



ENVIRONMENTAL CONSULTANTS

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TECHNICAL MEMORANDUM

To: Public Service Commission
600 East Boulevard Avenue, #408
Bismarck, North Dakota 58505

From: Aidan McCarty, Project Manager/Cultural Resources Team Lead

Date: June 4, 2021

Re: **Public Service Commission Request for Additional Information Regarding the Montana-Dakota Utilities 230-kV Transmission Line, Morton County, North Dakota / Case No. PU-21-151**

INTRODUCTION

On behalf of Montana-Dakota Utilities Co. (Montana-Dakota), and at the request of the North Dakota Public Service Commission (PSC), SWCA Environmental Consultants (SWCA) is providing answers to questions and responses for additional information for the proposed Mandan Reroute 230-kilovolt (kV) Transmission Line Project (project). On April 19, 2021, Montana-Dakota filed a siting application for the project. On May 18, 2021, the PSC provided a response requesting additional information or responses to 21 questions (Attachment A). This technical memorandum and supporting attachments provide the additional information requested for each of the 21 questions or items.

PSC QUESTIONS AND RESPONSES FOR ADDITIONAL INFORMATION

1. What is the width of the proposed corridor, the permanent right-of-way (ROW) and the temporary construction ROW?

The corridor is 200 feet wide and consists of the survey area used for the cultural resources field studies. The permanent ROW is typically 100 feet wide, except at dead-end structures, where it will be 160 × 160 feet. No temporary ROW is needed, as all work will be conducted within the permanent ROW. It is Montana-Dakota's understanding that a ROW is not required for the portions of the project located on land owned and managed by Montana-Dakota.

2. Please update “Figure 1: Project location map” to include the proposed corridor and provide associated GIS shapefile.

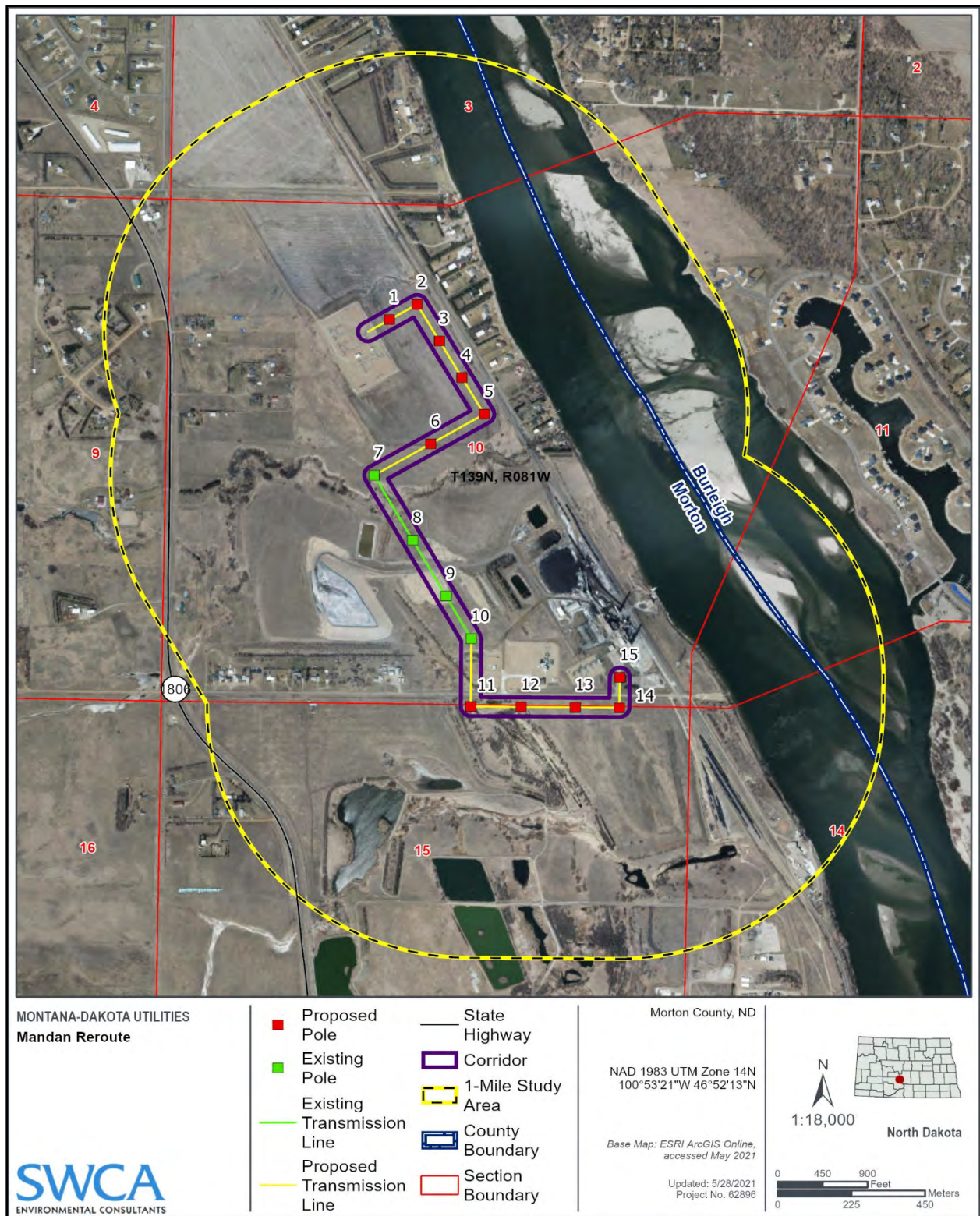


Figure 1. Project location map.

3. Provide all GIS shapefiles associated with “Figure 1: Project location map”.

Shapefiles are provided as a separate file.

4. Provide a copy on an eight and one-half-inch by eleven-inch black and white map suitable for newspaper publication depicting the site area.

Please see Attachment B.

5. Provide answers in tabular form to each element within NDAC section 69-06-05-01(2)(a)(7). If not applicable, indicate as such.

NDAC section 69-06-05-01(2)(a)(7)

Question	Answer
a. The width of the ROW	100 feet wide except at dead-end structures, where it will be 160 × 160 feet.
b. The approximate length of facility	1.5-mile-long section, 0.4 mile not being reroute.
c. The estimated span length	512 feet
d. The anticipated type of structure for electric facilities	H-frame structure, wooden pole
e. The voltage of electric facilities	230 kV
f. The requirement and the general location of any associated facilities	See Figure 1 above.
g. The estimated distance between surface structures for pipeline facilities	N/A
h. The pipe size for pipeline facilities	N/A
i. The maximum design operating pressure and temperature for pipeline facilities	N/A
j. The maximum design flow rate for pipeline facilities	N/A
k. The number and general location of compressor or pumping stations.	N/A

6. What is the maximum span between pole locations?

The maximum span length is 714 feet.

7. Where any pole locations placed to avoid sensitive areas, such as wetlands, waterbodies, woodlands, agricultural land, or geologically unstable areas?

Yes, Pole Structures 8 and 9 were placed to span a waterbody, and poles 11 and 12 were placed to maximize the span over potential wetlands and limit temporary and permanent impacts to wetlands resulting from the projects construction.

8. Describe how the company selected the pole locations in or near avoidance areas and wetlands.

Results of desktop analysis and cultural resources field surveys were used to identify potential avoidance areas and wetlands. Pole structures were placed to maximize avoidance to the extent possible.

9. Are guyed structures associated with this facility? If so, in which locations? How many guy wires will be required per structure, and how many feet from the pole structure will the anchors be located?

Yes, Poles 7, 10, and 14 will require guy wires (dead-end structures). It is anticipated that 20 guys (and associated anchors) will be required for each of the dead-end structures and will extend 50 to 85 feet from the structure.

10. Provide copies of the engineering design layouts associated with the facility.

Please see Attachment C

11. For each exclusion and avoidance area, a description and discussion of how the company determined there were no exclusion and only one avoidance area in (1) the survey area (field study), and (2) the study area (desktop surveys).

Exclusion Area Summary

Exclusion Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area	Crossed by Route
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	Yes, multiple historic sites are located within the Study Area.	Yes, one previously recorded historic site is located within the Survey Area.	One historic site is located within the Survey Corridor and crossed by the route. A Class III (Intensive) Inventory was conducted, and the results provided to the State Historical Society of North Dakota (SHPO). Project impacts within the site area will be superficial and not in excess of existing disturbance. The SHPO responded and agreed that there has been a good faith effort to avoid impacts to significant sites (see Attachment D).

Exclusion Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area	Crossed by Route
Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	Yes, multiple historic sites are located within the Study Area.	Yes, one previously recorded historic site is located within the Survey Area.	One historic site is located within the Survey Corridor. A Class III (Intensive) Inventory was conducted and the results provided to the SHPO. Project impacts within the site area will be superficial and not in excess of existing disturbance. The SHPO provided a response agreeing that there has been a good faith effort to avoid impacts to significant sites (see Attachment D).
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	No	No	No
Areas critical to the life stages of threatened or endangered animal or plant species.	No	N/A	No
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	No	N/A	No
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No	No	No
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.	No	No	No

Avoidance Area Summary

Avoidance Area	Present within 1-mile-wide Study Area	Present within 200-foot-wide Survey Area	Crossed by Route	>50% of Area Corridor Width
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	No	No	No	No
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	Yes, the Missouri River is located within the Study Area.	No	No	No
Historical resources which are not specifically designated as exclusion or avoidance areas.	No	No	No	No
Areas that are geologically unstable.	No	No	No	No
Within five hundred feet of a residence, school, or place of business.	Yes	Yes	Yes, six residences are located between 475 and 500 feet of the route. Montana-Dakota is working with landowners to obtain waiver of the 500-foot setback.	No
Reservoirs and municipal water supplies	No	No	No	No
Water sources for organized rural water districts.	No	No	No	No
Irrigated land. This criterion shall not apply to an underground transmission facility.	No	No	No	No
Areas of recreational significance which are not designated as exclusion areas	No	No	No	No

12. Page 4 of the Natural Resource Impacts Evaluation to the Environmental Resource Impacts Assessment indicates that “natural resource evaluations were completed for potential wetlands, federally listed threatened and endangered species, and species managed under the ND State Wildlife Action Plan.” What was the width of each field survey conducted? Provide copies of each of these evaluations with the Commission.

Natural resource evaluations consisted of desktop analysis and general reconnaissance within the 200-foot-wide corridor established for the cultural resource investigations. SWCA requested a USFWS Information for Planning and Consultation (IPaC) report for the study area. Natural resource evaluations were completed for potential wetlands, federally listed threatened and endangered species, and species managed under the North Dakota State Wildlife Action Plan. The completed evaluations were transmitted to the U.S. Army Corps of Engineers (USACE), the USFWS, and the North Dakota Game and Fish Department (NDGFD). The USFWS and NDGFD provided concurrence that impacts to federally listed threatened and endangered species and state-managed species from project activities are not anticipated. The location has been heavily impacted by industrial and residential development, and the proposed project is generally located along or within previously disturbed areas. No intensive natural resource field surveys were conducted due to the limited scope of the project. Wetlands will be avoided to the greatest extent possible, with no temporary or permanent impacts exceeding 0.1 acres.

13. For each selection criteria in NDAC 69-06-08-02, provide responses to how potential adverse effects resulting from the location, construction, and operation of the proposed facility will be managed and maintained at an acceptable...

Selection Criteria

Selection Criteria	Anticipated Impact	Mitigation
Agricultural production	No new permanent impacts are proposed within active cropland.	N/A
Family farms and ranches	No impacts to family farms or ranches are anticipated.	N/A
Land that the owner can demonstrate has soil, topography, drainage, and an available water supply that causes the land to be economically suitable for irrigation	No permanent impacts are anticipated to land suitable for irrigation.	N/A
Surface drainage patterns and ground water flow	No impacts to surface drainage patterns and groundwater flow are anticipated.	N/A
Sound-sensitive land uses	Residences near the project are understood to be noise sensitive. Minimal noise will occur during construction, but no long-term noise impacts are anticipated.	Montana-Dakota will limit construction activities to normal business hours to the extent possible. The expected work activities will result in minimal noise.

Selection Criteria	Anticipated Impact	Mitigation
The visual effect on the adjacent area	Minimal impacts are anticipated to the viewshed of nearby residences; however, the line is located in proximity to existing overhead electrical transmission line corridors and will result in no net change to the viewshed.	The project has been sited adjacent to existing overhead electrical transmission lines. The project vicinity has been heavily impacted by industrial development; therefore, no mitigation is proposed.
Extractive and storage resources	No permanent impacts are anticipated.	N/A
Wetlands, woodlands, and wooded areas	One pole structure (Pole 11) will be placed within a potential wetland area. Impacts are anticipated to be minimal and consistent with use of USACE Nationwide Permit 12, with self-reporting. Montana Dakota will span one waterbody, which will not be temporarily or permanently impacted.	Wetlands will be avoided to the extent practicable during the construction phase of the project. If USACE jurisdictional wetland impacts are unavoidable, then a Section 404 and 401 permit application will be submitted to the USACE and state of North Dakota, respectively. Permanent impacts to wetlands and waters will be mitigated according to regulatory requirements. Montana-Dakota will use best management practices during construction and operation of the transmission line to protect topsoil and adjacent wetland resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material, and revegetating disturbed areas with native species.
Radio and television reception, and other communication or electronic control facilities	No impacts to radio and television reception or other communication or electronic facilities are anticipated.	N/A
Human health and safety	No impacts to human health or safety are anticipated from the operation of the transmission line.	N/A
Animal health and safety	No impacts to livestock are anticipated from the operation of the transmission line. Raptors, waterfowl, and other bird species may be affected by the construction and placement of the transmission lines. Avian collisions are a possibility after completion of the transmission line. Waterfowl are typically more susceptible to transmission line collision, especially if the line is placed between agricultural fields that serve as feeding areas, or between wetlands and open water, which serve as resting areas. Generally, the most difficult part of the structure for the bird to see is the shield wire. Mitigation measures will minimize these impacts.	Montana-Dakota has implemented a company-wide Avian Protection Plan (APP) to minimize potential bird interactions with company-owned transmission lines. The APP incorporates recommendations from three reference documents: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006; Reducing Avian Collisions with Power Lines: The State of the Art in 2012; and 2005 Avian Protection Plan Guidelines.

Selection Criteria	Anticipated Impact	Mitigation
Plant life	Impacts to plant life are anticipated to be minimal and limited. Temporary impacts are associated with the traversing of the corridor by vehicles and equipment and the staging of materials adjacent to pole locations. Permanent impacts will be minimal at pole locations.	Montana-Dakota will restore/reclaim disturbed areas and will use regionally specific seed mixture for revegetation in non-agricultural areas. Disturbed agricultural areas will be decompacted and returned to pre-construction agricultural use.

14. Please address the policy criteria in NDAC 69-06-08-02

Policy Criteria

Policy Criteria	Suitable Policy or Practice
Location and design	Montana-Dakota's policy is to locate and design the proposed transmission line to minimize environmental impacts and utilize existing corridors where practical.
Training and utilization of available labor	Montana-Dakota will use local labor to the extent practicable.
Economies of construction and operation	Montana-Dakota will utilize local contractors to the extent practicable.
Use of citizen coordinating committees	Montana-Dakota has and will continue to work with landowners on development of the project.
A commitment of a portion of the transmitted product for use in this state	Montana-Dakota has and will continue to provide reliable power to customers throughout North Dakota using thousands of miles of transmission lines.
Labor relations	No labor relations will be affected.
The coordination of facilities	Existing facilities and facility corridors were considered in the location of the transmission line and its associated facility.
Monitoring impacts	Montana-Dakota and the construction contractor will employ best management practices during construction to minimize environmental impacts. Upon completion of the project, Montana-Dakota will monitor and address impacts as necessary.
Utilization of existing and proposed ROWs and corridors	One of the primary goals in locating the route was to maximize use of existing transmission and roadway corridors and ROWs. The proposed transmission line location is consistent with this policy and is the best location when considering the factors identified by the PSC, Montana-Dakota's policies, and project design.
Other existing or proposed transmission facilities	N/A

15. Provide a discussion of the company's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.

Montana-Dakota strives to maintain compliance and operate in an environmentally proactive manner, while taking into consideration the cost to customers. The company has an overarching Environmental Policy that supports and provides direction on environmental compliance. The policy states:

“The Company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are:

- To minimize waste and maximize resources;
- To be a good steward of the environment while providing high quality and reasonably priced products and services; and
- To comply with or surpass all applicable environmental laws, regulations and permit requirements.”

Also, the Montana-Dakota has a Protected Bird Management Policy that provides direction to the company on protecting and managing protected bird species, including reporting of bird mortalities associated with company infrastructure, provides direction to consult appropriately for permitting and nest management, and establishes an Avian Protection Plan. The Avian Protection Plan contains additional guidance and commitment from Montana-Dakota’s electric transmission and distribution operations on minimizing and reducing protected bird mortality in a manner that is consistent with the company’s need to provide reliable and cost-effective electric service to customers.

The company also has directives and/or procedures for other environmental compliance areas including, but not limited to, water discharge and infrastructure permitting, hazardous materials transportation, hazardous materials management and disposal, and spill response and remediation.

16. Provide a description of the ROW preparation and construction and reclamation procedures.

ROW Preparation

The project is located primarily within active agricultural field, along existing electrical transmission line corridors, and along existing road ROWs. Preparation will be minimal as no vegetation clearing is anticipated. No grading is anticipated for the preparation of the ROW.

Transmission Construction

Construction of the transmission line will begin once all approvals are obtained and easement acquisition is substantially complete. A construction schedule has been developed based on availability of materials, equipment, and construction labor. The schedule considers anticipated weather conditions.

Construction of the transmission line will require minimal preparation of the ROW and minimal grading or leveling. Transmission structures will be placed at existing grade elevations. Limited grading may be required to provide level and stable access paths and working surfaces for construction crews at selected structure and wire stringing locations. No extensive grading or leveling is anticipated at this time. Once construction is completed, the graded areas will be restored and blended with the pre-construction contours to the extent practicable.

Structures’ components will be delivered either to the staked location or to Montana-Dakota’s existing Heskett facility. They will be placed on the ROW out of the clear zone of any adjacent roadways or designated pathways. Insulators and other hardware will be attached while the structure is on the ground. After the ROW is prepared, structures will be assembled and erected at the structure site using a crane or similar heavy-duty equipment. Each pole will be directly embedded and will require a hole dug 12 to 15 feet deep and 3 to 5 feet in diameter. The poles will be set into the excavated hole and backfilled with soil or crushed rock. Structures in poor or wet soil conditions may require specially engineered foundations such as a steel culvert or cast in place with reinforced concrete foundations. Most of the construction

activity would be limited to the area immediately around each structure. Little additional ground disturbance is necessary at the structure sites. The total temporarily disturbed area in the vicinity of each structure is expected to be no more than 100 feet wide × 100 feet long or 10,000 square feet, or approximately 160 × 160 feet or 25,600 square feet for dead-end structures. No permanent access roads will be constructed for the project. However, temporary construction access roads will be needed within the ROW to access pole locations. Temporary construction access roads will utilize existing public and private roads where possible and will be 20 feet wide for the length of the ROW.

Once the structures have been erected, conductors will be installed by establishing stringing setup areas within the ROW. These areas are usually established every 2 miles along the route. Conductor stringing operations will require brief access to each structure to secure the conductor wire to the insulators or to install shield wire clamps once final sag is established. Stringing equipment generally consists of sheaves or stringing blocks, wire pullers, tensioners, rope and wire trailers, and a bulldozer used for sagging. Stringing operations involve pulling lightweight cables or ropes through the stringing sheaves located at every structure site. This cable or rope is then used to pull the conductors through the sheaves under sufficient tension to keep the conductor from coming into contact with the ground. Temporary guard structures or clearance poles will be installed as needed over existing distribution or communication lines, streets, roads, highways, or other obstructions after any necessary notifications are made and permits obtained. This ensures that conductors will not obstruct traffic or contact existing energized conductors or other cables. After pulling the conductor, shield wire, and optical ground wire (OPGW) to the proper tensions, construction crews access each structure to secure or clip the conductors to the insulators and clamp the shield wire and/or OPGW to the supporting hardware.

Reclamation/Restoration Procedures

During construction, crews will attempt to limit ground disturbance wherever possible and will employ appropriate erosion control measures. Disturbed areas will be restored to their pre-construction condition to the maximum extent practicable and as negotiated with the landowner. Post-construction reclamation activities include removing and disposing of debris, dismantling all temporary facilities (including laydown areas), leveling or filling tire ruts, and reseeding areas disturbed by construction activities with vegetation similar to that which was removed.

Erosion control measures will be implemented as necessary to minimize runoff during construction. Specific measures will be determined once a field review is made to determine any areas of concern. Erosion control measures such as silt fencing, straw wattle, mulching, seeding, or mesh fabric overlay will be installed as appropriate. Access routes to structure locations will be reviewed prior to the mobilization of equipment so that erosion can be avoided or minimized. Construction crews exercise caution when equipment is within 50 feet of streams and rivers and will not drive equipment through streams or rivers that the transmission line crosses.

17. Provide a table showing all permits required for the project, and the status of obtaining each.

Permit Required	Status
Morton County Utility Occupancy Permit	Obtained 5/25/2021
Nationwide Permit 12 (Clean Water Act)	Self-reporting

18. Provide a discussion of present and future natural resource development in the area.

Over the past 30 years, the project area and vicinity have been impacted by agricultural practices, residential development, and industrial development. The location is currently used for industrial purposes with residential development along the river and limited agricultural use on terraces overlooking the river, which is similar to past land use. The route has been sited along or adjacent to industrial facilities, and the soils and vegetation appear to have been disturbed for the purposes of cultivation or facility management and operation. Two segments of 230-kilovolt (kV) electrical transmission line are located within the city of Mandan, Morton County, North Dakota. The first segment is approximately 0.6 mile long and originates at the Mandan Substation. It will subsequently connect with an existing 230-kV transmission line approximately 900 feet south of the substation. Montana Dakota does not anticipate future development changes in the area. In the event that Montana-Dakota anticipates future development, they will engage the PSC.

19. Provide the following project controls documents.

A. SWPPP

Due to the size of the project, a stormwater pollution prevention plan is not required. Project disturbance is anticipated to be less than 0.5 acre.

B. Unanticipated Discovery Plan

Please see Attachment E.

C. Construction and Environmental Program Plan

Due to the size of the project, a project-specific environmental program plan was not developed.

D. Erosion Control Plan

The following commonly used erosion controls and practices will be implemented, as appropriate.

- Grade or extend terraces across slopes to prevent stormwater from flowing into the construction area and plant open areas with native grasses or low-growing plants soon after work is completed.
- Place energy-dissipating material, such as riprap, check dams, straw bales, wattles, and/or gabions, at stormwater outfalls to slow water runoff, thereby minimizing erosion and preventing entrained sediments from entering waterways.
- Prevent erosion damage by using geotextiles or energy-dissipating devices such as check dams, gabions, or riprap along stream courses or their banks that are impacted by the construction.
- Protect culverts with inlet controls to prevent suspended particles from entering stormwater drainages.
- Maintain gravel entrance/exit pads at each construction site entrance/exit location to provide a buffer to reduce the amount of mud and soil transported on vehicle tires from the site to paved public roadways.
- Immediately implement temporary or permanent erosion protection and stabilization (e.g., cover crop or mulching) for all exposed soil surface areas where activities have been completed or temporarily stopped.

E. Weed Management

Disturbance resulting in the loss of vegetation is anticipated to be minimal for the project, and typically limited to access roads within the route and workspace surrounding pole structures. The workspace will not be prepared prior to construction, meaning topsoil will not be removed. Montana-Dakota will limit ground surface disturbance during construction. Temporary best management practices implemented during and after construction, such as fiber rolls or mulch, will be weed free. After construction, Montana-Dakota will use a weed-free regionally specific seed mixture for revegetation in non-agricultural areas. Agricultural fields will be decompacted and returned to their pre-construction agriculture use. During operation, Montana-Dakota will employ standard monitoring and maintenance procedures to limit the spread of noxious weeds.

F. Dust Control Plan

Wind can cause erosion, particularly in dry climates or during the dry season. Wind erosion can occur where surface soil is loose and dry. Wind erosion may also occur in areas where vegetation is sparse or absent and can transport sediments to where they can be washed into receiving waters during the next storm event or snowmelt runoff.

The prevailing winds in central North Dakota are generally from the northwest, although a southeasterly wind direction occurs occasionally. Project impacts are anticipated to be minimal with limited cut or topsoil removal. Any excavated topsoil, ground cover, or overburden materials resulting from project construction will be stockpiled for use in final site reclamation. If necessary, any stockpiles would be laid out perpendicular to the predominant wind direction to serve as wind breaks, and vegetated cover would be established to minimize erosion.

During construction, disturbed areas, excavated materials, soil piles, and stockpiled materials will be watered to minimize fugitive dust.

20. Table B-1 indicates that an agency correspondence letter to the ND Geological Survey was not sent. Please send notice of the company's application to it and provide copies to the Commission.

Correspondence has been provided to the North Dakota Geological Survey. A copy of the response will be provided to the commission prior to the commencement of project work.

21. The conclusion to the Environmental Resource Impacts Assessment indicates that the USFWS provided a concurrence. Provide copies of the concurrence mentioned. Additionally, provide copies of all correspondence with the USFWS.

Please see Attachment F.

ATTACHMENT A
PSC Request for Information



Public Service Commission State of North Dakota

COMMISSIONERS

Julie Fedorchak
Randy Christmann
Brian Kroshus

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Bismarck, ND 58505-0480
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Fax: 701-328-2410
TDD: 800-366-6888 or 711

May 19, 2021

Robert Frank
Montana-Dakota Utilities
400 North Fourth Street
Bismarck, ND 58501

Re: Case No. PU-21-151
Montana-Dakota Utilities Co.
230 kV Transmission Line - Morton County
Siting Application

The Public Service Commission Staff is reviewing Montana-Dakota Utilities Company's application. Staff is requesting that the company reply with answers to the following questions and responses for additional information:

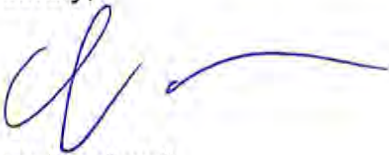
1. What is the width of the proposed corridor, the permanent right-of-way, and the temporary construction right-of-way?
2. Please update "Figure 1: Project location map" to include the proposed corridor and provide the associated GIS shapefile.
3. Provide all GIS shapefiles associated with "Figure 1: Project location map".
4. Provide a copy of an eight and one-half-inch by eleven-inch black and white map suitable for newspaper publication depicting the site area.
5. Provide answers in tabular form to each element within NDAC section 69-06-05-01(2)(a)(7). If not applicable, indicate as such.
6. What is the maximum span between pole locations?
7. Were any pole locations placed to avoid sensitive areas, such as wetlands, waterbodies, woodlands, agricultural land, or geologically unstable areas?
8. Describe how the company selected the pole locations in or near avoidance areas and wetlands.

9. Are guyed structures associated with this facility? If so, in which locations? How many guy wires will be required per structure, and how many feet from the pole structure will the anchors be located?
10. Provide copies of the engineering design layouts associated with the facility.
11. For each exclusion and avoidance area in NDAC 69-06-08-02, provide a table indicating for each exclusion and avoidance area, a description and discussion of how the company determined there were no exclusion and only one avoidance area in (1) the survey area (i.e., an area where field surveys were conducted), and (2) the study area (i.e., an area where desktop studies were performed).
12. Page 4 of the Natural Resource Impacts Evaluation to the Environmental Resource Impacts Assessment indicates that "natural resource evaluations were completed for potential wetlands, federally listed threatened and endangered species, and species managed under the North Dakota State Wildlife Action Plan." What was the width of each field survey conducted? Provide copies of each of these evaluations with the Commission.
13. For each selection criteria in NDAC 69-06-08-02, provide responses to how potential adverse effects resulting from the location, construction, and operation of the proposed facility will be managed and maintained at an acceptable.
14. Please address the policy criteria in NDAC 69-06-08-02.
15. Provide a discussion of the company's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.
16. Provide a description of the right-of-way preparation and construction and reclamation procedures.
17. Provide a table showing all permits required for the project, and the status of obtaining each.
18. Provide a discussion of present and future natural resource development in the area.
19. Provide the following project control documents:
 - a. Storm Water Pollution Prevention Plan
 - b. Unanticipated Discovery Plan
 - c. Construction and Environmental Program Plan
 - d. Erosion Control Plan
 - e. Weed Management Plan and any county-specific weed management plan
 - f. Dust Control Plan
20. Table B-1 indicates that an agency correspondence letter to the ND Geological Survey was not sent. Please send notice of the company's application to it and provide copies to the Commission.

21. The conclusion to the Environmental Resource Impacts Assessment indicates that the USFWS provided a concurrence. Provide copies of the concurrence mentioned. Additionally, provide copies of all correspondence with the USFWS.

Please let me know whether you have questions.

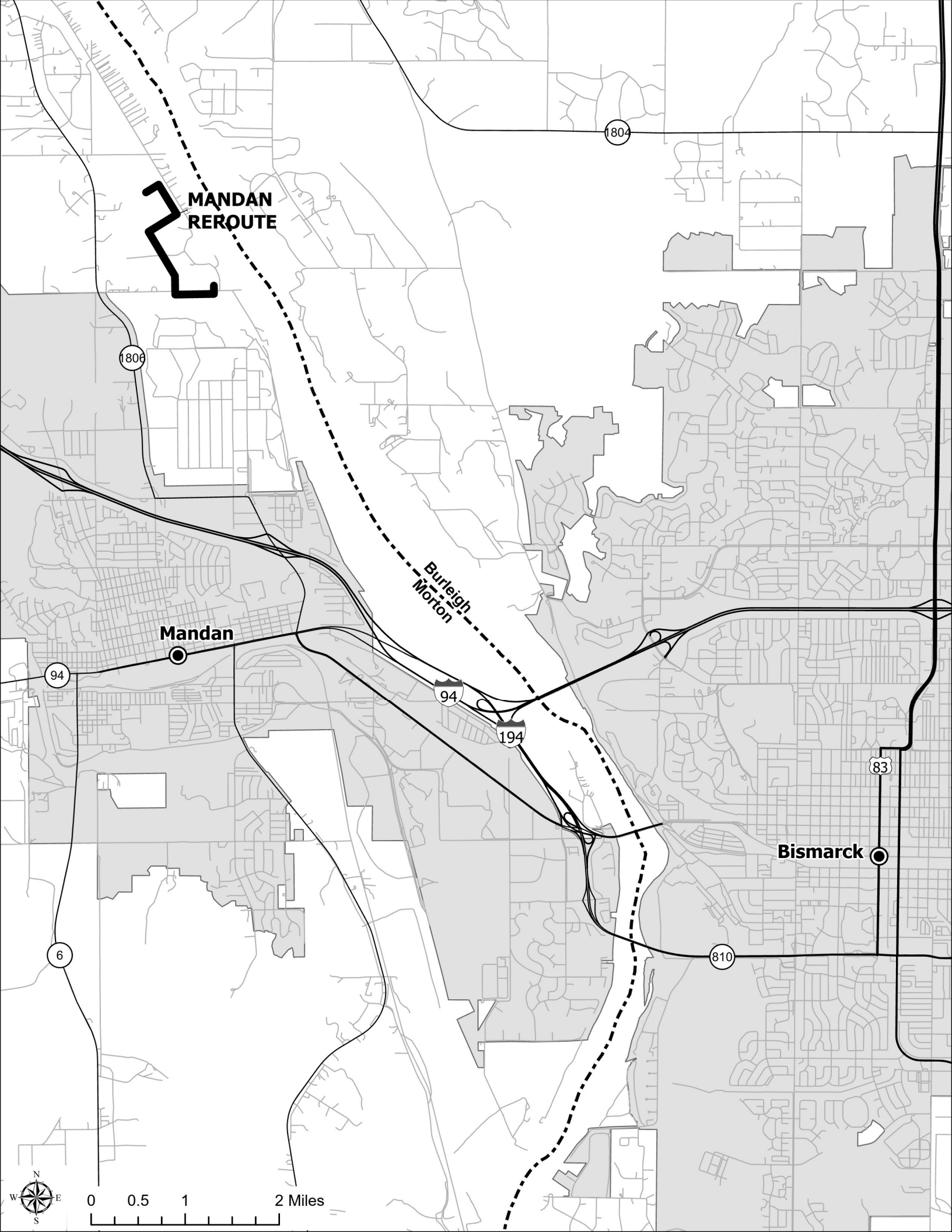
Sincerely,

A handwritten signature in blue ink, appearing to read 'A. Renfandt', with a long horizontal flourish extending to the right.

Adam Renfandt
Analyst

ATTACHMENT B

Black and White Project Location Map



**MANDAN
REROUTE**

*Burleigh
Morton*

Mandan

Bismarck



0 0.5 1 2 Miles

ATTACHMENT C
Engineering Layouts



REVISIONS					
REV	DESCRIPTION	DWN	DGN	CHK	DATE
2	ISSUED FOR CONSTRUCTION - PHASE II	BB	BB	JDB	04/23/21
1	ISSUED FOR BID - PHASE II	BB	BB	JDB	02/26/21
0	ISSUED FOR CONSTRUCTION - PHASE I	JDB	JDB	TAH	06/17/20

APPROVALS		DATE
DRAWN BY: JDB		06/17/20
DESIGN BY: JDB		06/17/20
CHECKED BY: TAH		06/17/20
APPROVED BY: CS		06/17/20

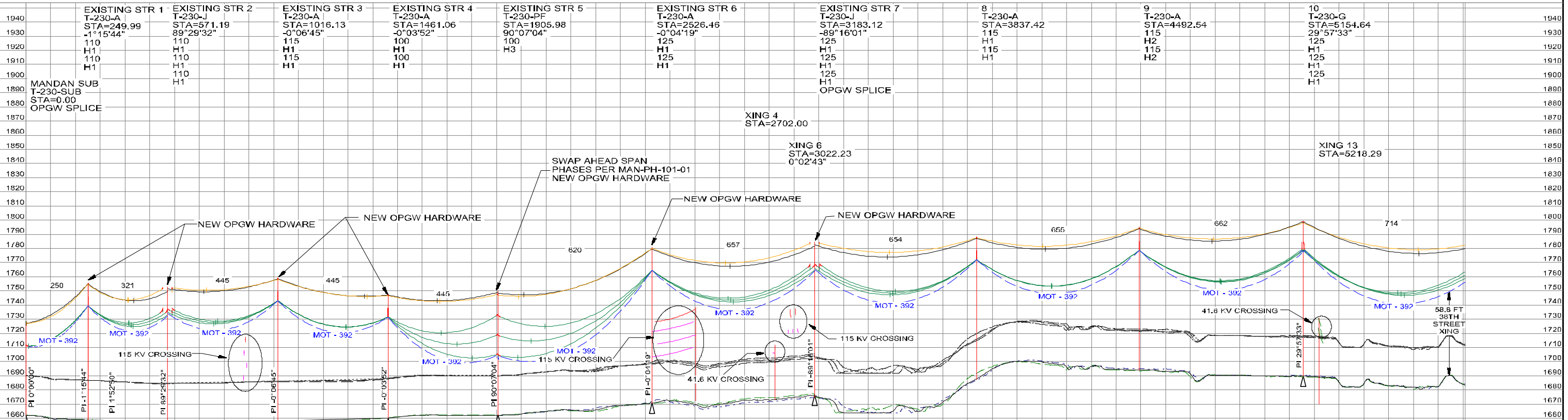
DESIGN DATA	
CONDUCTOR: 795 KCMIL 45/7 TERN ACSS	
PRIMARY OHGW: 1-DNØ-7695 OPGW	
SECONDARY OHGW: 1-3/8" 7 STRAND EHS STEEL	
GROUND CLEARANCE LINE: 28 FT	
COORDINATES: SPS NORTH DAKOTA SOUTH, US FT	



MANDAN SUBSTATION REROUTE
 230 KV TRANSMISSION LINE



DWG. NO.
 MAN-PP-101-01
 REVISION: 2
 164319



MANDAN SUB - EXISTING STR 2, 0KV, 3 8-7 STRAND EHS STEEL - SLACK-SUBSTATION WIR, RULING SPAN 306 (FT), CATENARY 1228 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 MANDAN SUB - EXISTING STR 2, 0KV, DNO-7895 CC-54-185 - 1065 CAT, RULING SPAN 279 (FT), CATENARY 1045 (FT) AT 60 (DEG F) CREEP, DISPLAYED COLD/UPLIFT INITIAL FE
 MANDAN SUB - EXISTING STR 2, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS, SLACK-SUBSTATION WIR, RULING SPAN 292 (FT), CATENARY 1257 (FT) AT 60 (DEG F) CREEP, DISPLAYED EVERYDAY MAX SAG FE
 EXISTING STR 2 - EXISTING STR 5, 0KV, 3 8-7 STRAND EHS STEEL WIR, RULING SPAN 453 (FT), CATENARY 3250 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 2 - EXISTING STR 5, 0KV, DNO-7695 CC-54-465 - 3250 CAT, RULING SPAN 439 (FT), CATENARY 3249 (FT) AT 60 (DEG F) CREEP, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 2 - EXISTING STR 5, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS WIR, RULING SPAN 445 (FT), CATENARY 2882 (FT) AT 60 (DEG F) CREEP, DISPLAYED EVERYDAY MAX SAG FE
 EXISTING STR 5 - EXISTING STR 7, 0KV, 3 8-7 STRAND EHS STEEL WIR, RULING SPAN 652 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 5 - EXISTING STR 7, 0KV, DNO-7695 CC-54-465 - 3250 CAT, RULING SPAN 630 (FT), CATENARY 3250 (FT) AT 60 (DEG F) CREEP, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 5 - EXISTING STR 7, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS WIR, RULING SPAN 640 (FT), CATENARY 3189 (FT) AT 60 (DEG F) CREEP, DISPLAYED EVERYDAY MAX SAG FE
 EXISTING STR 7 - 11, 0KV, 3 8-7 STRAND EHS STEEL - 4067 CAT, RULING SPAN 684 (FT), CATENARY 3580 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 7 - 11, 0KV, DNO-7695 CC-54-466 - 4067 CAT, RULING SPAN 684 (FT), CATENARY 3580 (FT) AT 60 (DEG F) CREEP, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 7 - 11, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS WIR, RULING SPAN 675 (FT), CATENARY 3253 (FT) AT 60 (DEG F) CREEP, DISPLAYED EVERYDAY MAX SAG FE
 XING 3 - XING 4, 115KV, 477.0 KCMIL 26-7 ACSS TERN-ACSS WIR, RULING SPAN 307 (FT), CATENARY 3728 (FT) AT 60 (DEG F) INITIAL, DISPLAYED COLD/UPLIFT MAX SAG FE
 XING 3 - XING 4, 0.01KV, 3 8-7 STRAND CHS STEEL WIR, RULING SPAN 304 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FC
 XING 5 - XING 6, 41.6KV, 477.0 KCMIL 26-7 ACSS TERN-ACSS WIR, RULING SPAN 225 (FT), CATENARY 3067 (FT) AT 60 (DEG F) INITIAL, DISPLAYED COLD/UPLIFT MAX SAG FE
 XING 5 - XING 6, 0.01KV, 3 8-7 STRAND EHS STEEL WIR, RULING SPAN 223 (FT), CATENARY 3085 (FT) AT 60 (DEG F) INITIAL, DISPLAYED COLD/UPLIFT CREEP FE
 XING 6 - XING 7, 41.6KV, 477.0 KCMIL 26-7 ACSS TERN-ACSS WIR, RULING SPAN 214 (FT), CATENARY 2987 (FT) AT 60 (DEG F) INITIAL, DISPLAYED COLD/UPLIFT MAX SAG FE
 XING 6 - XING 7, 0.01KV, 3 8-7 STRAND EHS STEEL WIR, RULING SPAN 215 (FT), CATENARY 2975 (FT) AT 60 (DEG F) INITIAL, DISPLAYED COLD/UPLIFT CREEP FE
 XING 12 - XING 13, 41.6KV, 336.4 KCMIL 26-7 ACSS LINNET WIR, RULING SPAN 221 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** MAX SAG FE
 XING 12 - XING 13, 0.01KV, 3 8-7 STRAND EHS STEEL WIR, RULING SPAN 222 (FT), CATENARY 8160 (FT) AT 60 (DEG F) INITIAL, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FE

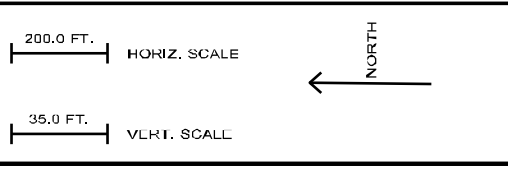


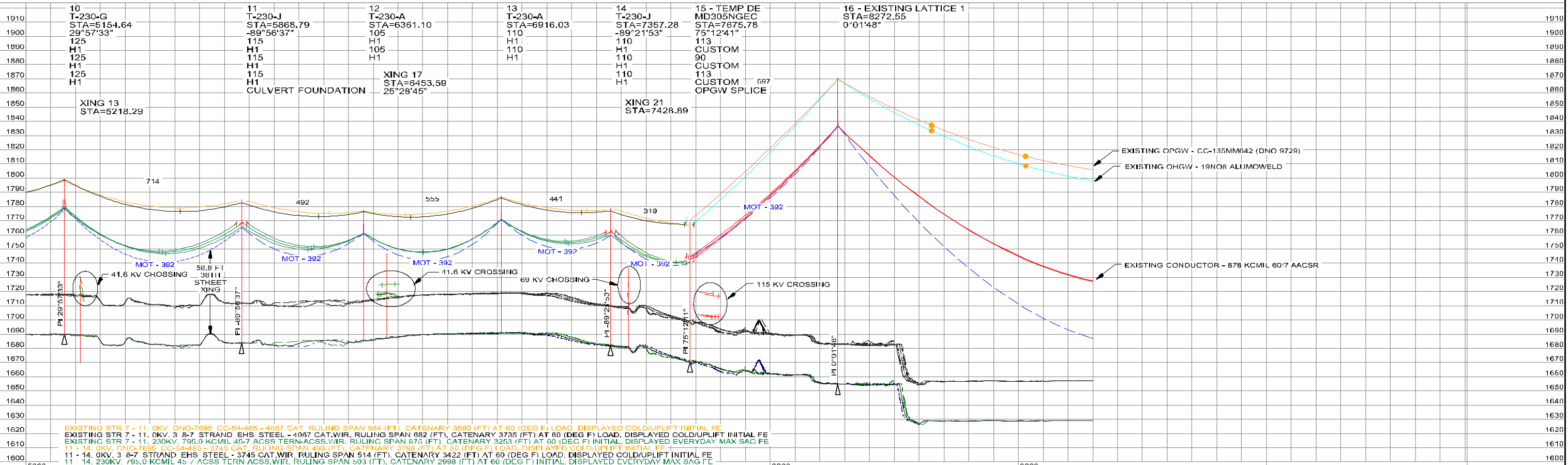
REVISIONS					APPROVALS		DATE	DESIGN DATA
2	ISSUED FOR CONSTRUCTION - PHASE II	BB	BB	JDB	04/23/21		CONDUCTOR: 795 KCMIL 45-7 TERN ACSS	
1	ISSUED FOR BID - PHASE II	BB	BB	JDB	02/26/21		PRIMARY OPGW: 1-DNO-7895 OPGW	
0	ISSUED FOR CONSTRUCTION - PHASE I	JDB	JDB	TAH	06/17/20		SECONDARY OPGW: 1-3/8" 7 STRAND EHS STEEL	
REV	DESCRIPTION	DWN	DCN	CHK	DATE	APPROVED BY: CS	GROUND CLEARANCE LINE: 28 FT	

APPROVALS	DATE	DESIGN DATA
DRAWN BY: JDB	06/17/20	COORDINATES: SPS NORTH DAKOTA SOUTH, US FT
DESIGN BY: JDB	06/17/20	
CHECKED BY: TAH	06/17/20	
APPROVED BY: CS	06/17/20	

POWER ENGINEERS

MANDAN SUBSTATION REROUTE
 230 KV TRANSMISSION LINE





EXISTING STR 7 - 11, 0KV, DNO-7695 CC-54-465 - 4067 CAT, RULING SPAN 684 (FT), CATENARY 3580 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 EXISTING STR 7 - 11, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS.WIR, RULING SPAN 673 (FT), CATENARY 3735 (FT) AT 60 (DEG F) INITIAL, DISPLAYED EVERYDAY MAX SAG FE
 11 - 14, 0KV, DNO-7695 CC-54-465 - 3745 CAT, RULING SPAN 493 (FT), CATENARY 3298 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 11 - 14, 0KV, 3 8-7 STRAND EHS STEEL - 3745 CAT.WIR, RULING SPAN 514 (FT), CATENARY 3422 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 11 - 14, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS.WIR, RULING SPAN 503 (FT), CATENARY 2998 (FT) AT 60 (DEG F) INITIAL, DISPLAYED EVERYDAY MAX SAG FE
 14 - 15 - TEMP DE - 0KV, DNO-7695 CC-54-465 - 3184 CAT, RULING SPAN 318 (FT), CATENARY 3183 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 14 - 15 - TEMP DE, 0KV, 3 8-7 STRAND EHS STEEL - 3184 CAT.WIR, RULING SPAN 322 (FT), CATENARY 2839 (FT) AT 60 (DEG F) LOAD, DISPLAYED COLD/UPLIFT INITIAL FE
 14 - 15 - TEMP DE, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS.WIR, RULING SPAN 319 (FT), CATENARY 2548 (FT) AT 60 (DEG F) INITIAL, DISPLAYED EVERYDAY MAX SAG FE
 15 - TEMP DE - 18 - EXISTING DE, 0KV, CC-135MM642, RULING SPAN 2152 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED COLD/UPLIFT INITIAL FE
 15 - TEMP DE - 18 - EXISTING DE, 230KV, 795.0 KCMIL 45-7 ACSS TERN-ACSS.WIR, RULING SPAN 2159 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED EVERYDAY MAX SAG FE
 XING 12 - XING 13, 41.6KV, 336.4 KCMIL 26-7 ACSR LINNET.WIR, RULING SPAN 221 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** MAX SAG FE
 XING 12 - XING 13, 0.01KV, 3 8-7 STRAND EHS STEEL.WIR, RULING SPAN 222 (FT), CATENARY 8160 (FT) AT 60 (DEG F) INITIAL, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FE
 XING 15 - XING 18, 41.6KV, 336.4 KCMIL 26-7 ACSR LINNET.WIR, RULING SPAN 281 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FE
 XING 15 - XING 18, 0.01KV, 3 8-7 STRAND EHS STEEL.WIR, RULING SPAN 283 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FE
 XING 21 - XING 22, 69KV, 336.4 KCMIL 26-7 ACSR LINNET.WIR, RULING SPAN 252 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** MAX SAG FE
 XING 21 - XING 22, 0.01KV, 3 8-7 STRAND EHS STEEL.WIR, RULING SPAN 252 (FT), SAGGED SPECIFYING LENGTH OF WIRE IN EACH SPAN, DISPLAYED *** SURVEYED WIRE TEMP, *** CREEP FE

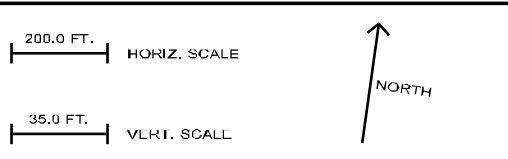


REVISIONS					APPROVALS		DATE	DESIGN DATA
2	ISSUED FOR CONSTRUCTION - PHASE II	BB	BB	JDB	04/23/21	DESIGN BY: JDB	06/17/20	CONDUCTOR: 795 KCMIL 45/7 TERN ACSS PRIMARY OHGW: 1-DNO-7695 OPGW SECONDARY OHGW: 1-3/8" 7 STRAND EHS STEEL
1	ISSUED FOR BID - PHASE II	BB	BB	JDB	02/26/21	CHECKED BY: TAH	06/17/20	GROUND CLEARANCE LINE: 28 FT COORDINATES: SPS NORTH DAKOTA SOUTH, US FT
0	ISSUED FOR CONSTRUCTION - PHASE I	JDB	JDB	TAH	06/17/20	APPROVED BY: CS	06/17/20	
REV	DESCRIPTION	DWN	DCN	CHK	DATE			

APPROVALS	DATE	DESIGN DATA
DRAWN BY: JDB	06/17/20	CONDUCTOR: 795 KCMIL 45/7 TERN ACSS PRIMARY OHGW: 1-DNO-7695 OPGW SECONDARY OHGW: 1-3/8" 7 STRAND EHS STEEL
DESIGN BY: JDB	06/17/20	GROUND CLEARANCE LINE: 28 FT COORDINATES: SPS NORTH DAKOTA SOUTH, US FT
CHECKED BY: TAH	06/17/20	
APPROVED BY: CS	06/17/20	

POWER ENGINEERS

MANDAN SUBSTATION REROUTE
 230 KV TRANSMISSION LINE



ATTACHMENT D

SHPO Response



January 11, 2021

Mr. Michael J Retter
Principal Investigator
SWCA Bismarck Office
116 N 4th Street Suite 200
Bismarck, ND 58501

ND SHPO Ref: 21-5331 "A Class I and Class III Cultural Resource Inventory for the Montana-Dakota Utilities Co. Mandan Reroute, Morton County, North Dakota" in portions of [T139N R81W Sections 10 & 15]

Dear Mr. Retter,

We reviewed ND SHPO Ref: 21-5331 "A Class I and Class III Cultural Resource Inventory for the Montana-Dakota Utilities Co. Mandan Reroute, Morton County, North Dakota" in portions of [T139N R81W Sections 10 & 15] and find the report by Laci Paul and Aidan McCarty acceptable. We find that there has been a good faith effort to avoid impacts to significant sites.

Thank you for the opportunity to review this project under North Dakota cultural resources consultation. This letter does not serve as federal agency consultation or SHPO consultation for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, (36 CFR Part 800), or the National Environmental Policy Act, as amended, (42 U.S.C. §§ 4321- 4347).

If you have any questions please contact Lisa Steckler, Historic Preservation Specialist at (701) 328-3577 or lsteckler@nd.gov

Sincerely,

for William D. Peterson, PhD
Director, State Historical Society of North Dakota

21-5331

ATTACHMENT E
Unanticipated Discovery Plan

Unanticipated Discovery Plan for the Montana-Dakota Utilities Co. Mandan Reroute 230-kilovolt (kV) Transmission Line Project, Morton County, North Dakota

JUNE 2021

PREPARED FOR

Montana-Dakota Utilities Co.

PREPARED BY

SWCA Environmental Consultants

**UNANTICIPATED DISCOVERY PLAN
FOR THE MONTANA-DAKOTA MANDAN REROUTE 230-
KILOVOLT (KV) TRANSMISSION LINE PROJECT, MORTON
COUNTY, NORTH DAKOTA**

Prepared for

Montana-Dakota Utilities Co.
400 North Fourth Street
Bismarck, North Dakota 58501

Prepared by

Aidan McCarty

SWCA Environmental Consultants
201 Slate Drive, Suite 8
Bismarck, North Dakota 58503

June 3, 2021

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Discovery Definition.....	2
Procedures for Addressing Discoveries Identified by Construction Personnel.....	2
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Appendix A. Procedures for Addressing Cultural Resource Discoveries by Construction Personnel

Appendix B. Procedures for the Treatment of Unanticipated Discovery of Human Remains

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INTRODUCTION

This Unanticipated Discovery Plan (Plan) documents the procedures to be implemented in the event cultural resources are discovered during construction of the Mandan Reroute Project (project). Montana-Dakota Utilities Co. (Montana-Dakota). Montana-Dakota retained SWCA Environmental Consultants (SWCA) to complete this Plan in response to a request for information from the North Dakota Public Services Commission (PSC).

Significant historic or archaeological artifacts or sites located on land under the jurisdiction of the State of North Dakota or its political subdivisions are protected under Section 55-02-07 of the North Dakota Century Code (NDCC). Furthermore, NDCC Section 23-06-27 and North Dakota Administrative Code (NDAC) Section 40-02-03 provide special protection of human burial sites, human remains, and burial goods. In accordance with applicable North Dakota laws and regulations, this Plan contains procedures for addressing cultural resource discoveries identified by construction personnel during construction of the Montana-Dakota Mandan Reroute Pipeline, including procedures for the initial treatment of discoveries, the evaluation and treatment of discoveries, and the treatment of human remains.

A Class I and Class III cultural resource inventory was performed for the project area (Paul 2020). No cultural resources were recorded during the inventory and SWCA recommended the project be granted a determination of *No Significant Sites Adversely Affected* and clearance to proceed as planned. The State Historical Society of North Dakota (SHPO) agreed with this recommendation. This Plan has been prepared because the potential exists for exposure of previously unidentified or buried cultural material within the project route during mechanical excavation.

QUALIFICATIONS OF CONSTRUCTION PERSONNEL

Construction personnel will receive training from an SWCA representative to ensure that construction personnel recognize potential archaeological resources. The training will be presented in person, or remotely, as determined by participating parties' safety policies and availability. All Montana-Dakota responsible parties and construction personnel will meet with Montana-Dakota representatives for basic archeological training prior to participating in construction. This training will provide orientation regarding recognition of cultural resources as well as a general overview of the culture history of the region, so that construction personnel are familiar with the types of archaeological resources that may be encountered during construction. The training will also outline the steps to be followed in the event of a significant archaeological discovery during construction (e.g., the discovery of human remains). The following items will be reviewed during the training program.

- Definition of a discovery and examples of discoveries.
- Steps toward discovery protection until such time as they can be properly evaluated by a qualified archaeologist.
- Proper notification of the appropriate Montana-Dakota personnel.
- The necessity of reporting discoveries in a timely manner and complying with the other stipulations provided in this Plan.
- The need to treat any human skeletal remains that are encountered with dignity and respect.
- Penalties for failure to report discoveries or to comply with the procedures outlined in this Plan.

DISCOVERY DEFINITION

Archaeological discoveries consist of evidence of human activity that is more than 50 years old with potential to yield data pertinent to regional history and prehistory. Prehistoric discoveries include, but are not limited to, features (small hearth features, house pit features, storage features, etc.), artifact concentrations, and activity areas. Historic discoveries include, but are not limited to, features (historic hearths, trash deposits, structures, old canals, roads, etc.), artifact concentrations, and activity areas. Small concentrations of non-human bone with no evidence of cultural modifications (i.e., butchering, processing, or other modifications) will not be considered discoveries.

PROCEDURES FOR ADDRESSING DISCOVERIES IDENTIFIED BY CONSTRUCTION PERSONNEL

The following procedures will be initiated in the event unanticipated cultural resources are discovered. A flow chart presenting an abbreviated version of the procedures is provided in Appendix A. When a discovery is encountered, the construction activity that resulted in the exposure of the discovery will be immediately halted and the construction manager will be notified. The construction manager in turn will notify the Montana-Dakota project manager.

Montana-Dakota's responsible party involved in unanticipated discoveries of archeological materials will order construction contractors to suspend ground-disturbing activities adjacent to the discovery. Cessation of ground-disturbing activity will encompass a sufficient area to protect the discovery and provide a buffer zone for adequate and safe investigation of the discovery and any associated features or artifacts. A recommended guideline for the buffer zone is at least 50 feet (15 meters [m]) around the discovery, but its size can be adjusted to protect the discovery adequately without unnecessary hindrance to construction. Visual barriers such as temporary fencing or flagging will be placed around the discovery area to protect it from further disturbance. Vehicle traffic within the vicinity may need to be limited or halted until the discovery is inspected.

Montana-Dakota's responsible party will then notify and consult an archeologist qualified under NDAC Section 40-02-02 to review the discovery. In the event a qualified archaeologist is not immediately available, photographs of the discovery may be transmitted to the archaeologist for review, at which time the archaeologist will determine if a field visit is required. During the review phase, suspension of all work and vehicle traffic in the buffered area is required. If the archaeologist determines that the discovery is non-cultural, Montana-Dakota will be notified, and the halted construction activity can resume.

If the discovery is deemed cultural and a field visit is required, the archaeologist will be scheduled for an on-site visit as soon as possible. In the meantime, Montana-Dakota's responsible party will notify the construction manager to suspend work within the buffered discovery area until the field visit by the archaeologist occurs. During the field visit, the archaeologist will determine whether the discovery is potentially significant.

TREATMENT OF DISCOVERIES BY ARCHAEOLOGICAL PERSONNEL

When a discovery is reviewed by an archaeologist, the discovery will be fully recorded according to approved standards. The initial treatment of any discovery will consist of recording the location of the discovery; recording summary data concerning the feature(s) and/or other remains (including dimensions,

qualitative characteristics, and associated remains); photographing the discovery and the overall context of the exposed material; and profiling trench walls containing cultural features or strata (where safe and prudent). The feature(s) will then be excavated and a sample or all feature fill will be collected for laboratory analysis including pollen studies, flotation, and carbon dating as appropriate. Feature plans and profiles will be drawn. Features will be photographed. Uncollected feature fill will be screened using 0.25-inch mesh. If necessary, additional horizontal exposure of sediments/deposits around the feature may be investigated to evaluate the feature context.

When appropriate, the location around the discovered cultural material will be tested to determine the extent of the cultural material. Testing can include, but is not limited to, excavation of controlled units over and around the feature area or placement of test units and/or auger probes. Testing will be designed to identify the nature and extent of the discovery and any associated activity area(s) or other features, if present. Collection of a discovery will occur when appropriate.

AGENCY NOTIFICATION AND REPORTING

If a discovery is deemed potentially significant, Montana-Dakota and the archaeologist will consult and coordinate with a Principal Investigator to determine the next course of action. If necessary, the Principal Investigator will coordinate with the State Historical Society of North Dakota (SHSND) to propose procedures for further treatment of the discovery, while minimizing impacts to the construction schedule to the extent possible. Construction activities in the discovery area may not proceed until approval has been obtained from the SHSND and other involved agencies and parties.

A report detailing all cultural resources identified, recorded, tested, and/or excavated during the construction phase of Montana-Dakota's Mandan Reroute Pipeline, regardless of significance, will be prepared by the archaeologist and submitted to the SHSND for review.

SPECIAL PROCEDURES FOR DISCOVERIES OF HUMAN REMAINS

Should human remains be encountered during construction of the Mandan Reroute Pipeline, per the protocol outlined above, all work will be immediately halted at the general location of the discovery. This location will be immediately secured, including a buffer zone of 50 feet (15 m) surrounding the discovery. Construction personnel and vehicles will promptly vacate the buffer zone. Vehicle traffic within the buffer zone will be limited to that necessary to remove vehicles and equipment from the buffer zone. Care will be taken to prevent any disturbance of the potential human remains during removal of vehicles and equipment. Until appropriate consultation has occurred, the discovery will remain protected from any disturbance, such that no remains or associated artifacts are touched, moved, or collected.

Following notification of the construction manager and Montana-Dakota project manager, Montana-Dakota will immediately notify local law enforcement, the county coroner, and the SHSND. Contact information for relevant parties is listed in Table 1.

Table 1. Contact Information

Contact/Agency	Telephone	Address
Morton County Sheriff's Office	701.667.3330	205 1st Ave NW, Mandan, ND 58554
Morton County Coroner (John R. Baird, MD, MPH)	701.667.1000	2008 Twin City Dr, Mandan, ND 58554 Morton County, North Dakota

Contact/Agency	Telephone	Address
City of Mandan Police Department	701.667.3250	205 1st Ave NW, Mandan, ND 58554
Chief Archaeologist (Andrew Clark), Archaeology and Historic Preservation Division State Historical Society of North Dakota	701.328.2666	612 East Boulevard Avenue Bismarck, North Dakota 58505

The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archaeological. The subsequent treatment of the discovery, including custody of the remains, will follow guidelines set forth in the NDCC Chapter 23-06 and NDAC Section 40-02-03, as follows.

- If the remains are deemed forensic (non-archaeological), the county coroner will retain custody of the remains and determine the plan of action.
- If the remains are deemed to be archaeological (historic or prehistoric) in nature, within 24 hours of notification, the SHSND will send a staff member to evaluate the remains and determine the cultural affiliation and age of the remains, if possible. The subsequent plan of action will depend on the cultural affiliation of the burial.
 - If human remains are determined to be non-Native American, the SHSND will retain custody of the burial and, following consultation with appropriate parties, determine a plan of action.
 - If the human remains are determined to be Native American or of unknown cultural affiliation, the remains will be left in place and protected from any form of disturbance until a plan for their protection or removal can be generated. The SHSND will contact and consult with the North Dakota Intertribal Reinternment Committee to determine the subsequent plan of action.

A flow chart presenting an abbreviated version of the procedures to be followed should human remains be encountered is provided in Appendix B.

REFERENCES CITED

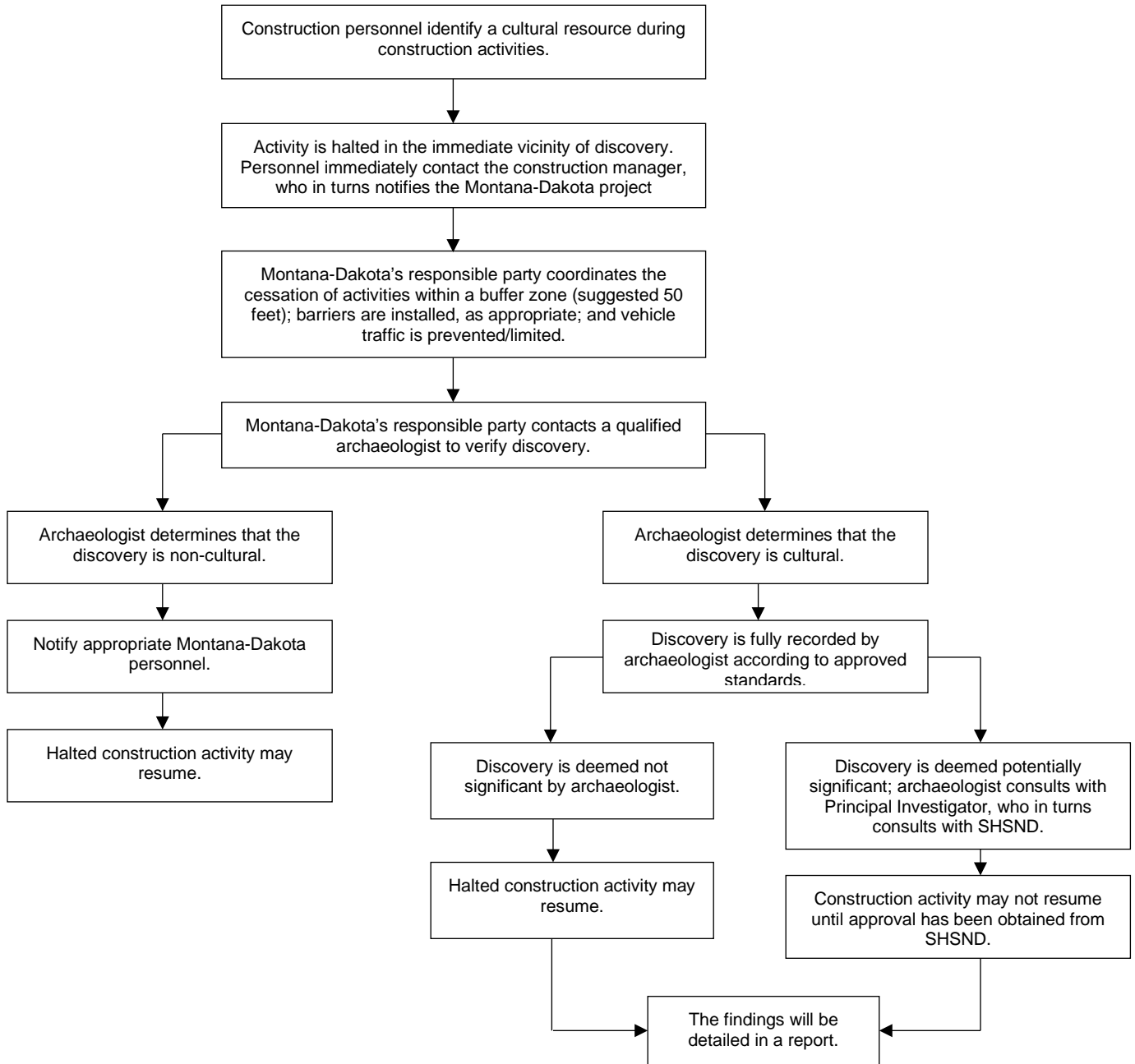
Paul, Laci L.

2020 *A Class I and Class III Cultural Resource Inventory for the Montana-Dakota Utilities Co. Mandan Reroute, Morton County, North Dakota.* SWCA Environmental Consultants, Bismarck, North Dakota.

APPENDIX A

Procedures for Addressing Cultural Resource Discoveries by Construction Personnel

PROCEDURES FOR ADDRESSING CULTURAL RESOURCE DISCOVERIES BY CONSTRUCTION PERSONNEL

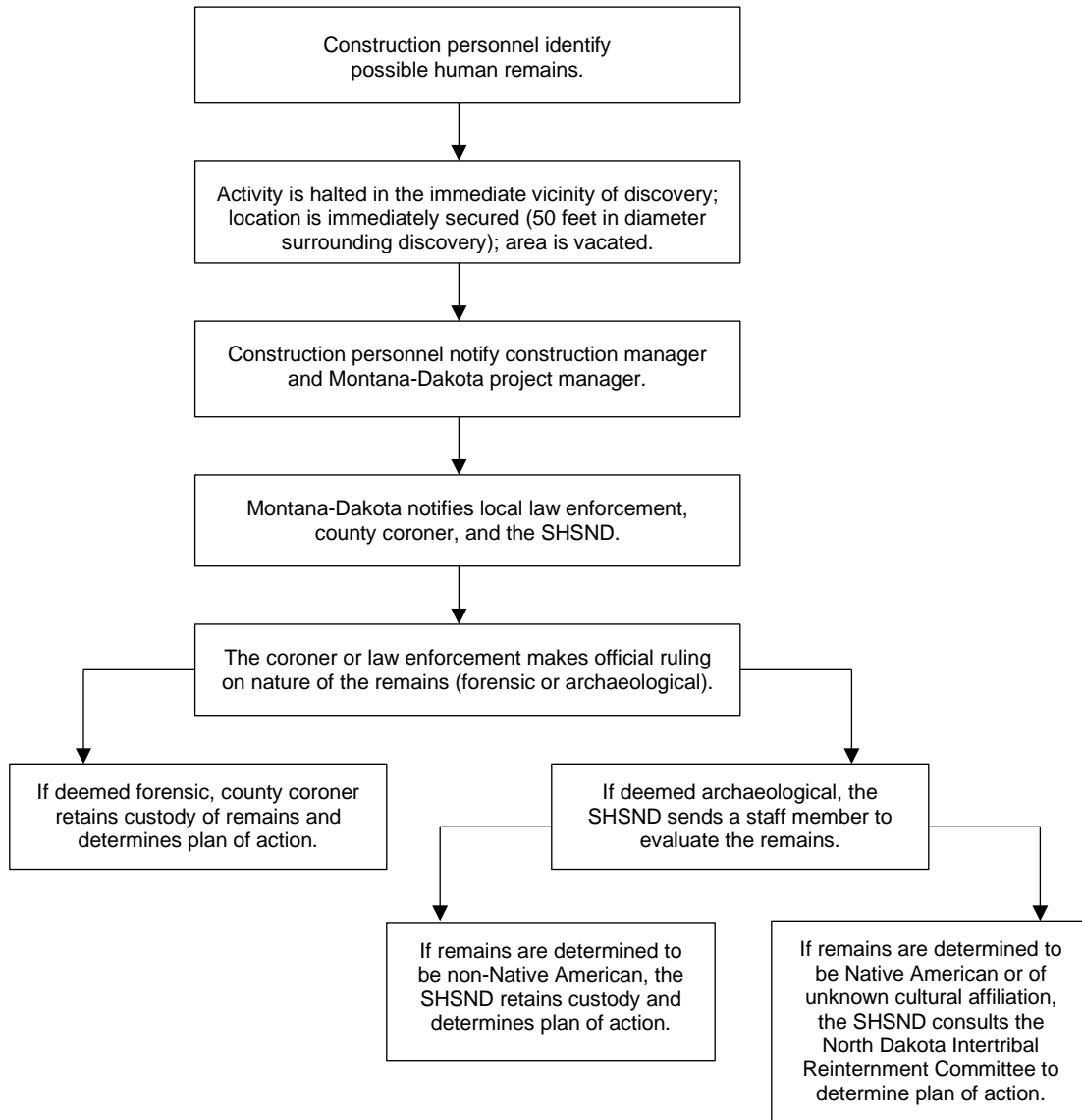


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APPENDIX B

Procedures for the Treatment of Unanticipated Discovery of Human Remains

PROCEDURES FOR THE TREATMENT OF UNANTICIPATED DISCOVERY OF HUMAN REMAINS



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ATTACHMENT F
USFWS Response



ENVIRONMENTAL CONSULTANTS

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201 Slate Drive, Suite 8
Bismarck, North Dakota 58503
Tel 701.258.6622 Fax 701.258.5957
www.swca.com

December 18, 2020

Jerry Reinisch
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
3425 Miriam Drive
Bismarck, North Dakota 58501

Re: Montana-Dakota Utilities Co. Mandan Transmission Line Reroute Project
Morton County, North Dakota

Dear Mr. Reinisch:

Montana-Dakota Utilities Co. (Montana-Dakota) is proposing to construct two new segments of 230-kilovolt transmission line as part of the Mandan Transmission Line Reroute project (Project). The lengths of the two proposed segments are 0.60 and 0.47 mile. As shown on the enclosed Project location map, the first proposed segment of the new transmission line will originate at the North Heskett substation and continue northeast for 0.11 mile before turning southeast for 0.25 mile and then southwest for 0.24 mile where it will connect to the existing transmission line. Poles 1 through 6 have already been placed as shown on the Project location map and are proposed to be conductored and wired in the future. The second proposed segment of the transmission line will begin at pole 10 and continue south for 0.13 mile and then east for 0.28 mile before turning north for 0.60 mile to connect with the existing line that crosses the Missouri River. Poles 11 through 15 are proposed to be placed and constructed as shown on the Project location map.

A Transmission Facility Permit Application will be submitted to the North Dakota Public Service Commission (PSC) under North Dakota Administrative Code Chapter 69-06-05. The Project study area is a 1-mile-wide corridor centered on the transmission line centerline in Morton County, Sections 10 and 15, Township 139 North, Range 81 West. Construction of the Project is scheduled to begin in the spring 2021. Although the anticipated area required for placing the poles and conductoring and stringing the line is estimated to be a maximum of 200 feet on either side of the centerline, this area likely will be less and typically averages 50 to 100 feet. The pole structures themselves will be approximately 80 to 100 feet in height, with the wires strung approximately 60 to 80 feet above the ground surface. Both H-frame and 3-pole guyed suspension and deadened structures will be used. Pole 15 is being placed as a temporary structure and is expected to be removed in 2022 when the transmission line crossing of the Missouri River is reconductored with some pole replacement.

SWCA Environmental Consultants (SWCA) requested a U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report for the study area (enclosed). Six federally listed species were identified in the IPaC report: northern long-eared bat (*Myotis septentrionalis*; threatened); least tern (*Sterna antillarum*; endangered); piping plover (*Charadrius melodus*; threatened); rufa red knot (*Calidris canutus rufa*; threatened); whooping crane (*Grus americana*; endangered); and pallid sturgeon (*Scaphirhynchus albus*; endangered). Due to the highly developed nature of the study area, which includes two existing substations, an existing transmission line, industrial buildings, a housing

development, and other previously disturbed land, SWCA does not believe that the proposed Project poses a risk to threatened or endangered species or their habitats.

SWCA is notifying the USFWS of the proposed Project and offering the opportunity for comments. Information received from the USFWS will be used in a North Dakota PSC application being prepared for the Project. Please send your replies and/or requests for additional Project information within 30 days to:

Jana Heisler-White, Project Manager
SWCA Environmental Consultants
201 Slate Drive, Suite 8
Bismarck, North Dakota 58503
(307) 655-1152
jana.heislerwhite@swca.com

Sincerely,



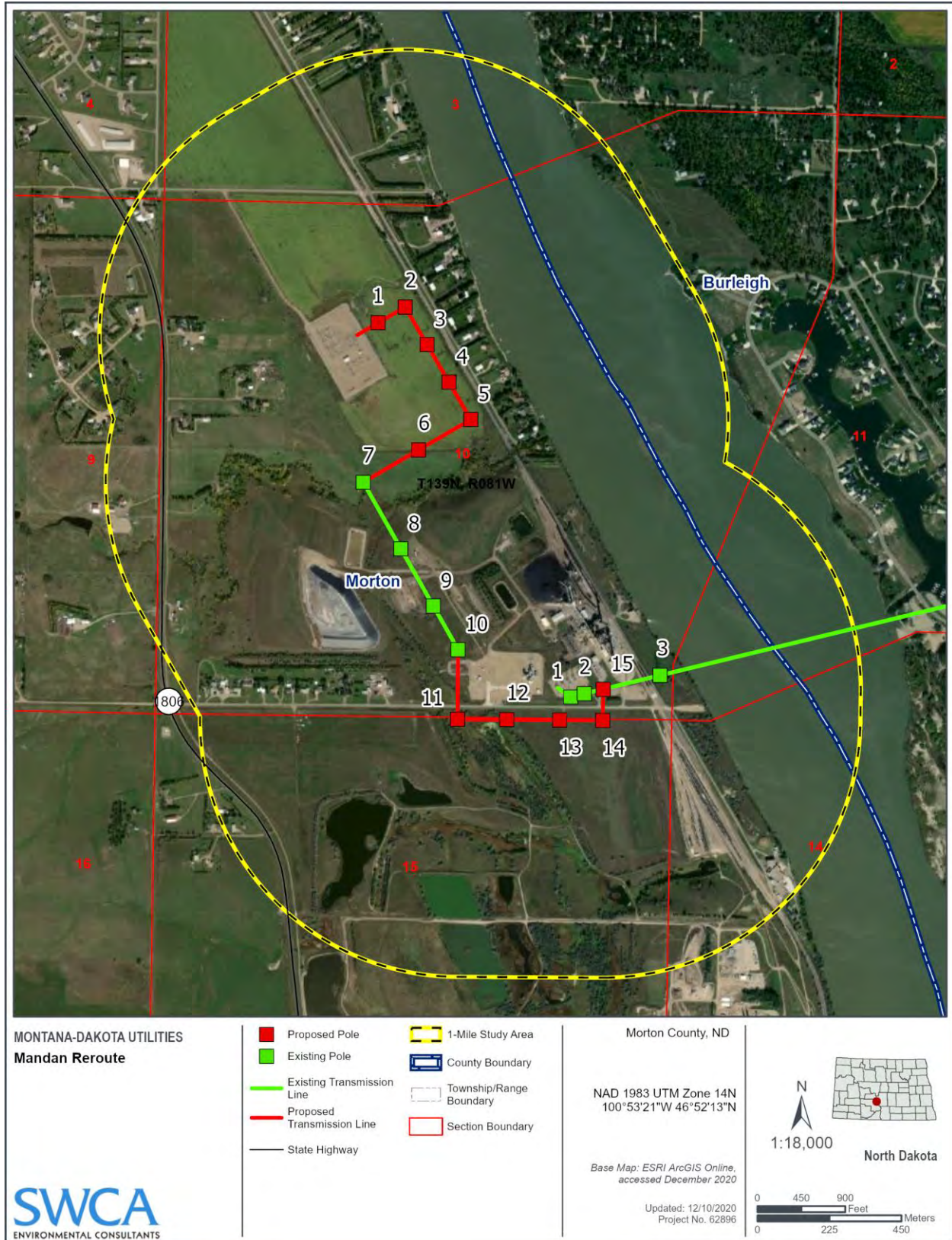
Jana Heisler-White

Enclosure: Project Location Map
IPaC Report

This Constitutes a report of the Department of the Interior prepared in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq). We have reviewed and have NO OBJECTION to this proposed project.

DREW BECKER Digitally signed by DREW BECKER
Date: 2020.12.21 15:18:35 -06'00'

Field Supervisor



Proposed Mandan Transmission Line Reroute Project location map.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Burleigh and Morton counties, North Dakota



Local office

North Dakota Ecological Services Field Office

☎ (701) 250-4481

📠 (701) 355-8513

3425 Miriam Avenue

Bismarck, ND 58501-7926

http://www.fws.gov/northdakotafieldoffice/endspecies/endangered_species.htm

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis* Threatened
 No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/9045>

Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8505	Endangered
Piping Plover <i>Charadrius melodus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane <i>Grus americana</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/758	Endangered

Fishes

NAME	STATUS
Pallid Sturgeon <i>Scaphirhynchus albus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7162	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Piping Plover <i>Charadrius melodus</i> https://ecos.fws.gov/ecp/species/6039#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

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

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

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE.

"BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

Breeds Dec 1 to Aug 31

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>

Lewis's Woodpecker *Melanerpes lewis*

Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9408>

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

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

Probability of Presence ()

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

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

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

presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

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

Survey Effort (|)

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

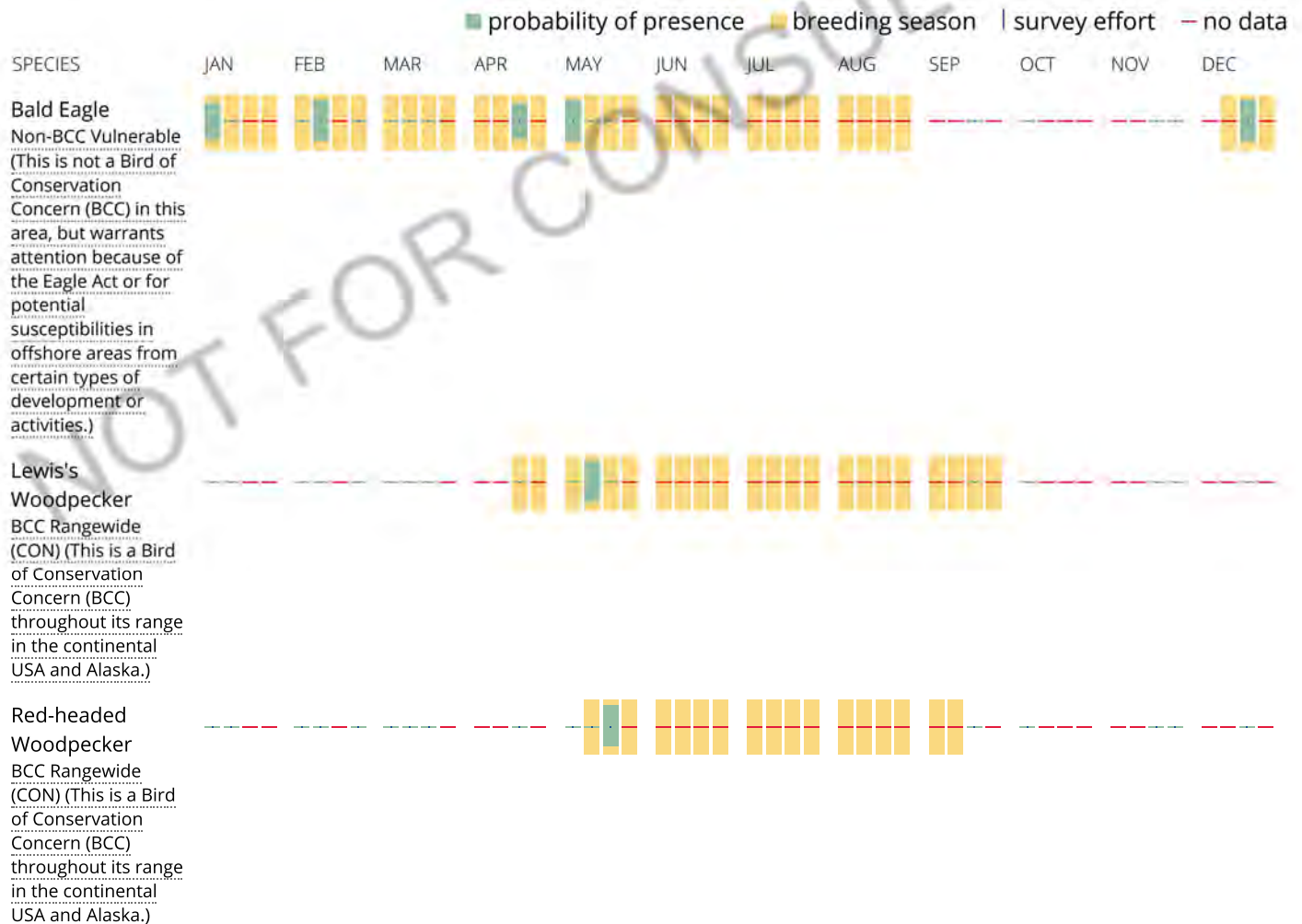
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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



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

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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 AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1A](#)

[PEM1C](#)

[PEM1Cx](#)

FRESHWATER POND

[PABFx](#)

[PABFh](#)

[PUSCx](#)

RIVERINE

[R2UBH](#)

[R4SBC](#)

[R2USC](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION