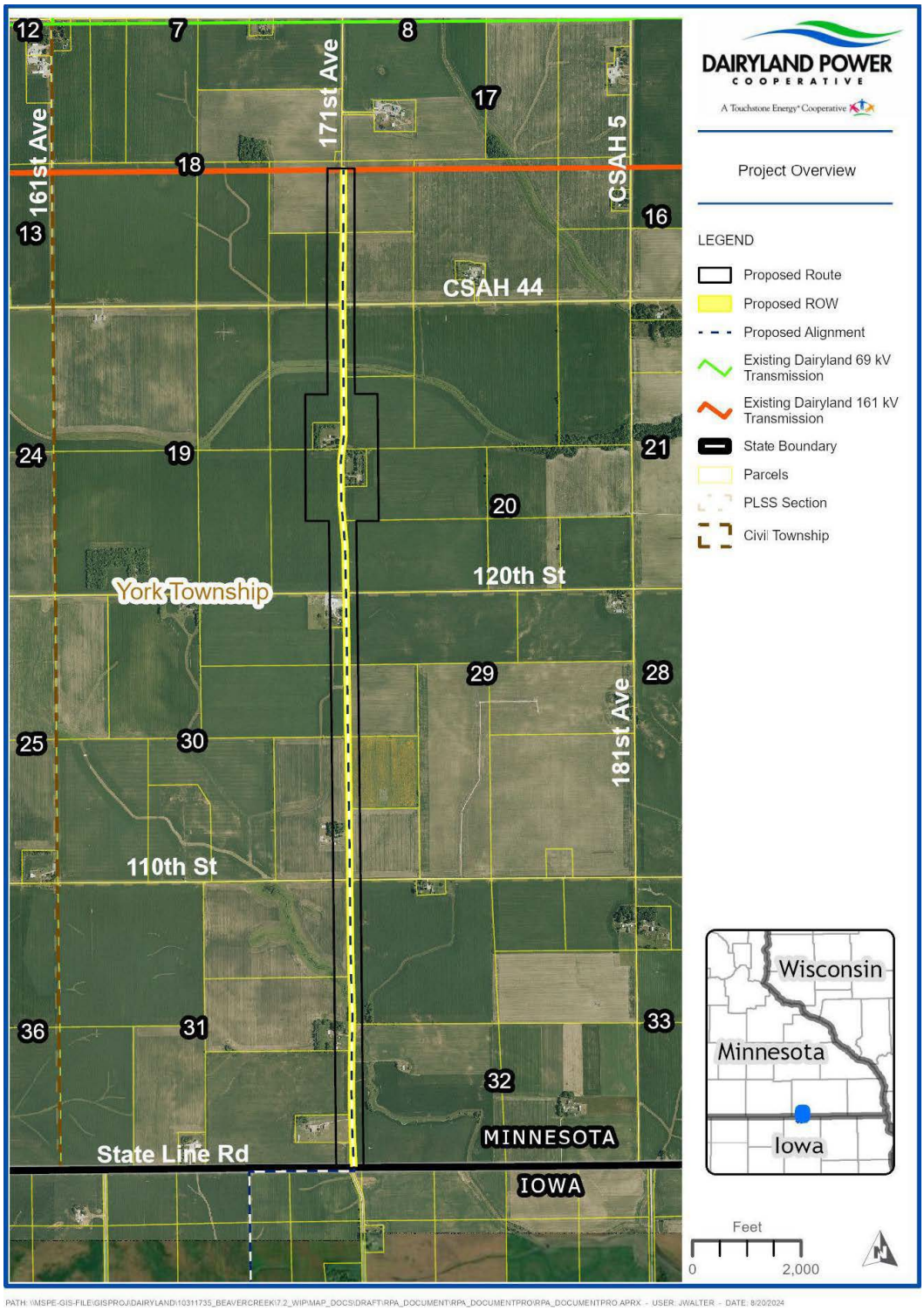
The EA is anticipated to be completed and available on March 27, 2025. Public hearings are anticipated to be held in April 2025 and will be held in the project area.

Signed this 23rd day of January, 2025.

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE

_____
Pete Wyckoff, Deputy Commissioner

Project Overview Map



PATH: \\MSPE-GIS-FILE\GISPROJ\DAIRYLAND\10311735_BEAVERCREEK\7.2_WIP\MAP_DOCS\DRAFT\RPA_DOCUMENT\RPA_DOCUMENTPRO\RPA_DOCUMENTPRO.APRX - USER: JWALTER - DATE: 8/20/2024

Appendix B

Spatial Data Sources

Responsible	Dataset	Source Link	Date Received	In Project Area Y/N
Audubon	Audobon Society Important Bird Areas	https://www.arcgis.com/home/webmap/viewer.html?webmap=3b3d225539f8449daf84be6aa89eab50	2/14/2025	No
Audubon	Gray Owl Management Area	https://www.arcgis.com/home/webmap/viewer.html?webmap=3b3d225539f8449daf84be6aa89eab50	2/14/2025	No
BARR	Golf Clubs	https://earth.google.com/	3/11/2025	Yes
BARR	Pipelines	Minnesota Statewide Utilities Dataset	3/3/2025	Yes
BWSR	RIM Conservation Easements	https://gisdata.mn.gov/dataset/bdry-bwsr-rim-cons-easements	2/11/2025	No
BWSR	State Conservation Easements	https://gisdata.mn.gov/dataset/plan-stateland-dnr	2/11/2025	No
DNR	Calcareous Fens	https://gisdata.mn.gov/dataset/biota-nhis-calcareous-fens	2/11/2025	No
DNR	Campsites	https://gisdata.mn.gov/dataset/struc-parks-and-trails-campsites	2/13/2025	No
DNR	Consolidated Conservation & School Trust Lands	https://gisdata.mn.gov/dataset/plan-stateland-dnr	2/11/2025	No
DNR	County/Local Trails	https://gisdata.mn.gov/dataset/trans-state-park-trails-roads	2/13/2025	No
DNR	DNR Forest Stand	https://gisdata.mn.gov/dataset/biota-dnr-forest-stand-inventory	2/11/2025	No
DNR	DNR Native Prairies	https://gisdata.mn.gov/dataset/biota-dnr-native-prairies	2/11/2025	No
DNR	DNR State Park Trails	https://gisdata.mn.gov/dataset/trans-state-park-trails-roads	2/13/2025	No
DNR	DNR State Trails	https://gisdata.mn.gov/dataset/trans-state-trails-minnesota	2/13/2025	No
DNR	Hunter Walking Trails	https://gisdata.mn.gov/dataset/trans-hunter-walking-trails	2/13/2025	No
DNR	Lakes of Biological Significance	https://gisdata.mn.gov/dataset/env-lakes-of-biological-signific	2/11/2025	No
DNR	MBS Native Plant Communities by Type	https://gisdata.mn.gov/dataset/biota-dnr-native-plant-comm	2/11/2025	No
DNR	MBS Railroad Right-of-Way Prairies	https://gisdata.mn.gov/dataset/biota-mcbs-railroad-prairies	2/11/2025	No
DNR	MBS Sites of Biodiversity Significance	https://gisdata.mn.gov/dataset/biota-mcbs-sites-of-biodiversity	2/11/2025	No
DNR	MDNR Old growth stands	https://gisdata.mn.gov/dataset/biota-dnr-forest-inv-old-growth	2/11/2025	No
DNR	Mineral Leases (Active vs. Ever Offered)	https://gisdata.mn.gov/dataset/plan-state-minleases	2/10/2025	No
DNR	Minnesota Spring Inventory	https://files.dnr.state.mn.us/waters/groundwater_section/mapping/cga/c08_fillmore/pdf_files/plate09.pdf		Yes
DNR	MN DNR Migratory Fowl Feeding and Resting Areas	https://gisdata.mn.gov/dataset/env-migratory-waterfowl-areas	2/14/2025	No
DNR	MN DNR Scientific and Natural Areas	https://gisdata.mn.gov/dataset/bdry-scientific-and-nat-areas	2/11/2025	Yes
DNR	MN DNR Shallow Lakes	https://gisdata.mn.gov/dataset/water-shallow-lakes-id-by-wldlif	2/10/2025	No
DNR	MN DNR State Aquatic Management Areas	https://gisdata.mn.gov/dataset/plan-mndnr-fisheries-acquisition	2/14/2025	No
DNR	MN DNR State Game Refuges	Minnesota State Game Refuge Boundaries	2/14/2025	No
DNR	MN DNR State Water Trails	https://gisdata.mn.gov/dataset/trans-water-trails-minnesota	2/13/2025	No
DNR	MN DNR State Wildlife Management Areas	https://gisdata.mn.gov/dataset/bdry-dnr-wildlife-mgmt-areas-pub	2/14/2025	Yes
DNR	MN DNR Wildlife Lakes	https://gisdata.mn.gov/dataset/env-designated-wildlife-lakes	2/10/2025	No
DNR	Outstanding Resource Value Waters	https://gisdata.mn.gov/dataset/env-orv-waters	2/10/2025	No
DNR	Public Water Inventory Basins/Wetlands	https://gisdata.mn.gov/dataset/water-mn-public-waters	2/10/2025	Yes
DNR	Public Water Inventory Streams	https://gisdata.mn.gov/dataset/water-mn-public-waters	2/10/2025	Yes
DNR	Snowmobile Trails 2024-2025 Season	https://gisdata.mn.gov/dataset/trans-snowmobile-trails-mn	2/13/2025	No
DNR	State Forest Camp Grounds	https://gisdata.mn.gov/dataset/struc-state-forest-campgrounds	2/13/2025	No

Responsible	Dataset	Source Link	Date Received	In Project Area Y/N
DNR	State Forests	Minnesota State Forest Boundaries	2/13/2025	No
DNR	State Parks	https://gisdata.mn.gov/dataset/bdry-dnr-lrs-prk	2/13/2025	No
DNR	Trout Lakes	https://gisdata.mn.gov/dataset/env-trout-lake-designation	2/10/2025	No
DNR	Trout Streams	https://gisdata.mn.gov/dataset/env-trout-stream-designations	2/10/2025	No
DNR	Water Access Points	https://gisdata.mn.gov/dataset/loc-water-access-sites	2/13/2025	No
DNR	Wetland Banking Easement	https://gisdata.mn.gov/dataset/bdry-wetland-banking-easements	2/11/2025	No
DNR	Wild and Scenic River District	https://gisdata.mn.gov/dataset/bdry-wild-and-scenic-river-admin	2/13/2025	No
DNR/USFWS	NWI (MN Update)	https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014	2/10/2025	Yes
FEMA	FEMA Floodplain / Flood Hazard Areas	https://msc.fema.gov/portal/advanceSearch	2/10/2025	Yes
Fillmore County	Cemeteries	https://beacon.schneidercorp.com/Application.aspx?AppID=1066&LayerID=25416&PageTypeID=1&PageID=10332	2/10/2025	No
Fillmore County	County/Local Parks	https://beacon.schneidercorp.com/Application.aspx?AppID=1066&LayerID=25416&PageTypeID=1&PageID=10332	2/13/2025	No
Fillmore County	Emergency Medical Service Stations	https://beacon.schneidercorp.com/Application.aspx?AppID=1066&LayerID=25416&PageTypeID=1&PageID=10332	2/21/2025	No
Fillmore County	Sinkholes	https://beacon.schneidercorp.com/Application.aspx?AppID=1066&LayerID=25416&PageTypeID=1&PageID=10332	2/10/2025	Yes
Fillmore County	Zoning Data	https://beacon.schneidercorp.com/Application.aspx?AppID=1066&LayerID=25416&PageTypeID=1&PageID=10332	2/10/2025	Yes
GNIS	Churches	https://www.arcgis.com/home/item.html?id=ce731871e955437dac62f659f5ab5805	2/10/2025	No
HDR	Commerical & Non-Residential Structures	Commercial & Non-Residential Structures Dataset	2/10/2025	No
HDR	Karst Inventory	Karst Inventory Dataset	2/10/2025	Yes
HDR	Karst Carbonate	Karst Carbonate Dataset	2/10/2025	Yes
HDR	Residences	Residences Dataset	2/10/2025	Yes
HDR	Surficial Geology	Surficial Geology Dataset	2/10/2025	Yes
HDR	transmission lines	Transmission Line Dataset	2/10/2025	Yes
MDE	Schools (Public & Private, > Kindergarten)	https://gisdata.mn.gov/dataset/struc-school-buildings	2/10/2025	No
MDH	Hospitals	https://gisdata.mn.gov/dataset/health-facility-hospitals	2/10/2025	No
MDH	MDH County Well Index	https://gisdata.mn.gov/dataset/water-well-information-non-pws	2/18/2025	Yes
MDH	MDH Wellhead protection area	https://gisdata.mn.gov/dataset/water-wellhead-protection-areas	2/18/2025	No
MDH	Nursing Homes	https://gisdata.mn.gov/dataset/health-facility-nursing-boarding	2/10/2025	No
MDHS	Daycares/Child-care centers/Pre-schools	https://gisdata.mn.gov/dataset/econ-child-care	2/10/2025	No
MNDOT	Aggregate Sources	https://www.dot.state.mn.us/materials/asis_GE.html	3/7/2025	No
MNDOT	Airport/Heliport Locations	https://gisdata.mn.gov/es/dataset/trans-airports	2/10/2025	No
MNDOT	Military Reservation Lands	https://www.arcgis.com/home/item.html?id=6b911a60a5a4465a85fd5c42668bf907	2/10/2025	No
MNDOT	Native American Reservation Lands	https://www.arcgis.com/home/item.html?id=8fded139728f48b3b374a5dbf41dd4ec	2/10/2025	No
MNDOT	Scenic Byways	https://gisdata.mn.gov/dataset/trans-routes-tour	2/13/2025	No
MNDOT	Undocumented or Private Airstrips	https://gisdata.mn.gov/es/dataset/trans-airports	2/10/2025	No
MNIT	Communication Towers	https://gisdata.mn.gov/dataset/util-fcc	2/10/2025	No
MPCA	MPCA Impaired Lakes	https://gisdata.mn.gov/dataset/env-impaired-water-2024-draft	2/10/2025	No

Responsible	Dataset	Source Link	Date Received	In Project Area Y/N
MPCA	MPCA Impaired Streams	https://gisdata.mn.gov/dataset/env-impaired-water-2024-draft	2/10/2025	No
MPCA	MPCA What's in My Neighborhood Sites	https://gisdata.mn.gov/dataset/env-my-neighborhood	2/18/2025	Yes
Pheasants Forever	Pheasant Forever Land	https://pflandsmap.pheasantsforever.org/	2/14/2025	No
SHPO	MnSHIP Historic Property Lines	https://geocrm.gisdata.mn.gov/arcgis/rest/login?redirect=https%3A//geocrm.gisdata.mn.gov/arcgis/rest/services/MnSHIP_public_external/HistoricProp_public_wfs/FeatureServer	3/4/2025	No
SHPO	MnSHIP Historic Property Points	https://geocrm.gisdata.mn.gov/arcgis/rest/login?redirect=https%3A//geocrm.gisdata.mn.gov/arcgis/rest/services/MnSHIP_public_external/HistoricProp_public_wfs/FeatureServer	3/4/2025	Yes
SHPO	MnSHIP Historic Property Polygons	https://geocrm.gisdata.mn.gov/arcgis/rest/login?redirect=https%3A//geocrm.gisdata.mn.gov/arcgis/rest/services/MnSHIP_public_external/HistoricProp_public_wfs/FeatureServer	3/4/2025	No
SHPO	MnSHIP Historic Sites	https://geocrm.gisdata.mn.gov/arcgis/rest/services/MnSHIP_public_external/HistoricProp_public_wfs/FeatureServer	3/4/2025	No
UMN	Minnesota Fire Stations	https://umn.maps.arcgis.com/apps/mapviewer/index.html?layers=678dc7e3a5054456a145ab4e7671abbf	2/10/2025	No
UMN	Minnesota Law Enforcement Locations	https://umn.maps.arcgis.com/apps/mapviewer/index.html?layers=ed4469ef539440529daad12013af4bc6	2/10/2025	No
USDA	Highly Erodible soil (by Water) – acres highly erodible by water	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	Highly Erodible soil (by Wind) – acres highly erodible by wind	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	Rutting Hazard (Slight, Moderate, Severe) – acres by category	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	SSURGO Erosion Hazard (Off-Road, Off-Trail)	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	SSURGO Hydric soils	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	SSURGO Prime Farmland	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	SSURGO Soil map unit name	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	SSURGO Soil map unit symbol	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USDA	Surface texture (sandy loam, loam, silt loam, muck, etc.) – acres by type	https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx	2/21/2025	Yes
USFWS	Grassland Bird Conservation Areas	https://www.arcgis.com/home/webmap/viewer.html?webmap=3b3d225539f8449daf84be6aa89eab50	2/14/2025	No
USFWS	MN DNR Waterfowl Production Area	https://hub.arcgis.com/datasets/fedmaps::waterfowl-production-areas/explore?location=44.481474%2C-97.583468%2C9.66	2/14/2025	No
USFWS	National Forest	Minnesota National Forest Boundaries	2/13/2025	No
USFWS	National Parks	Minnesota National Park Boundaries	2/13/2025	No
USFWS	National Wildlife Refuge	https://www.fws.gov/service/national-wildlife-refuge-system-gis-data-and-mapping-tools https://gis-fws.opendata.arcgis.com/datasets/fws::fws-national-realty-tracts-simplified/explore	2/14/2025	No
USFWS	Rusty Patched Bumble High Potential Zones	https://www.arcgis.com/home/item.html?id=b2e7e0c1ddad4f50a20bcfc1bfcfbbcb https://gis-fws.opendata.arcgis.com/	2/11/2025	No
USFWS	USFWS Interests	https://catalog.data.gov/dataset/fws-cadastral-geodatabase-external-facing-e829d	2/14/2025	No
USGS	NHD Flowlines	https://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Hydrography/NHD/State/GDB/	2/10/2025	Yes
USGS	NHD Waterbodies	https://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Hydrography/NHD/State/GDB/	2/10/2025	Yes
USGS	NLCD 2022	https://www.usgs.gov/centers/eros/science/national-land-cover-database	2/11/2025	Yes

Appendix C

Master Data Tables

	Centerline	ROW	Route Width	Residences					Non-Residential Structures				
				Within 50 ft (ROW)	Within 250 ft	Within 500 ft	Within 1,000 ft	Total	Within 50 ft (ROW)	Within 250 ft	Within 500 ft	Within 1,000 ft	Total
Route	Length (mi)	Area (ac)	Area (ac)	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count
Applicant's Proposed Route	3.5	42.1	255.4	0	5	1	0	6	0	10	18	7	35

	Archaeological Resources				Historic Resources				National Landcover Dataset					Geology	
									Agriculture	Developed	Barren Land	Open Land	Herbaceous	Sink Holes	Karst Topography
	Within 50 ft (ROW)	Within Route Width	Within 1 mi	Total	Within 50 ft (ROW)	Within Route Width	Within 1 mi	Total	Within 50 ft (ROW)	Within 50 ft (ROW)	Within 50 ft (ROW)	Within 50 ft (ROW)	Within 50 ft (ROW)	Within Route Width	Within Route Width
Route	Count	Count	Count	Count	Count	Count	Count	Count	Area (ac)	Area (ac)	Area (ac)	Area (ac)	Area (ac)	Count	Area (ac)
Applicant's Proposed Route	0	0	0	0	2	1	5	8	9.6	19.7	0	12.4	0.4	2	90.9

	MN Department of Health County Well Index		National Hydrography Dataset Waterbodies			National Hydrography Dataset Watercourses			National Wetland Inventory Wetlands				Public Water Inventory Streams		
									All		Non Forested				
	Within 50 ft (ROW)	Within Route Width	Crossing	Within 50 ft (ROW)	Within Route Width	Crossing	Within 50 ft (ROW)	Within Route Width	Crossing (> 1,000 ft span)	Crossing (< 1,000 ft span)	Within 50 ft (ROW)	Within Route Width	Crossing	Within 50 ft (ROW)	Within Route Width
Route	Count	Count	Count	Area (ac)	Area (ac)	Count	Length (ft)	Length (ft)	Count	Count	Area (ac)	Area (ac)	Count	Length (ft)	Length (ft)
Applicant's Proposed Route	0	5	0	0	0	3	1,017.0	3,543.5	0	4	4	11	2	904.8	1,470.8

	Right-of-Way Paralleling / Sharing by Type											
	Rail		Road		Transmission Line		Rail, Road, or Transmission Line		Parcel, Section, or Field		Total Paralleling / Sharing	
	Length		Length		Length		Length		Length		Length	
Route	Length (mi)	Percent	Length (mi)	Percent	Length (mi)	Percent	Length (mi)	Percent	Length (mi)	Percent	Length (mi)	Percent
Applicant's Proposed Route	0.0	0	3.5	100	0.0	0	3.5	100	3.5	100	3.5	100

Appendix D

Greenhouse Gas Calculations

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 1. Summary of Construction GHG Emissions

Emission Source	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	CO_2e (metric tons)
Direct Sources				
Mobile Combustion	165.85	1.59E-02	1.35E-02	169.88
Temporary Land Use Change	-	-	-	11.26
TOTAL - ALL SOURCES	**165.85**	**0.02**	**0.01**	**181.14**

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 2. Summary of Operations GHG Emissions

Emission Source	CO_2 (metric tons/year)	CH_4 (metric tons/year)	N_2O (metric tons/year)	CO_2e (metric tons/year)
Direct Sources				
Mobile Combustion	0.81	1.52E-04	9.55E-05	0.84
TOTAL - ALL SOURCES	**0.81**	**1.52E-04**	**9.55E-05**	**0.84**

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 3. Conversions

Unit	Amount	Unit
1 US ton	2000	lbs
1 US ton	0.907185	metric tons
1 US ton	907.185	kg
1 US ton	907185	grams
1 metric ton	1000	kg
1kg	1000	grams
1 lb	0.453592	kg
1 lb	453.592	grams
1 MWh	1000	kWh
1 hectare	2.47105	acres
1 MJ	0.372506136	hp-h
US gallon (diesel)[1]	144.945	MJ
US gallon (diesel)	53.9929019	hp-h
US gallon (gasoline)[1]	126.833	MJ
US gallon (gasoline)	47.24606261	hp-h

[1] US Energy Information Administration, 2024. https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 4. Global Warming Potentials

Greenhouse Gas Name	CAS Number	Chemical Formula	Global Warming Potential (100-yr.) [1]
Carbon dioxide	124–38–9	CO_2	1
Methane	74–82–8	CH_4	28
Nitrous oxide	10024–97–2	N_2O	265

[1] Global Warming Potentials, 100-Year Time Horizon, Table A-1 to Subpart A of Part 98, Title 40

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 5. Construction Emissions from Fuel Combustion Sources

Equipment Type[1]	Fuel Type[1]	Number of Units[1]	Annual Operating Time per Unit[1] (hours)	Estimated Horsepower[1]	CO_2 Emission Factor[2] (kg/gal)	CH_4 Emission Factor[3] (g/gal)	N_2O Emission Factor[3] (g/gal)	CO_2 Emission Factor[2] (lb/hr)	CH_4 Emission Factor[3] (lb/hr)	N_2O Emission Factor[3] (lb/hr)	CO_2 (metric tons)	CH_4 (metric tons)	N_2O (metric tons)	CO_2e[4] (metric tons)
ATV	Diesel	2	320	20	10.21	0.73	0.66	8.34	5.96E-04	5.39E-04	2.42	1.73E-04	1.56E-04	2.47
BOOM TRUCK (ASSUMED EMISSION FACTORS EQUIVALENT TO BUCKET 125' WORK HEIGHT 8X6)	Diesel	6	320	50	10.21	1.01	0.94	20.84	2.06E-03	1.92E-03	18.15	1.80E-03	1.67E-03	18.65
BUCKET 125' WORK HEIGHT 8X6	Diesel	6	600	50	10.21	1.01	0.94	20.84	2.06E-03	1.92E-03	34.04	3.37E-03	3.13E-03	34.96
DOZER 18 T W/ WINCH	Diesel	1	80	250	10.21	1.01	0.94	104.22	1.03E-02	9.60E-03	3.78	3.74E-04	3.48E-04	3.88
FRONT END LOADER 68,000# 4X4	Diesel	1	160	196	10.21	1.01	0.94	81.71	8.08E-03	7.52E-03	5.93	5.87E-04	5.46E-04	6.09
HYDRAULIC BULLWHEEL BUNDLE TENSIONER	Diesel	1	80	75	10.21	1.01	0.94	31.27	3.09E-03	2.88E-03	1.13	1.12E-04	1.04E-04	1.17
300T AT Setting Crane	Diesel	1	256	100	10.21	1.01	0.94	41.69	4.12E-03	3.84E-03	4.84	4.79E-04	4.46E-04	4.97
CONCRETE PUMPS	Diesel	1	60	300	10.21	1.01	0.94	125.07	1.24E-02	1.15E-02	3.40	3.37E-04	3.13E-04	3.50
SKID STEER LOADER TRACK MTD 80 > 75 HP	Diesel	4	256	50	10.21	1.01	0.94	20.84	2.06E-03	1.92E-03	9.68	9.58E-04	8.91E-04	9.94
DUMP BOX TRUCK 1-1/4 & 1-1/2 T	Diesel	2	280	325	10.21	1.01	0.94	135.49	1.34E-02	1.25E-02	34.42	3.40E-03	3.17E-03	35.35
CONCRETE MIXER TRUCK (ASSUMED DUMP BOX TRUCK 1-1/4 & 1-1/2 T EQUIVALENT EMISSION FACTORS)	Diesel	1	36	325	10.21	1.01	0.94	135.49	1.34E-02	1.25E-02	2.21	2.19E-04	2.04E-04	2.27
HYDROVAC TRUCK (ASSUMED DUMP BOX TRUCK 1-1/4 & 1-1/2 T EQUIVALENT EMISSION FACTORS)	Diesel	1	24	100	10.21	1.01	0.94	41.69	4.12E-03	3.84E-03	0.45	4.49E-05	4.18E-05	0.47
SEMI TRUCK/TRAILER c	Diesel	2	240	100	10.21	0.92	0.56	41.69	3.76E-03	2.29E-03	9.08	8.18E-04	4.98E-04	9.23
PICKUP TRUCK 3/4 T	Diesel	4	320	150	10.21	0.92	0.56	62.53	5.63E-03	3.43E-03	36.31	3.27E-03	1.99E-03	36.93
TOTAL	--	--	--	--	--	--	--	--	--	--	**165.85**	**1.59E-02**	**1.35E-02**	**169.88**

[1] Based on information in Appendix G of the Route Permit Application.

[2] CO_2 emissions calculated using the EPA CCCL emission factors for mobile combustion, Table 2: Mobile Combustion CO_2, 2025. https://www.epa.gov/system/files/documents/2025-01/ghg-emission-factors-hub-2025.pdf

Fuel Type	CO_2 Emission Factor (kg/gal)
Diesel Fuel	10.21

[3] CH_4 and N_2O emissions calculated using the EPA CCCL emission factors for construction/mining equipment, Table 5: Mobile Combustion CH_4 and N_2O for Non-Road Vehicles, 2025. https://www.epa.gov/system/files/documents/2025-01/ghg-emission-factors-hub-2025.pdf

Vehicle Type	Fuel Type	CH4 Emission Factor (g/gal)	N2O Emission Factor (g/gal)
Construction/Mining Equipment	Diesel Equipment	1.01	0.94
Construction/Mining Equipment	Diesel Off-road Trucks	0.92	0.56
Recreational Equipment	Diesel Equipment	0.73	0.66

[4] CO2e calculated by equation A-1 of 40 CFR 98.2, which states the total CO2e is equal to the GWP for each pollutant multiplied by the potential pollutant emissions.

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 6. Construction Land Use Change GHG Emissions

Temporary Land Use Change[1]	Area of Land Change[1] (acres)	2022 Net CO_2 Flux for Converted Land Type[2][3] (M metric tons CO_2e)	2022 Total US Land Use Change to Settlement[4] (thousands of hectares)	CO_2e Emission Factor (metric tons CO_2e/acre)	CO_2e[5] (metric tons)
Cropland to Settlement	9.59	2.9	1,228	0.96	1.51
Grassland to Settlement	32.18	7.5	1,648	1.84	9.74
Settlement remaining Settlement	0.40	15.4	43,748	0.14	0.01
TOTAL	**42.16**	**25.80**	**46,624.00**	**2.94**	**11.26**

[1] Estimated from development area delineation files and NLCD land cover estimates.
[2] Table 6-136: Net CO2 Flux from Soil, Dead Organic Matter and Biomass Carbon Stock Changes
[3] Table 6-119: Net CO2 Flux from Soil C Stock Changes in Settlements Remaining Settlements, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.
[4] Table 6-5: Land Use and Land-Use Change for the U.S. Managed Land Base for All 50 States, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2022.
[5] Emissions are calculated for an assumed 60-day duration of temporary disturbances.

Dairyland Power Cooperative
Beaver Creek Transmission Line Project
GHG Calculations

Table 7. Operation Emissions from Fuel Combustion Sources

Activity	Activity Frequency[1]	Equipment Type[1]	Fuel Type[2]	Number of Units[1]	Operating Time[1] (hours/yr)	Operating Time Assumption[1]	Total Fuel Usage[1]	Estimated Horsepower[3]	CO_2 Emission Factor[4] (kg/gal)	CH_4 Emission Factor[5] (g/gal)	N_2O Emission Factor[5] (g/gal)	CO_2 Emission Factor[6] (lb/hr)	CH_4 Emission Factor[6] (lb/hr)	N_2O Emission Factor[6] (lb/hr)	CO_2 (metric tons/yr)	CH_4 (metric tons/yr)	N_2O (metric tons/yr)	CO_2e[7] (metric tons/yr)
Vegetation Management	Every 6 years	Crew Truck (F-350)	Gasoline Off-Road Trucks	1	8.00	(2) 24-hr weeks		405	8.78	1.93	1.20	165.93	3.65E-02	2.27E-02	0.60	1.32E-04	8.23E-05	0.63
Vegetation Management	Every 6 years	Chipper Truck	Diesel Off-Road Trucks	1	2.00	(2) 6-hr weeks		430	10.21	0.92	0.56	179.26	1.62E-02	9.83E-03	0.16	1.47E-05	8.92E-06	0.17
Vegetation Management	Every 6 years	Wood Chipper	Diesel Equipment	1	1.33	(2) 4-hr weeks	3 gal/hr	-	10.21	1.26	1.07	-	-	-	4.08E-02	5.04E-06	4.28E-06	4.21E-02
Vegetation Management	Every 6 years	UTV	Gasoline (4 stroke) - Recreational	1	4.00	(2) 12-hr weeks	5 gal (total)	-	8.78	2.74	1.49	-	-	-	4.39E-02	1.37E-05	7.45E-06	4.63E-02
Vegetation Management	Every 6 years	Bucket Truck	Diesel Off-Road Trucks	1	1.00	(1) 6-hr week		375	10.21	0.92	0.56	156.33	1.41E-02	8.57E-03	7.09E-02	6.39E-06	3.89E-06	7.21E-02
Vegetation Management	Every 6 years	Inspection Truck (F-150)	Gasoline Off-Road Trucks	1	0.33	(1) 2-hr week		395	8.78	1.93	1.20	141.61	3.11E-02	1.94E-02	2.14E-02	4.71E-06	2.93E-06	2.23E-02
Vegetation Management	Every 6 years	Power Saw	Gasoline (2 stroke)	3	24.00	(2) 24-hr weeks per power saw	1 gal/day	-	8.78	7.34	0.31	-	-	-	8.78E-03	7.34E-06	3.10E-07	9.07E-03
Maintenance	Every 2 year	Inspection Truck (F-150)	Gasoline Off-Road Trucks	1	1.00	(1) 2-hr week		395	8.78	1.93	1.20	141.61	3.11E-02	1.94E-02	6.42E-02	1.41E-05	8.78E-06	6.70E-02
Maintenance	Every 2 year	UTV	Gasoline (4 stroke) - Recreational	1	1.00	(1) 2-hr week	5 gal (total)	-	8.78	2.74	1.49	-	-	-	4.39E-02	1.37E-05	7.45E-06	4.63E-02
TOTAL		--		--	--	--		--				--	--		**0.81**	**1.52E-04**	**9.55E-05**	**0.84**

[1] Activity, frequency, equipment type, estimated fuel usage, number of units, and operating time provided electronically by Dairyland Power Cooperative on 03/04/2025. Estimates include typical operation equipment used for operation and maintenance activities.

[2] Fuel type assumed based on equipment type.

[3] Horsepower estimates based on information below for each equipment type.

Equipment Type	Estimated Horsepower	Estimated Horsepower Reference
Inspection Truck (F-150)	395	https://www.onallcylinders.com/2023/06/28/2018-23-ford-f-150-5-0l-third-gen-coyote-truck-engine-spec-guide-performance-cylinder-head-cams-more/
Crew Truck (F-350)	405	https://www.ford.com/trucks/super-duty/features/performance/
Chipper Truck	430	https://www.ford.com/trucks/super-duty/features/performance/
Bucket Truck	375	https://www.trailer-bodybuilders.com/archive/article/21730986/kenworth-offers-advice-on-specs-for-dump-trucks

[4] CO_2 emissions calculated using the EPA CCCL emission factors for mobile combustion, Table 2: Mobile Combustion CO_2, 2025. https://www.epa.gov/system/files/documents/2025-01/ghg-emission-factors-hub-2025.pdf

Fuel Type	CO2 Emission Factor (kg/gal)
Diesel Fuel	10.21
Motor Gasoline	8.78

[5] CH_4 and N_2O emissions calculated using the EPA CCCL emission factors for construction/mining equipment, Table 5: Mobile Combustion CH_4 and N_2O for Non-Road Vehicles, 2025. https://www.epa.gov/system/files/documents/2025-01/ghg-emission-factors-hub-2025.pdf

Vehicle Type	Fuel Type	CH4 Emission Factor (g/gal)	N2O Emission Factor (g/gal)
Agricultural Equipment	Diesel Equipment	1.26	1.07
Lawn and Garden Equipment	Gasoline (2 stroke)	7.34	0.31
Agricultural Equipment	Gasoline Off-Road Trucks	1.93	1.20
Agricultural Equipment	Diesel Off-Road Trucks	0.92	0.56
Recreational Equipment	Gasoline (4 stroke) - Recreational	2.74	1.49

[6] Emission factors converted to lb/hr using conversion rates of 53.993 hp-hr/gal for diesel, and 47.246 hp-hr/gal for gasoline.

[7] CO_2e calculated by equation A-1 of 40 CFR 98.2, which states the total CO_2e is equal to the GWP for each pollutant multiplied by the potential pollutant emissions.

Appendix E

Draft Route Permit

EERA STAFF PROPOSED MODIFICATIONS TO THE COMMISSION'S SAMPLE PERMIT ARE SHOWN BY STRIKEOUTS AND UNDERSCORING IN RED

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

ROUTE PERMIT FOR THE
~~[PROJECT NAME]~~
BEAVER CREEK TRANSMISSION PROJECT

A HIGH-VOLTAGE TRANSMISSION LINE AND ASSOCIATED FACILITIES

IN
~~[~~FILLMORE COUNTY~~]~~

ISSUED TO
~~[PERMITTEE]~~ DAIRYLAND POWER COOPERATIVE

PUC DOCKET NO. [~~Docket Number~~ ET3/TL-24-95]

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850 this route permit is hereby issued to:

~~[Permittee]~~DAIRYLAND POWER COOPERATIVE

Dairyland Power Cooperative [the "Permittee"] is authorized by this route permit to construct and operate a new 161 kV high voltage transmission line and associated facilities ~~[Provide a description of the projec~~t authorized by the Minnesota Public Utilities Commission].

The high-voltage transmission line shall be constructed within the route identified in this route permit and in compliance with the conditions specified in this route permit.

Approved and adopted this ____ day of [Month, Year]

BY ORDER OF THE COMMISSION

_____
Will Seuffert, Executive Secretary

To request this document in another format such as large print or audio, call 651-296-0406 or 800-657-3782 (voice). Persons with a hearing or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

CONTENTS

ATTACHMENTS

~~**SAMPLE PERMIT**~~ **DRAFT PERMIT** [~~Project Name~~ Beaver Creek Transmission Line Project and PUC Docket No. ET3/TL-24-95]

1 ROUTE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this route permit to ~~[Permittee Name]~~ Dairyland Power Cooperative (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This route permit authorizes the Permittee to construct and operate a new 161 kV high voltage transmission line and associated facilities ~~[Provide a description of the project as authorized by the Commission]~~ ~~([Project Name, if applicable]~~, henceforth known as Transmission Facility). The high-voltage transmission line shall be constructed within the route identified in this route permit and in compliance with the conditions specified in this route permit.

1.1 Pre-emption

Pursuant to Minn. Stat. § 216E.10, this route permit shall be the sole route approval required for construction of the transmission facilities and this route permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose governments.

2 TRANSMISSION FACILITY DESCRIPTION

~~[Provide a description of the Transmission Facility as authorized by the Commission]~~ The Beaver Creek Transmission Line will start at the intersection of the existing 161 kV LQ8A Harmony to Beaver Creek transmission line and 171st Avenue in York Township, and travel south immediately adjacent (parallel) to 171st Avenue to the Minnesota and Iowa border.

The Transmission Facility is located in the following:

County	Township Name	Township	Range	Section
Fillmore	York	101	12	17, 18, 19, 20, 29, 30, 31 ,32

2.1 Structures

~~[Provide a detailed description of the structures authorized by the Commission]~~
The Beaver Creek transmission line project will consist of single circuit monopole steel structures spaced approximately 300 to 1,000 feet apart. Transmission structures will range in height from 75 to 140 feet above ground, depending upon the terrain and environmental constraints. The average diameter of the steel structures at ground level is 37 inches. Poles will be oriented in a delta configuration (one overhead ground wire at the top, two phases on one side and a single phase on the other) supported by suspension insulators at tangent structures

and strain insulators at tension structures (i.e., dead-end structures). Any structure with a line angle of greater than two degrees will be supported on a drilled shaft concrete foundation. Foundation depths are dependent upon geotechnical data and final design.

2.2 Conductors

~~[Provide a detailed description of the conductors authorized by the Commission]~~
The single circuit structures will have three single conductor phase wires and one shield wire. It is anticipated that the phase wires will be 795 thousand circular mil aluminum conductor steel supported (795 Drake ACSS) or a conductor with similar capacity. The shield wire will be 0.607-inch diameter optical ground wire.

The table below details specifics on the various structure and conductor types as presented in the route permit application.

Line Type	Conductor	Structure		Foundation	Height	Span
		Type	Material			
161 kV	Proposed phase wires are 795 thousand circular mil aluminum conductor steel supported (795 Drake ACSS) or conductor with similar capacity. The shield wire will be 0.607-inch diameter optical ground wire	Monopole with davit arms and suspension insulators	Steel		80 to 140	300 to 1,000
161 kV		Monopole with strain insulator attachments directly to pole	Steel		75 to 110	300 to 1,000

2.3 Substations and Associated Facilities

~~[Provide a detailed description of the associated facilities and substations as authorized by the Commission]~~

3 DESIGNATED ROUTE

The route designated by the Commission is depicted on the route maps attached to this route permit (Designated Route). The Designated Route is generally described as follows:

~~[Provide detailed description of the authorized route including the route widths and any other specifics relevant to each segment. Also include a reference to the relevant route map to be attached to the route permit.]~~
The Project and anticipated alignment (MP 0.0) will begin at the intersection of Dairyland's existing 161 kV LQ8A transmission line and 171st Avenue in York Township in Fillmore County, Minnesota. Existing Dairyland structure will LQ8A-111 will be removed and replaced with a new starting structure for the Project, the location for the new structure being on the Easterly side of 171st Avenue for approximately 1.0 mile. Over the next 0.25 miles, the anticipated alignment will run southwesterly and then southeasterly, transitioning to the westerly side of 171st Avenue and then returning to the easterly side of 171st Avenue. The anticipated alignment continues southerly along the easterly side of 171st for an additional 2.25 miles to the Minnesota and Iowa border.

The Designed Route includes an anticipated alignment and a right-of-way. The right-of-way is the physical land needed for the safe operation of the transmission line. The Permittee shall locate the alignment and associated right-of-way within the Designated Route unless otherwise authorized by this route permit or the Commission. The Designated Route provides the Permittee with flexibility for minor adjustments of the alignment and right-of-way to accommodate landowner requests and unforeseen conditions.

Any modifications to the Designated Route or modifications that would result in right-of-way placement outside the Designated Route shall be specifically reviewed by the Commission in accordance with Minn. R. 7850.4900 and Section 10 of this route permit.

4 RIGHT-OF-WAY

This route permit authorizes the Permittee to obtain a new permanent right-of-way for the transmission line up to [~~number~~100] feet in width. The permanent right-of-way is typically [~~number~~50] feet on both sides of the transmission line measured from its centerline or alignment.

The anticipated alignment is intended to minimize potential impacts relative to the criteria identified in Minn. R. 7850.4100. The final alignment must generally conform to the anticipated alignment identified on the route maps unless changes are requested by individual landowners and agreed to by the Permittee or for unforeseen conditions that are encountered or as otherwise provided for by this route permit.

Any right-of-way or alignment modifications within the Designated Route shall be located so as to have comparable overall impacts relative to the factors in Minn. R. 7850.4100, as does the right-of-way and alignment identified in this route permit and shall be specifically identified and documented in and approved as part of the plan and profile submitted pursuant to Section 9.1 of this route permit.

Where the transmission line parallels existing highway and other road rights-of-way, the transmission line right-of-way shall occupy and utilize the existing right-of-way to the maximum extent possible; consistent with the criteria in Minn. R. 7850.4100, and the other requirements of this route permit; and for highways under the jurisdiction of the Minnesota Department of Transportation (MnDOT), the procedures for accommodating utilities in trunk highway rights-of-way.

5 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the Transmission Facility over the life of this route permit.

5.1 Route Permit Distribution

Within 30 days of issuance of this route permit, the Permittee shall provide all affected landowners with a copy of this route permit and the complaint procedures. An affected landowner is any landowner or designee that is within or adjacent to the Designated Route. In no case shall a landowner receive this route permit and complaint procedures less than five days prior to the start of construction on their property. The Permittee shall also provide a copy of this route permit and the complaint procedures to the applicable regional development commissions, county environmental offices, and city and township clerks. The Permittee shall file with the Commission an affidavit of its route permit and complaint procedures distribution within 30 days of issuance of this route permit.

5.2 Access to Property

The Permittee shall notify landowners prior to entering or conducting maintenance within their property, unless otherwise negotiated with the landowner. The Permittee shall keep records of compliance with this section and provide them upon the request of the Minnesota Department of Commerce (Department of Commerce) staff or Commission staff.

5.3 Construction and Operation Practices

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the permitting record for this Transmission Facility unless this route permit establishes a different requirement in which case this route permit shall prevail.

5.3.1 Field Representative

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this route permit during construction of the Transmission Facility. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative at least 14 days prior to the pre-construction meeting. The Permittee shall provide the field representative's contact information to affected landowners, local government units and other interested persons at least 14 days prior to the pre-construction meeting. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, local government units and other interested persons. The Permittee shall file with the Commission an affidavit of distribution of its field representative's contact information at least 14 days prior to the pre-construction meeting and upon changes to the field representative.

5.3.2 Employee Training - Route Permit Terms and Conditions

The Permittee shall train all employees, contractors, and other persons involved in the Transmission Facility construction regarding the terms and conditions of this route permit. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.3 Independent Third-Party Monitoring

Prior to any construction, the Permittee shall propose a scope of work and identify an independent third-party monitor to conduct construction monitoring on behalf of the Department of Commerce. The scope of work shall be developed in consultation with and approved by the Department of Commerce. This third-party monitor will report directly to and will be under the control of the Department of Commerce with costs borne by the Permittee. Department of Commerce staff shall keep records of compliance with this section and will ensure that status reports detailing the construction monitoring are filed with the Commission in accordance with scope of work approved by the Department of Commerce.

5.3.4 Public Services, Public Utilities, and Existing Easements

During Transmission Facility construction, the Permittee shall minimize any disruption to public services or public utilities. To the extent disruptions to public services or public utilities occur these shall be temporary, and the Permittee shall restore service promptly. Where any impacts to utilities have the potential to occur the Permittee shall work with both landowners and local entities to determine the most appropriate mitigation measures if not already considered as part of this route permit.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.5 Temporary Workspace

The Permittee shall limit temporary easements to special construction access needs and additional staging, or lay-down areas required outside of the authorized right-of-way. Temporary space shall be selected to limit the removal and impacts to vegetation. The Permittee shall obtain temporary easements outside of the authorized transmission line right-of-way from affected landowners through rental agreements. Temporary easements are not provided for in this route permit.

The Permittee may construct temporary driveways between the roadway and the structures to minimize impact using the shortest route feasible. The Permittee shall use construction mats to minimize impacts on access paths and construction areas. The Permittee shall submit the location of temporary workspaces and driveways with the plan and profile pursuant to Section 9.1.

5.3.6 Noise

The Permittee shall comply with noise standards established under Minn. R. 7030.0010 to 7030.0080. The Permittee shall limit construction and maintenance activities to daytime working hours to the extent practicable.

5.3.7 Aesthetics

The Permittee shall consider input pertaining to visual impacts from landowners or land management agencies prior to final location of structures, rights-of-way, and other areas with the potential for visual disturbance. The Permittee shall use care to preserve the natural landscape, minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the vicinity of the Transmission Facility during construction and maintenance.

The Permittee shall work with landowners to locate the high-voltage transmission line to minimize the loss of agricultural land, forest, and wetlands, and to avoid homes and farmsteads. The Permittee shall place structures at a distance, consistent with sound engineering principles and system reliability criteria, from intersecting roads, highways, or trail crossings.

5.3.8 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program. If construction of the Transmission Facility disturbs more than one acre of land or is sited in an area designated by the MPCA as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System Construction Stormwater Permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the Transmission Facility shall be returned to pre-construction conditions.

5.3.9 Wetlands and Water Resources

The Permittee shall develop wetland impact avoidance measures and implement them during construction of the Transmission Facility. Measures shall include spacing and placing the power poles at variable distances to span and avoid wetlands, watercourses, and floodplains. Unavoidable wetland impacts as a result of the placement of poles shall be limited to the immediate area around the poles. To minimize impacts, the Permittee shall construct in wetland areas during frozen ground conditions where practicable and according to permit requirements by the applicable permitting authority. When construction during winter is not possible, the Permittee shall use wooden or composite mats to protect wetland vegetation.

The Permittee shall contain soil excavated from the wetlands and riparian areas and not place it back into the wetland or riparian area. The Permittee shall access wetlands and riparian areas using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts. The Permittee shall not place staging or stringing set up areas within or

adjacent to wetlands or water resources, as practicable. The Permittee shall assemble power pole structures on upland areas before they are brought to the site for installation.

The Permittee shall restore wetland and water resource areas disturbed by construction activities to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. The Permittee shall meet the USACE, Minnesota Department of Natural Resources (DNR), Minnesota Board of Water and Soil Resources, and local units of government wetland and water resource requirements.

5.3.10 Vegetation Management

The Permittee shall minimize the number of trees to be removed in selecting the right-of-way specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation in areas such as trail and stream crossings where vegetative screening may minimize aesthetic impacts, to the extent that such actions do not violate sound engineering principles or system reliability criteria.

The Permittee shall remove tall growing species located within the transmission line right-of-way that endanger the safe and reliable operation of the transmission line. The Permittee shall leave undisturbed, to the extent possible, existing low growing species in the right-of-way or replant such species in the right-of-way to blend the difference between the right-of-way and adjacent areas, to the extent that the low growing vegetation that will not pose a threat to the transmission line or impede construction.

5.3.11 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture (MDA), DNR, and the U.S. Environmental Protection Agency (EPA). Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner at least 14 days prior to pesticide application on their property. The Permittee may not apply any pesticide if the landowner requests that there be no application of pesticides within the landowner's property. The Permittee shall provide notice of pesticide application to landowners and beekeepers operating known apiaries within three miles of the pesticide application area at least 14 days prior to such application. The Permittee shall keep pesticide communication and application records and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.12 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by Transmission Facility construction activities. The Permittee shall develop an Invasive Species Prevention Plan and file it with the Commission at least 14 days prior to the pre-construction meeting. The Permittee shall comply with the most recently filed Invasive Species Prevention Plan.

5.3.13 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee shall select site appropriate seed certified to be free of noxious weeds. To the extent possible, the Permittee shall use native seed mixes. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.14 Roads

The Permittee shall advise the appropriate governing bodies having jurisdiction over all state, county, city, or township roads that will be used during the construction phase of the Transmission Facility. Where practical, existing roadways shall be used for all activities associated with construction of the Transmission Facility. Oversize or overweight loads associated with the Transmission Facility shall not be hauled across public roads without required permits and approvals.

The Permittee shall construct the fewest number of site access roads required. Access roads shall not be constructed across streams and drainage ways without the required permits and approvals. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when accessing construction workspace, unless otherwise negotiated with the affected landowner.

5.3.15 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to archaeological and historic resources when constructing the Transmission Facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Transmission Facility impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, the Permittee shall train workers about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law enforcement and the State Archaeologist. The Permittee shall not resume construction at such location until authorized by local law enforcement or the State Archaeologist. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.16 Avian Protection

The Permittee in cooperation with the DNR shall identify areas of the transmission line where bird flight diverters will be incorporated into the transmission line design to prevent large avian collisions attributed to visibility issues. Standard transmission design shall incorporate adequate spacing of conductors and grounding devices in accordance with Avian Power Line Interaction Committee standards to eliminate the risk of electrocution to raptors with larger wingspans that may simultaneously come in contact with a conductor and grounding devices. The Permittee shall submit documentation of its avian protection coordination with the plan and profile pursuant to Section 9.1.

5.3.17 Drainage Tiles

The Permittee shall avoid, promptly repair, or replace all drainage tiles broken or damaged during all phases of the Transmission Facility's life unless otherwise negotiated with the affected landowner. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.3.18 Restoration

The Permittee shall restore the right-of-way, temporary workspaces, access roads, abandoned right-of-way, and other public or private lands affected by construction of the Transmission Facility. Restoration within the right-of-way must be compatible with the safe operation, maintenance, and inspection of the transmission line. Within 60 days after completion of all restoration activities, the Permittee shall file with the Commission a Notice of Restoration Completion.

5.3.19 Cleanup

The Permittee shall remove and properly dispose of all construction waste and scrap from the right-of-way and all premises on which construction activities were conducted upon completion of each task. The Permittee shall remove and properly dispose of all personal litter, including bottles, cans, and paper from construction activities daily.

5.3.20 Pollution and Hazardous Wastes

The Permittee shall take all appropriate precautions to protect against pollution of the environment. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all waste generated during construction and restoration of the Transmission Facility.

5.3.21 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.4 Electrical Performance Standards

5.4.1 Grounding

The Permittee shall design, construct, and operate the transmission line in a manner so that the maximum induced steady-state short-circuit current shall be limited to five milliamperes root mean square (rms) alternating current between the ground and any non-stationary object within the right-of-way, including but not limited to large motor vehicles and agricultural equipment. All fixed metallic objects on or off the right-of-way, except electric fences that parallel or cross the right-of-way, shall be grounded to the extent necessary to limit the induced short-circuit current between ground and the object so as not to exceed one milliampere rms under steady state conditions of the transmission line and to comply with the ground fault conditions specified in the National Electric Safety Code. The Permittee shall address and rectify any induced current problems that arise during transmission line operation.

5.4.2 Electric Field

The Permittee shall design, construct, and operate the transmission line in such a manner that the electric field measured one meter above ground level immediately below the transmission line shall not exceed 8.0 kV/m rms.

5.4.3 Interference with Communication Devices

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the Transmission Facility, the Permittee shall take whatever action is necessary to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the Transmission Facility. The Permittee shall keep records of compliance with this section and provide them upon the request of Department of Commerce staff or Commission staff.

5.5 Other Requirements

5.5.1 Safety Codes and Design Requirements

The Permittee shall design the transmission line and associated facilities to meet or exceed all relevant local and state codes, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. This includes standards relating to clearances to ground, clearance to crossing utilities, clearance to buildings, strength of materials, clearances over roadways, right-of-way widths, and permit requirements.

5.5.2 Other Permits and Regulations

The Permittee shall comply with all applicable state statutes and rules. The Permittee shall obtain all required permits for the Transmission Facility and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations.

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission an Other Permits and Regulations Submittal that contains a detailed status of all permits, authorizations, and approvals that have been applied for specific to the Transmission Facility. The Other Permits and Regulations Submittal shall also include the permitting agency name; the name of the permit, authorization, or approval being sought; contact person and contact information for the permitting agency or authority; brief description of why the permit, authorization, or approval is needed; application submittal date; and the date the permit, authorization, or approval was issued or is anticipated to be issued.

The Permittee shall demonstrate that it has obtained all necessary permits, authorizations, and approvals by filing an affidavit stating as such and an updated Other Permits and Regulations Submittal prior to commencing construction. The Permittee shall provide a copy of any such

permits, authorizations, and approvals at the request of Department of Commerce staff or Commission staff.

6 SPECIAL CONDITIONS

The special conditions shall take precedence over other conditions of this permit should there be a conflict.

~~[Add Special Conditions in accordance with the record of the docket]~~

6.1 Karst Geology

The Permittee shall conduct a geotechnical investigation for the transmission line right-of-way to determine the presence of sinkholes or sinkhole development. If a sinkhole is identified, the Permittee shall confer with the Minnesota Department of Natural Resources and develop a Karst Contingency Plan. The Plan and Profile submitted under Section 9.2 of this permit shall indicate any structures that have been located or shifted due to a sinkhole or sinkhole development.

6.2 Northern Long-Eared Bats

The Permittee will coordinate with the U.S. Fish and Wildlife Service regarding the timing of tree-clearing and any other construction or restoration actions that may impact the Northern Long Eared Bat. The Permittee shall keep records of compliance with this section and provide them upon the request of Commission staff.

6.3 Dust Control

The Permittee shall utilize non-chloride products for onsite dust control during construction.

6.4 Wildlife-Friendly Erosion Control

The Permittee shall use only “bio-netting” or “natural netting” types of erosion control materials and mulch products without synthetic (plastic) fiber additives.

7 DELAY IN CONSTRUCTION

If the Permittee has not commenced construction or improvement of the route within four years after the date of issuance of this route permit the Permittee shall file a Failure to Construct Report and the Commission shall consider suspension of this route permit in accordance with Minn. R. 7850.4700.

8 COMPLAINT PROCEDURES

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the complaint procedures that will be used to receive and respond to complaints. The complaint procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this route permit.

Upon request, the Permittee shall assist Department of Commerce staff or Commission staff with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

9 COMPLIANCE REQUIREMENTS

Failure to timely and properly make compliance filings required by this route permit is a failure to comply with the conditions of this route permit. Compliance filings must be electronically filed with the Commission.

9.1 Pre-Construction Meeting

Prior to the start of construction, the Permittee shall participate in a pre-construction meeting with Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the anticipated construction start date.

9.2 Plan and Profile

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission, and provide the Department of Commerce, and the counties where the Transmission Facility, or portion of the Transmission Facility, will be constructed with a plan and profile of the right-of-way and the specifications and drawings for right-of-way preparation, construction, structure specifications and locations, cleanup, and restoration for the Transmission Facility. The documentation shall include maps depicting the plan and profile including the right-of-way, alignment, and structures in relation to the route and alignment approved per this route permit.

The Permittee may not commence construction until the earlier of (i) 30 days after the pre-construction meeting or (ii) or until the Commission staff has notified the Permittee in writing

that it has completed its review of the documents and determined that the planned construction is consistent with this route permit.

If the Commission notifies the Permittee in writing within 30 days after the pre-construction meeting that it has completed its review of the documents and planned construction, and finds that the planned construction is not consistent with this route permit, the Permittee may submit additional and/or revised documentation and may not commence construction until the Commission has notified the Permittee in writing that it has determined that the planned construction is consistent with this route permit.

If the Permittee intends to make any significant changes in its plan and profile or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department of Commerce, and county staff at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this route permit.

9.3 Status Reports

The Permittee shall file with the Commission monthly Construction Status Reports beginning with the pre-construction meeting and until completion of restoration. Construction Status Reports shall describe construction activities and progress, activities undertaken in compliance with this route permit, and shall include text and photographs.

If the Permittee does not commence construction of the Transmission Facility within six months of this route permit issuance, the Permittee shall file with the Commission Pre-Construction Status Reports on the anticipated timing of construction every six months beginning with the issuance of this route permit until the pre-construction meeting.

9.4 In-Service Date

At least three days before the Transmission Facility is to be placed into service, the Permittee shall notify the Commission of the date on which the Transmission Facility will be placed into service and the date on which construction was completed.

9.5 As-Builts

Within 90 days after completion of construction, the Permittee shall submit to the Commission copies of all final as-built plans and specifications developed during the Transmission Facility construction.

9.6 GPS Data

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (*e.g.*, ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the Transmission Facility and each substation connected.

9.7 Right of Entry

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety standards:

(a) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations.
(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations.
(c) To sample and monitor upon the facilities easement of the property.
To examine and copy any documents pertaining to compliance with the conditions of this route permit.

10 ROUTE PERMIT AMENDMENT

This route permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this route permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required under Minn. R. 7850.4900.

11 TRANSFER OF ROUTE PERMIT

The Permittee may request at any time that the Commission transfer this route permit to another person or entity (transferee). In its request, the Permittee must provide the Commission with:

(a) the name and description of the transferee;
(b) the reasons for the transfer;
(c) a description of the facilities affected; and
(d) the proposed effective date of the transfer.

The transferee must provide the Commission with a certification that it has read, understands and is able to comply with the plans and procedures filed for the Transmission Facility and all conditions of this route permit. The Commission may authorize transfer of the route permit after affording the Permittee, the transferee, and interested persons such process as is required under Minn. R. 7850.5000.

12 REVOCATION OR SUSPENSION OF ROUTE PERMIT

The Commission may initiate action to revoke or suspend this route permit at any time. The Commission shall act in accordance with the requirements of Minn. R. 7850.5100, to revoke or suspend this route permit.

Appendix F

Electric and Magnetic Fields Supplement

Appendix F Electric and Magnetic Fields Supplement

There is concern about the potential for adverse health effects from exposure to electric and magnetic Fields (EMF) as the result of residing near high voltage transmission lines (HVTLs). Extremely low-frequency (ELF) - EMF that is emitted from HVTLs does not have the energy to ionize molecules or to heat them; however, they are fields of energy and thus have the potential to produce effects.

In the 1970s, epidemiological studies indicated a possible association between childhood leukemia and EMF levels. Since then, various types of research, including animal studies, epidemiological studies, clinical studies and cellular studies, have been conducted to examine the potential health effects of EMF. Scientific panels and commissions have reviewed and studied this research data. These studies have been conducted by, among others, the National Institute of Environmental Health Sciences (NIEHS), the World Health Organization (WHO), the International Agency for Research on Cancer (IARC), the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) and the Minnesota State Interagency Working Group (MSIWG). In general, these studies concur that:

- Based on epidemiological studies, there is a weak association between childhood leukemia and EMF exposure. There is however no consistent association between EMF exposure and other diseases in children or adults.

- Laboratory, animal, and cellular studies fail to show a cause and effect relationship between disease and EMF exposure at common EMF levels. A biological mechanism for how EMFs might cause disease has not been established.

Because a cause and effect relationship cannot be established, yet a weak association between childhood leukemia and EMF exposure has been shown: 1) the potential health effects of EMF are uncertain; 2) no methodology for estimating health effects based on EMF exposure exists; 3) further study of the potential health effects of EMF is needed; and 4) a precautionary approach, including regulations and guidelines, is needed in designing and using all electrical devices.

Researchers continue to study potential health effects related to ELF-EMF and potential causal mechanisms. The following sections provide brief summaries from scientific panels and commissions that have examined the potential health impacts of ELF-EMF.

In 1992, the U.S. Congress authorized the Electric and Magnetic Fields Research and Public Information Dissemination Program (EMF-RAPID program). Congress instructed NIEHS and the U.S. Department of Energy to direct and manage a program of research and analysis aimed at providing scientific evidence to clarify the potential for health risk from exposure to ELF-EMF. The program provided the following conclusions to Congress (NIEHS 1999, reference F1):

- “The scientific evidence suggesting that ELF-EMF exposures pose any health risk is weak.

- Epidemiological studies have serious limitations in their ability to demonstrate a cause and effect relationship whereas laboratory studies, by design, can clearly show that cause and effect are possible. Virtually all of the laboratory evidence in animals and humans and most of the mechanistic work done in cells fail to support a causal relationship between exposure to ELF-EMF at environmental levels and changes in biological function or disease status. The lack of consistent positive findings in animal or mechanistic studies weakens the belief that this

association (the epidemiological association between ELF-EMF and childhood leukemia) is actually due to ELF-EMFs but it cannot completely discount the epidemiological findings.

- The NIEHS concludes that ELF-EMF exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. In our opinion, this finding is insufficient to warrant aggressive regulatory concern. However, because virtually everyone in the United States uses electricity and therefore is routinely exposed to ELF-EMF, passive regulatory action is warranted such as a continued emphasis on education both the public and regulated community on means aimed at reducing exposures. The NIEHS does not believe that other cancers or non-cancer outcomes provide sufficient evidence of a risk to currently warrant concern."

In 2002, the EMF-RAPID program published a detailed question and answer pamphlet summarizing research on ELF-EMF and potential health effects. The pamphlet is available at: http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

World Health Organization

In 1996, the WHO established the International EMF Project to study the potential health impacts of EMF. The project develops and disseminates information on EMF and public health. In 2007, the WHO issued an environmental health monograph on ELF-EMF (WHO 2007, reference F2). The monograph concluded:

- "Scientific evidence suggesting that everyday, chronic low-intensity (above 0.3 – 0.4 μT) power-frequency magnetic field exposure poses a health risk is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia. Uncertainties in the hazard assessment include the role that control selection bias and exposure misclassification might have on the observed relationship between magnetic fields and childhood leukemia. In addition, virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level ELF magnetic fields and changes in biological function or disease status. Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern.

- A number of other diseases have been investigated for the possible association with ELF magnetic field exposures. These include cancers in children and adults, depression, suicide, reproductive dysfunction, developmental disorders, immunological modifications and neurological disease. The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease.

- The use of precautionary approaches is warranted. However, electric power brings obvious health, social and economic benefits and precautionary approaches should not compromise these benefits. Furthermore, given both weakness of the evidence for a link between exposure to ELF magnetic fields and childhood leukemia and the limited impacted on public health if there is a link, the benefits of exposure reduction on health are unclear. Thus, the costs of precautionary measures should be very low. The costs of implementing exposure reductions would vary from one country to another, making it very difficult to provide general recommendation for balancing the costs against the potential risk from ELF fields."

International Agency for Research on Cancer

Since 1969, the IARC has been evaluating the carcinogenic risks of chemicals and other agents, such as viruses and radiation. In 2001, the IARC convened a working group of scientists to evaluate possible carcinogenic risks to humans from exposure to EMF (IARC 2002, reference F3). These scientists concluded that ELF magnetic fields are possibly carcinogenic to humans (a "Group 2B carcinogen"). Group 2B carcinogens are agents for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence for carcinogenicity in experimental animals. The working group concluded:

- "Since the first report suggesting an association between residential ELF electric and magnetic fields and childhood leukemia was published in 1979, dozens of increasingly sophisticated studies have examined this association. In addition, there have been numerous comprehensive review, meta-analyses and two recent pooled analyses. In one pooled analysis…no excess risk was seen for exposure to ELF magnetic fields below 0.4 μT and a twofold excess risk was seen for exposure above 0.4 μT. [In the other study] a relative risk of 1.7 for exposure above 0.3 μT was reported.

- No consistent relationship has been seen in studies of childhood brain tumors or cancers at other sites and residential ELF electric and magnetic fields.

- While a number of studies are available, reliable data on adult cancer and residential exposure to ELF electric and magnetic fields, including the use of appliances, are sparse and methodologically limited…. Although there have been considerable number of reports, a consistent association between residential exposure and adult leukemia and brain cancer has not been established."

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)

The SCENIHR serves as an advisory committee to the European Commission. At the request of the Commission, the SCENIHR reviewed possible adverse health impacts due to EMF. In 2007, the committee concluded (SCENIHR 2007, reference F4):

- "The previous conclusion (by a prior advisory committee, the Scientific Committee on Toxicity, Ecotoxicity and the Environment, CSTEE) that ELF magnetic fields are possibly carcinogenic, chiefly based on occurrence of childhood leukemia, is still valid. For breast cancer and cardiovascular disease, recent research has indicated that an association is unlikely. For neurodegenerative diseases and brain tumors, the link to ELF fields remains uncertain."

- In vitro studies have documented that that low intensity ELF can inhibit the anti-proliferative effect of tamoxifen on a specific subclone of human MCF-7 breast cancer cells (Blackman et al. 2001, reference F5; Ishido et al. 2001, reference F6; Girgert et al. 2005, reference F7). There is a need for independent replication of certain studies suggesting genotoxic effects and for better understanding of combined effects of ELF magnetic fields with other agents, their effects on free radical homeostasis, as well as of the possible implications of ELF field inhibition of tamoxifen effects.

In 2009, the committee updated its prior opinion after reviewing new studies of ELF-EMF (SCENIHR 2009, reference F8) and concluded:

- "The new information available is not sufficient to changes the conclusions of the 2007 opinion. The few new epidemiological and animal studies that have addressed ELF exposure and cancer do not change the previous assessment that ELF magnetic fields are a possible carcinogen and might contribute to an increase in childhood leukemia. At present, in vitro studies did not provide a mechanistic explanation of this epidemiological finding.

- New epidemiological studies indicate a possible increase in Alzheimer's disease arising from exposure to ELF. Further epidemiological and laboratory investigations of this observation are needed."

- There remains a need for independent replication of certain studies suggesting genotoxic effects and for better understanding of combined effects of ELF magnetic fields with other agents, their effects on free radical homeostasis, as well as of the possible implications of ELF field inhibition of tamoxifen effects.

Minnesota State Interagency Working Group (MSIWG)

In 2002, the MSIWG on EMF issues was formed to examine the potential health impacts of EMF and to provide science-based information to policy makers in Minnesota. Working group members included representatives from the Department of Commerce, Department of Health, Pollution Control Agency, Public Utilities Commission, and Environmental Quality Board. The working group issued a white paper entitled "A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options" (MSIWG on EMF Issues 2002, reference F9). The white paper concluded:

- "Some epidemiological results do show a weak but consistent association between childhood leukemia and increasing exposure to EMF... However, epidemiological studies alone are considered insufficient for concluding that a cause and effect relationship exists and the association must be supported by data from laboratory studies. Existing laboratory studies have not substantiated this relationship… nor have scientists been able to understand the biological mechanism of how EMF could cause adverse effects. In addition, epidemiological studies of various other diseases, in both children and adults, have failed to show any consistent pattern of harm from EMF.

- The Minnesota Department of Health concludes that the current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects. However, as with many other environmental health issues, the possibility of a health risk from EMF cannot be dismissed. Construction of new generation and transmission facilities to meet increasing electrical needs in the state is likely to increase exposure to EMF and public concern regarding potential adverse health effects.

- Based on its review, the Work Group believes the most appropriate public health policy is to take a prudent avoidance approach to regulating EMF. Based upon this approach, policy recommendations of the Work Group include:

    - Apply low-cost EMF mitigation options in electric infrastructure construction projects;

    - Encourage conservation;

    - Encourage distributed generation;

    - Continue to monitor EMF research;

- Encourage utilities to work with customers on household EMF issues; and
- Provide public education on EMF issues."

References

F1. National Institute of Environmental Health Sciences, 1999. NIEHS Report on Health Effects from Exposure to Power-line Frequency Electric and Magnetic Fields. NIH Publication No. 99-4493

F2. World Health Organization, 2007. Environmental Health Criteria 238 (2007): Extremely Low Frequency (ELF) Fields. ISBN 978-92-4-157238-5

F3. International Agency for Research on Cancer, 2002. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Volume 80. Non-Ionizing Radiation, Part 1: Static and Extremely Low-Frequency (ELF) Electric and Magnetic Fields. Summary of Data Reported and Evaluation

F4. Scientific Committee on Emerging and Newly Identified Health Risks, 2007. Possible Effects of Electromagnetic Fields (EMF) on Human Health. Accessed November 2018 at: http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_007.pdf

F5. Blackman, C. F., Benane, S. G., & House, D. E. (2001). The Influence of 1.2 µT, 60 Hz Magnetic Fields on Melatonin- and Tamoxifen-Induced Inhibition of MCF-7 Cell Growth. Bioelectromagnetics (22), pp. 122-128.

F6. Ishido, M., Nitta, H., & Kabuto, M. (2001). Magnetic fields (MF) of 50 Hz at 1.2 µT as well as 100 µT cause uncoupling of inhibitory pathways of adenylyl cyclase mediated by melatonin 1a receptor in MF-sensitive MCF-7 cells. Carcinogenesis, 22(7), pp. 1043-1048.

F7. Girgert, R., Schimming, H., Korner, W., Grundker, C., & Hanf, V. (2005). Induction of tamoxifen resistance in breast cancer cells by ELF electromagnetic fields. Biochemical and Biophysical Research Communications (336), pp. 1144–1149.

F8. Scientific Committee on Emerging and Newly Identified Health Risks, 2009. Health Effects of Exposure to EMF. Accessed November 2018 at: http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf

F9. The Minnesota State Interagency Working Group on EMF Issues, 2002. A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options. Accessed November 2018 at: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7B474587DD-E5C5-4A6E-95BC-7BC805CE4975%7D&documentTitle=20101-45731-07

Appendix G

IPaC Letter

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

In Reply Refer To: 02/28/2025 17:57:11 UTC
Project Code: 2025-0062558
Project Name: Beaver Creek EA

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 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 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.

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. For bat activity dates, please review Appendix L in the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines.

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 northern long-eared bat and tricolored bat range-wide 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. Additional information about available tools can be found 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. It is the responsibility of the project proponent to survey the area for any migratory bird nests. If there is an eagle nest on-site while work is on-going, eagles may be disturbed. We recommend avoiding and minimizing disturbance to eagles whenever practicable. If you cannot avoid eagle disturbance, you may seek a permit. A nest take permit is always required for removal, relocation, or obstruction of an eagle nest. 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
- Bald & Golden Eagles
- 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

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:

Illinois-Iowa Ecological Services Field Office
Illinois & Iowa Ecological Services Field Office
1511 47th Ave
Moline, IL 61265-7022
(309) 757-5800

PROJECT SUMMARY

Project Code: 2025-0062558
Project Name: Beaver Creek EA
Project Type: Distribution Line - New Construction - Above Ground
Project Description: Description: The proposed project is being developed by Dairyland Power. The project is a 161 kV transmission line located along 171st Avenue within York Township in Filmore County, Minnesota and would travel approximately 3.5 miles through agricultural and residential land, connecting with existing infrastructure at the north end and crossing over the Minnesota border at the south end. The proposed project continues for an additional 6.5 miles in Iowa. The majority of impacts for this project are new to the area.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.5286947,-92.3094855112822,14z

Counties: Iowa and Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 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.

---

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

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

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

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
Western Prairie Fringed Orchid *Platanthera praeclara* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1669	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.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

---

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

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information

on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
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. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

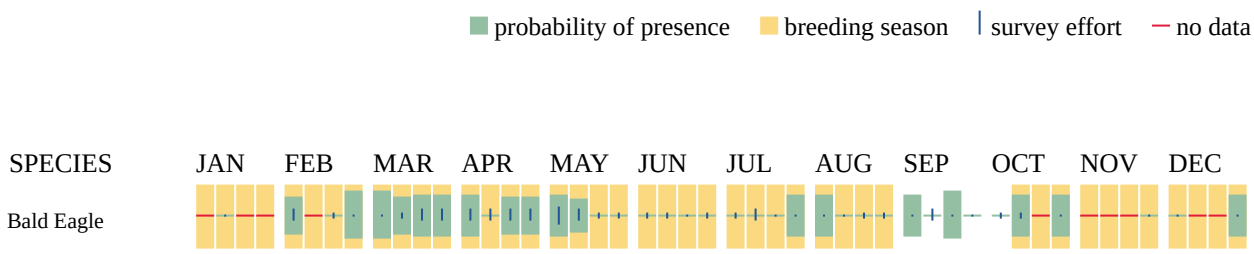
Probability of Presence (▪)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Non-BCC
Vulnerable

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

---

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)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
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. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
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

NAME	BREEDING SEASON
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	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. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Grasshopper Sparrow *Ammodramus savannarum perpallidus* 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/8329	Breeds Jun 1 to Aug 20
Henslow's Sparrow *Centronyx 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
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
Prairie Loggerhead Shrike *Lanius ludovicianus excubitorides* 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/8833	Breeds Feb 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. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* 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/9478	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	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 "Supplemental

Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

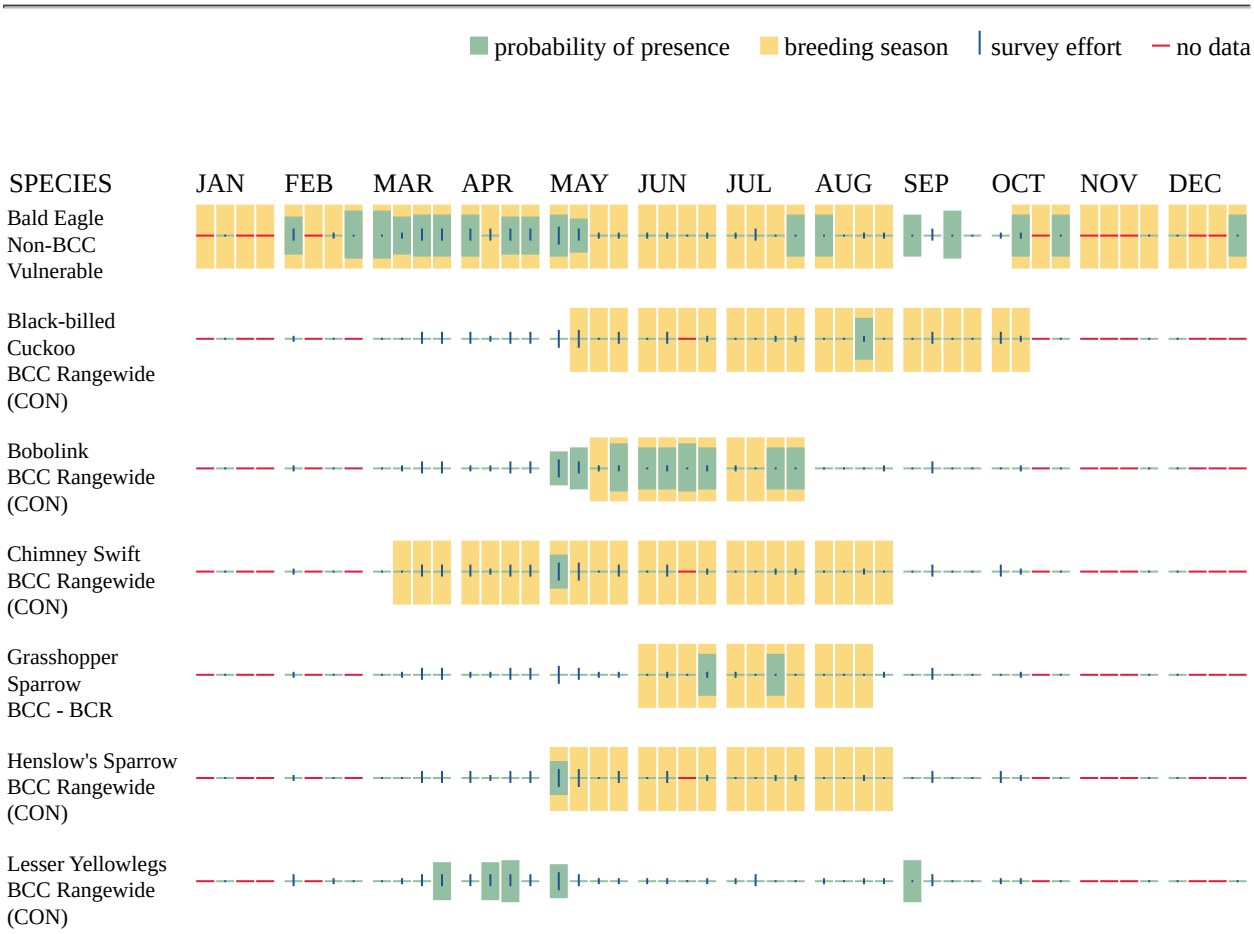
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

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



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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.

RIVERINE

- R4SBC
- R4SBCx

FRESHWATER EMERGENT WETLAND

- PEM1Af
- PEM1A
- PEM1C
- PEM1Cx

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Alison McClear
Address: 3005 Boardwalk Drive, Suite100
City: Ann Arbor
State: MI
Zip: 48108
Email amcclear@barr.com
Phone: 7349224474

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: 04/09/2025 21:16:55 UTC
Project code: 2025-0062558
Project Name: Beaver Creek EA

Federal Nexus: yes
Federal Action Agency (if applicable): Minnesota Department of Commerce

Subject: Technical assistance for 'Beaver Creek EA'

Dear Alison McClear:

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 April 09, 2025, for 'Beaver Creek EA' (here forward, Project). This project has been assigned Project Code 2025-0062558 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 and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter.**

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based on your IPaC submission and a standing analysis completed by the Service, you determined the proposed Project will have the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	May affect

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

The IPaC-assisted determination key for the northern long-eared bat and tricolored 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* Proposed Threatened
- Prairie Bush-clover *Lespedeza leptostachya* Threatened
- Western Prairie Fringed Orchid *Platanthera praeclara* Threatened
- 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 species listed above.

Conclusion

Consultation with the Service is not complete. Further consultation or coordination with the Service is necessary for those species or designated critical habitats with a determination of "May Affect." A "May Affect" determination in this key indicates that the project, as entered, is not consistent with the questions in the key. Not all projects that reach a "May Affect" determination are anticipated to result in adverse impacts to listed species. These projects may result in a "No Effect", "May Affect, Not Likely to Adversely Affect", or "May Affect, Likely to Adversely Affect" determination depending on the details of the project. Please contact our Assistant Regional Director-Ecological Services to discuss methods to avoid or minimize potential adverse effects to those species or designated critical habitats.

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

1. Name

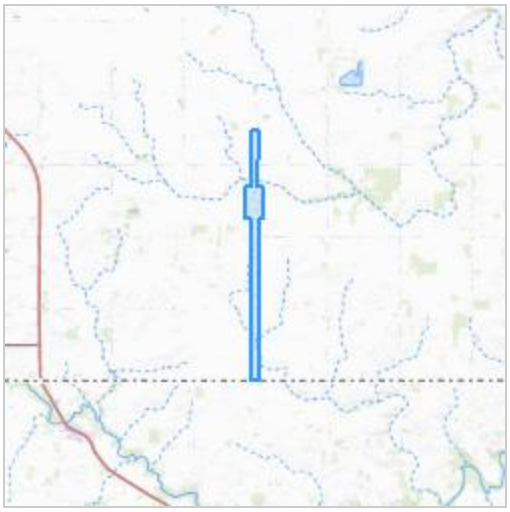
Beaver Creek EA

2. Description

The following description was provided for the project 'Beaver Creek EA':

> Description: The proposed project is being developed by Dairyland Power. The project is a 161 kV transmission line located along 171st Avenue within York Township in Filmore County, Minnesota and would travel approximately 3.5 miles through agricultural and residential land, connecting with existing infrastructure at the north end and crossing over the Minnesota border at the south end. The proposed project continues for an additional 6.5 miles in Iowa. The majority of impacts for this project are new to the area.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.525706,-92.3094675139395,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats 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. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, 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

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

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

12. Does the action area contain (1) talus or (2) anthropogenic or naturally formed rock shelters or crevices in rocky outcrops, rock faces or cliffs?

    No

13. Will the action cause effects to a bridge?

    Note: Covered bridges should be considered as bridges in this question.

    No

14. Will the action result in effects to a culvert or tunnel at any time of year?

    No

15. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

16. Does the action include the intentional exclusion of bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

17. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

18. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic permanently or temporarily on one or more existing roads?

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

    No

20. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

21. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

22. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

23. Will the action include drilling or blasting?

    No

24. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    No

25. Will the proposed action involve the use of herbicides or other pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    Yes

26. Will the action include or result in herbicide use that may affect suitable summer habitat for the northern long-eared bat or tricolored bat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

27. Will the action include or cause the application or drift of pesticides (e.g., fungicides, insecticides, or rodenticides) into forested areas that are suitable summer habitat for the northern long-eared bat or tricolored bat?

    Answer "Yes" if the application may result in transport (e.g., in water) or aerial drift of the pesticide into forested areas that are suitable summer habitat for the northern long-eared bat or tricolored bat.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

28. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

29. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

30. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

31. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

    No

32. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

    No

33. Does the project intersect with the 0- 9.9% forest density category?

    Automatically answered
    Yes

34. Does the project intersect with the 10.0- 19.9% forest density category map?

    Automatically answered
    No

35. Does the project intersect with the 20.0- 29.9% forest density category map?

    Automatically answered
    No

36. Does the project intersect with the 30.0- 100% forest density category map?

    Automatically answered
    No

37. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 0.5 acre in total extent?

    Yes

38. Does the action area intersect the northern long-eared bat species list area?

    Automatically answered
    Yes

39. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats?

    Automatically answered
    No

40. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

41. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
If unsure, answer "Yes."

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

42. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.0

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Alison McClear
Address: 3005 Boardwalk Drive, Suite100
City: Ann Arbor
State: MI
Zip: 48108
Email amcclear@barr.com
Phone: 7349224474

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Minnesota Department of Commerce

Appendix H

Minnesota Department of Natural Resources Letter Regarding Natural Heritage Review of the proposed Beaver Creek Project

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

May 24, 2024

Nicole Pahl
HDR Inc

RE: Natural Heritage Review of the proposed **Beaver Creek 161 kV transmission Project,**
T101N R12W Sect. 17, 18, 19, 20, 29, 30, 31, & 32, T101N R13W Sect. 13, 24, 25, & 36; Fillmore County

Dear Nicole Pahl,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2024-00334** in the email subject line.

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

- A **calcareous** fen (*Chester fen, ID#9623*) with edible valerian (*Valeriana edulis* var. *ciliata*), a state-listed threatened plant species, has been documented within the vicinity of the proposed project area. A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota. The Wetlands Conservation Act (WCA), authorized by Minnesota Statutes, section 103G.223, states that calcareous fens may not be filled, drained, or otherwise degraded, wholly or partially, by any activity, except as provided for in a management plan approved by the commissioner of the Department of Natural Resources. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away. For more information regarding calcareous fens, please see the Calcareous Fen Fact Sheet. To minimize stormwater impacts, please refer to the Minnesota Pollution Control Agency's General Principles for Erosion Prevention and Sediment Control in the Minnesota Stormwater Manual. Please note that calcareous fens are "Special Waters" and a buffer zone may be required.

Calcareous fens may be impacted by activities within the fen, activities that affect surface water flows (e.g., stormwater flow, erosion), or activities that affect groundwater hydrology (e.g., groundwater pumping, contamination, or discharge). Given the project details, impacts are not anticipated. **If the proposed project will alter the hydrological conditions in the surrounding area,** contact the Calcareous Fen Program Coordinator, Keylor Andrews (Keylor.Andrews@state.mn.us). A botanical survey may be needed if there are hydrological impacts to the fen.

State-listed Species

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**

- 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.

Federally Protected Species

- To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish and Wildlife Service's (USFWS) online Information for Planning and Consultation (IPaC) tool.

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,

Molly Barrett

Digitally signed by Molly Barrett
Date: 2024.05.24 16:14:21 -05'00'

Molly Barrett
Natural Heritage Review Specialist
Molly.Barrett@state.mn.us

Cc: Melissa Collins, Regional Environmental Assessment Ecologist, Central (Region 3)
Cc: Keylor Andrews, Calcareous Fen Program Coordinator

Appendix I

Property Value Supplement

Property Value Supplement

Attempts to correlate proximity to transmission lines with impacts to property values are complicated by the interaction of several relevant factors, including geographic region, land use, variability in perceptions over time, and limited sales data for similar properties before and after the construction of transmission lines. Researchers have generally used survey-based techniques and statistical analyses to make inferences and draw conclusions about the relationship between transmission lines and property values. In general, surveys provide useful insights for estimating price effects based on public opinion, yielding what researchers refer to as "stated preferences." Statistical analyses, on the other hand, reflect the actual behavior of property buyers and sellers in terms of recorded sales prices, providing what researchers refer to as the "revealed preferences." In other words, there is often incongruity between what people think and how they actually behave. Measuring both perceptions and actual behaviors helps researchers understand the relationship between transmission lines and property values.

A recent literature review (Jackson and Pitts 2010, reference 1) examined 17 studies on the relationship between transmission lines and property values to compare their results and to develop some general conclusions. The 17 studies, spanning the time period between 1956 and 2009, were compiled and reviewed by Real Property Analytics, Inc., a private firm specializing in the valuation of property potentially affected by external environmental factors. The Real Property Analytics review was published in the Journal of Real Estate Literature, which is a publication of the American Real Estate Society. The studies evaluated impacts from transmission lines ranging from 69 kilovolts (kV) to 345 kV. They were placed into one of three categories designated by the authors:

- Survey-based studies;
- Statistical sales-based analyses using multivariate analysis to isolate the impact of transmission lines by holding other variables statistically constant; and
- Sales-based analyses not using multivariate analysis but utilizing factors such as sale/resale analysis, price per square foot comparisons, case studies, and "paired sales" analysis, where the values of two homes that are similar in all respects except for proximity to transmission lines are compared.

Upon completion of their review of the studies, Jackson and Pitts (2010, reference 1) concluded the following:

> *"The studies reviewed…generally pointed to small or no effects on sales prices due to the presence of electric transmission lines. Some studies found an effect but this effect generally dissipated with time and distance. The effects that were found ranged from approximately 2% to 9%. Most studies found no effect and in some cases a premium was observed."*

Jackson and Pitts discussed the utility of both survey-based and statistically-based methods, quoting one of the research papers to note that statistical analyses "reflect what buyers and sellers actually do, opposed to what potential buyers say they might do, under specified hypothetical circumstances" Selected findings from Jackson and Pitts's literature review are provided below, along with the year and type of study:

Survey-based studies

- Kinnard, 1967 – Questionnaires were sent to property owners intersected by or abutting transmission line right-of-way (ROW) in 17 Connecticut subdivisions. Over 85 percent indicated

they would purchase again in the same location. Kinnard concluded that property value is not significantly affected by proximity to transmission lines.

- Morgan et al., 1985 – A questionnaire asked participants to rank the risk from transmission lines, electric blankets, and 14 other common hazards. Electric blankets and transmission lines were ranked as presenting the least risk. Participants were then provided with information on electric and magnetic fields (EMF) and associated potential health effects. Subsequent questionnaire responses indicated a change in perception and an increased concern about the risk of EMF.
- Solum, 1985 – Presented a questionnaire to 180 agricultural, recreational, or residential property owners in northwest Wisconsin whose land was encumbered by transmission lines. All three types had some level of concern over the proximity of the lines but for varying reasons. Further interviews indicated that all but one of the properties sold at a market price comparable to non-encumbered properties and that none of the buyers had reduced their purchase offers due to the presence of the transmission line.
- Delaney and Timmons, 1992 – Survey results from 219 real estate appraisers found that 84 percent believed that transmission line proximity results in an average ten percent lower market value. Ten percent of respondents found no effect and six percent thought transmission lines increased property value due to larger lots for similar price.
- Kung and Seagle, 1992 – Sent a questionnaire to homeowners in Memphis and Shelby Counties, Tennessee. Half of the respondents considered the transmission line an eyesore; however, 72 percent of those who thought the lines were an eyesore also said the lines had no effect on the purchase price. Prices of homes adjacent to the transmission line are similar to prices of other homes in the same neighborhood.
- Priestly and Evans, 1996 – Conducted a survey of 445 homeowners living near transmission lines in the San Francisco area. Eighty-seven percent of the 267 respondents felt the transmission line was a negative element in their neighborhood.

Statistical Sales Price Analyses

- Brown, 1976 – Conducted regression analysis on sales of farmland in Saskatchewan, Canada, between 1965 and 1970 and found that the relationship of land value to the number of power line structures was not statistically significant and that the lines did not negatively affect property value. Brown also found that the structures can be an impediment to farming operations.
- Colwell and Foley, 1979 – Examined 200 property sales over a ten-year period in Decatur, Illinois, and found that sales prices increase as distance from a transmission line increases. Property values were approximately six percent lower within 50 to 200 feet of the transmission line, but there was no difference in property value beyond 200 feet.
- Colwell, 1990 – Followed up the study above and confirmed that the selling price of residential property increases as distance from the transmission line increases. The rate of increase slows with distance and eventually disappears.
- Rigdon, 1991 – Evaluated 46 properties sold in Marquette County, Michigan over a five-year period and found no statistically significant relationship between sales price and proximity to a transmission line easement.
- Hamilton and Schwann, 1995 – Reviewed previous literature and found that transmission lines can reduce adjacent property values, but that the reduction is generally less than five percent of property value and that the reduction diminishes at 600 feet.
- Des Rosiers, 1998 – Reviewed property values of 507 homes in the Montreal area and found an average drop in property value of 9.6 percent for homes immediately adjacent to the line. He also

found an average increase of up to 9.2 percent in value for homes one to two lots away from the transmission line and no effect beyond 500 feet.

- Wolverton and Bottemiller, 2003 and Cowger, Bottemiller, and Cahill, 1996 – Two studies, both conducted in Portland, Vancouver, and Seattle, the 2003 work repeating the 1996 study with more rigorous analytical methods. Both applied statistical methods to paired-sales analysis and found no price effect on residential property from proximity to transmission lines. The data also show no difference in appreciation rates between homes near a transmission line and homes further away.
- Chalmers and Voorvaart, 2009 – Studied residential properties sold in Connecticut and Massachusetts between 1999 and 2007 and found proximity to transmission lines to have an insignificant effect on sales prices.

Sales-based analyses

- Carll, 1956 – Compared property values and interviewed owners, buyers, and brokers along a transmission line in Los Angeles and found that residences adjoining the ROW had not sold at a discount and that lenders did not adjust loan amounts for lots adjacent to the ROW.
- Bigras, 1964 – Reviewed over 1,900 deeds of sale and mortgages in Quebec and found that prices for vacant land adjacent to transmission lines were generally higher than the average price of all transactions. Land adjacent to transmission lines was sold faster and was developed to a higher degree than land away from the lines.

Jackson and Pitts (2010) concluded from these studies that proximity to transmission lines results in little or no effect on property value. In studies where transmission lines were found to have impacts to property values, the decrease in values typically ranged from approximately two percent to ten percent. In some instances, increases in property value were found. The following additional studies and reviews generally reach a similar conclusion.

Another recent meta-analysis, Brinkley and Leach (2019) evaluated 54 studies spanning 40 years. Their research found that half of the literature and studies on the impact of power lines concluded no effect on property values, and the other half showed a loss in property values of 2 to 10%. While home value studies showed mostly no price impacts, with effects ranging from a 2 to 9% decrease in price, some homes experienced a price premium. Half of the studies showed negative impacts with the range of 3-6%. Significant effects are noticeable to properties closer than 60 meters with an average decrease in value from 0.2 to 27.3%. Ranges of value impact within energy types show a great deal of uncertainty and many under-researched caveats in planning for energy infrastructure. For example, the impact of overhead powerlines is mixed, with results prefaced by access to viewsheds. The distance of maximal impact for powerlines was 200 meters, with a range of average value change of a 10% increase (if including improved access to greenspace) to a 30% decrease.

Brinkley and Leach (2019 found that studies after 1979 showed a more consistent reduction between 5-10%. Though many studies assert that visual impacts are the greatest predictor of property prices, the influence of buried power lines has yet to be assessed and so is not included in this meta-analysis. Research suggests that diminution in price for properties near the power lines tends to disappear anywhere from five to fourteen years after construction. This could be because of vegetation growth that acts as a cover. No studies conducted property value assessments in relation to community perception or knowledge about the development or involvement in job creation.

Thomas and Welke (2017) performed an event study to examine the revealed price effect on residential properties from an upgrade to high-voltage transmission towers that were constructed on an existing ROW. The study looked at a period of two years where existing 220 kV towers that were not in use were upgraded to 500 kV towers, then three years later, they were removed, and the lines were buried. They found a significant loss in value from the upgrade for encumbered (8.3%) and abutting (4.9%) properties, and insignificant losses when the older towers were present, even for lots with an easement. Their conclusions are consistent with previous studies that found the price impact is initially large but diminishes over time. Thomas and Welke (2017) concluded that their results were consistent with other research findings:

- Over time, price impact is diminished.
- Price impact effects vanish beyond about 100 meters.
- The proximate sales results are largely driven by abutting lots.
- Encumbered sales are significantly negatively affected and abutting properties somewhat less so.

They further found no evidence that public information prior to the construction of the towers affected sales prices, even if the property abutted or was encumbered by the ROW. They did find that the burying of the 500 kV cables required disruption to immediately proximate homeowners, but presumably at a much lower level than towers. More research would need to be done on effects post burying of the lines.

Between 1978 and 1982, Jensen and Weber and the Jensen Management Company conducted three studies in west-central Minnesota. The studies in 1978 and 1982 are of particular interest since they consider effects to agricultural land. The 1978 study found that the landowners cited an inconvenience to the presence of the line but had not paid less for their land (Weber and Jensen 1978, reference 2). The 1982 study, however, found there was a broad range of effects from no effect to a 20 percent reduction, which depended on the amount of disruption to farm operations (Jensen and Weber 1982, reference 3).

The David Wyman and Chris Mothorpe's study, "The Pricing of Power Lines: A Geospatial Approach to Measuring Residential Property Values" (Reference 8), examines the relationship between high-voltage transmission lines and vacant property prices in Pickens County, South Carolina, using geospatial techniques. Analyzing 5,455 vacant lot sales in Pickens County, South Carolina, the study concluded that the proximity and visibility of these lines (based on geospatial analysis techniques) influence property values. Vacant lots adjacent to power lines experienced an average price discount of 44.9 percent, while those non-adjacent vacant properties up to 1,000 feet away saw a price discount of 17.9 percent. Visibility, particularly of transmission towers, amplifies this effect, with properties that had an unobstructed view resulting in greater devaluation. They state that their findings are site-specific to this study, and caution that pricing discounts for vacant properties in rural settings may not be generalizable to complex suburban settings or properties with residential housing structures. This study was also limited to a sample that excluded parcels larger than 20 acres in size.

James A. Chalmers' study, "High-Voltage Transmission Lines and Rural, Western Real Estate Values," (Reference 7) investigates the impact of 500 kV transmission lines on property values of agricultural, residential, and recreational uses throughout 640 miles of Montana between 2000 and 2010. The study was done using a combination of 49 transactions and an even larger number of lot sales in 7 subdivisions. The study utilized personal interviews, sales comparisons, and paired sales techniques. The research found that three issues were dominant: Use, size, and substitutes. If the property was more heavily oriented to residential use - it was more vulnerable to transmission line impacts, whereas property-oriented more toward purely recreational use were much less vulnerable to impacts. Properties that were oriented to agricultural use showed no price effects of transmission lines. The larger the

property, the less vulnerable it was to impacts. There can be price and absorption (that is – the time it takes a property to sell) effects if there are alternative properties similar to the subjected property. If the property affected is relatively unique and the transmission line is one of several differentiating factors, the property is less vulnerable to price and absorption effects. The study emphasized that the market response to high-voltage lines varies greatly depending on location, property-specific factors, and the visibility of the lines.

In the final EIS on the Arrowhead-Weston Electric Transmission Line Project, the Wisconsin Public Service Commission (PSC) addressed the issue of property value changes associated with high-voltage transmission lines. This document summarized the findings of approximately 30 papers, articles, and court cases covering the period from 1987 through 1999. The Arrowhead-Weston EIS provides six general observations (reference 4):

- The potential reduction in sale price for single-family homes may range from zero to 14 percent.
- Adverse effects on the sale price of smaller properties could be greater than effects on the sale price of larger properties.
- Other amenities, such as proximity to school or jobs, lot size, square footage of a house, and neighborhood characteristics, tend to have a much greater effect on sale price than the presence of a power line.
- The adverse effects appear to diminish over time.
- Effects on sale price are most often observed for properties crossed by or immediately adjacent to a power line, but effects have also been observed for properties farther away from the line.
- The value of agricultural property is likely to decrease if the power line poles are placed in an area that inhibits farm operations.

The Arrowhead-Weston Electric Transmission Line Project environmental impact statement (EIS) reported that in Midwest states such as Minnesota, Wisconsin, and the Upper Peninsula of Michigan, the average decrease appears to be between four and seven percent. The EIS noted that it is very difficult to make predictions about how a specific transmission line would affect the value of specific properties.

An additional potential adverse effect of transmission lines on adjacent properties is on the ability of homeowners and developers to obtain Federal Housing Administration (FHA) and/or Housing and Urban Development (HUD) loans. Section 2.2(J) of the current HUD guidebook 4150.2 addresses this issue in the following FAQ:

> *FAQ: Is a property eligible for FHA if there are overhead or high-voltage power lines nearby?*
>
> *The appraiser must indicate whether the dwelling or related property improvements are located within the easement serving a high-voltage transmission line, radio/TV transmission tower, cell phone tower, microwave relay dish or tower, or satellite dish (radio, TV cable, etc.).*
>
> *1) If the dwelling or related property improvement is located within such an easement, the lender must obtain a letter from the owner or operator of the tower indicating that the dwelling and its related property improvements are not located within the tower's (engineered) fall distance in order to waive this requirement.*
>
> *2) If the dwelling and related property improvements are located outside the easement, the property is considered eligible and no further action is necessary. The appraiser, however, is*

instructed to note and comment on the effect on marketability resulting from the proximity to such site hazards and nuisances.

In general, and for the safe operation of the line, a residence cannot be located within a transmission line ROW; thus, all residences near the project would fall into category 2 (a dwelling located “outside the easement”). For this category, the HUD appraiser is directed to comment on any effects on marketability resulting from the transmission line. These comments could affect loan values if an appraiser believes the residence is nevertheless located so near the transmission line that the line could be a hazard or nuisance.

References

1. Jackson and Pitts, 2010. The Effects of Transmission Lines on Property Values: A Literature Review. Journal of Real Estate Literature. Volume 18, No 2.

2. Weber, William V. and Glenn A. Jensen. 1978. A Study of High Voltage Power Line Easements and their Effect on Farm Land Values in West Central Minnesota. Luverne, Minnesota: Jensen Management Service.

3. Jensen, Glenn A. and William V. Weber. 1982. High Voltage Transmission Lines and their Effect on Farm Land Value in West Central Minnesota. Luverne, Minnesota: Jensen Management Service, Inc.

4. Final Environmental Impact Statement, Arrowhead –Weston Electric Transmission Line Project, Volume I, Public Service Commission of Wisconsin Docket 05-CE-113, October 2000, pg 212-215.

5. Brinkley, Catherine and Leach, Andrew. 2019. Energy Next Door: A Meta-Analysis of Energy Infrastructure Impact on Housing Value. Energy Research & Social Science. DOI: 10.1016/j.erss.2018.11.014

6. Thomas, Charles and Welke, Gerd. 2017. The Effect of HVTLs on Property Values: An Event Study. International Real Estate Review. Volume 20, No 2.

7. Chalmers, James A., 2012. High-Voltage Transmission Lines and Rural, Western Real Estate Values. The Appraisal Journal. Volume 80, No. 3.

8. Wyman, David, and Mothorpe, Chris, 2018. The Pricing of Power Lines: A Geospatial Approach to Measuring Residential Property Values. Journal of Real Estate Research. Volume 40, No. 3.