Attachment 7
U.S. Fish and Wildlife Service Consultation Package

From: Johnson, Jessica N
To: Leslie Rodman-Jaramillo
Subject: WBI Energy - Wahpeton Supplemental Consultation Letter
Date: Thursday, December 15, 2022 11:55:02 AM
Attachments: image001.png
WBI Wahpeton expansion concurrence letter 12.13.22 (002) (1).pdf

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EXTERNAL MESSAGE

Hello Leslie,
We have reviewed the supplemental consultation and I have attached our concurrence letter. No hard copy to follow. Let me know if you have any questions.
Thanks,
Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Friday, December 2, 2022 10:36 AM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

Thanks for confirming, Jessica. Yes, that is correct 106 pages with attachments A-D.

Please let me know if you have further questions or would like to discuss further.

Leslie
Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
M +1 503 984 6609

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Friday, December 2, 2022 6:52 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

EXTERNAL MESSAGE

Yes, I was able to open it. Confirming that it is 106 pages with attachments A-D.

-Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Thursday, December 1, 2022 5:40 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

Hi Jessica,

I just wanted to follow up on my earlier message prior to the Thanksgiving holiday. Can you please confirm receipt of the below message as well as my OneDrive link and access to the WBI Energy supplemental consultation letter?

Please call me if there are any items to discuss.

Thank you,
Leslie

Leslie Rodman-Jaramillo
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From: Leslie Rodman-Jaramillo
Sent: Thursday, November 17, 2022 4:38 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Cc: Jones, Seth A <seth_jones@fws.gov>; Jill.Linn@wbienergy.com; Maggie Suter <Maggie.Suter@erm.com>; Chris Schmidt <chris.schmidt@erm.com>
Subject: WBI Energy - Wahpeton Supplemental Consultation Letter

Hi Jessica,

On behalf of WBI Energy, I am reaching out to provide the USFWS a supplemental consultation letter for the Wahpeton Expansion Project.

The letter is to inform you of a minor Project route adjustment since the May 27, 2022 filing of the Project Determination Letter and subsequent USFWS concurrence letter issued on July 1, 2022.

Due to the size of the file, I'm going to share that via OneDrive in a separate email , so let me know if you have any difficulties accessing the supplemental consultation letter and associated attachments.

Please reach out if you have any questions during your review.

Thank you,
Leslie

Leslie Rodman-Jaramillo
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Read our Sustainability Report and ERM Foundation Annual Review

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services

3425 Miriam Avenue
Bismarck, North Dakota 58501

December 13, 2022

IN REPLY REFER TO:
2022-0000981
Wahpeton Expansion
Project

Ms. Jill Lynn
Environmental Affairs
WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, Montana 59330

Dear Ms. Lynn:

Thank you for the opportunity to provide comments on the proposed minor route adjustment for the Wahpeton Expansion Project. As stated in your letter, previously WBI Energy Transmission, Inc. (WBI) submitted a Biological Assessment (BA) on May 27, 2022. After US Fish and Wildlife Service (FWS) concurrence, a minor route adjustment was proposed for the project. The proposed route alternative would avoid two crossings of the Wild Rice River. Under the authority of and in according with the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq*.), we have reviewed the alternatives and have concluded that the proposed modifications to the action will not cause an effect to the listed species or critical habitat that was not considered in the previous consultation.

The FWS appreciates the opportunity to work with WBI the Federal Energy Regulatory Commission (FERC) on our shared conservation goals. Should you have any questions regarding these comments, please have your staff contact Jessica Johnson of my staff at (701) 355-8507 or at the letterhead address or contact me at (701) 355-8512.

Sincerely,

Drew N. Becker
North Dakota Field Office Supervisor

WBI ENERGY TRANSMISSION, INC.
2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

November 17, 2022

Jessica Johnson
U.S. Fish and Wildlife Service, Region 6
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

Subject: WBI Energy Transmission, Inc.
Proposed Wahpeton Expansion Project – Minor Route Adjustment
Cass and Richland Counties, North Dakota
Section 7 Endangered Species Act Consultation

Dear Ms. Johnson:

WBI Energy Transmission, Inc. (WBI Energy) operates a natural gas transmission pipeline system in the Northern Plains and is proposing to expand its system in southeastern North Dakota. The Wahpeton Expansion Project (Project) will involve constructing approximately 60.5 miles of 12-inch diameter natural gas transmission pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota, to a new Montana-Dakota Utilities Company (MDU)-Wahpeton Border Station near Wahpeton, North Dakota. The Project will include minor modifications at the Mapleton Compressor Station, a new MDU-Kindred Border Station near Kindred, North Dakota, and new block valves and pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route.

This letter is to inform you of a minor Project route adjustment since the May 27, 2022 filing of the Project Determination Letter (letter), which sought U.S. Fish and Wildlife (USFWS) technical assistance, written concurrence, or comments otherwise, with the effects determinations for those federally listed species discussed in the letter. Attachment A includes the Project Determination Letter as submitted on May 27, 2022. A summary of WBI Energy submissions and USFWS responses include the following:

- May 27, 2022 – WBI Energy submits Project Determination Letter;
- June 21, 2022 – Ms. Johnson requested Resource Report 1 appendices as referenced in the Project Determination Letter;
- June 23, 2022 – On behalf of WBI Energy, ERM submitted the requested (Resource Report 1 appendices as well as Project shapefile and KMZ) to Ms. Johnson and Mr. Seth Jones (USFWS); and
- July 1, 2022 – Ms. Johnson provided WBI Energy and ERM with an electronic submission of the USFWS concurrence letter for the Project

USFWS, WBI Energy, and ERM correspondence, including the USFWS letter of concurrence is provided in Attachment B.

REROUTE INFORMATION

The Federal Energy Regulatory Commission (FERC) requested that WBI Energy identify and evaluate the alternatives to avoid two crossings on the Wild Rice River at mileposts (MP) 57.0 and 57.6. WBI Energy identified a route alternative between MPs 55.13 and 59.63 that would avoid the two crossing of the Wild Rice River. This alternative has now been adopted as a reroute and is known as the Wild Rice River Route Alternative - MP 55. Attachment C includes an overview map of the proposed pipeline route and highlighted area encompassing the minor Project route adjustment, which includes the Wild Rice River Route Alternative - MP 55 (see Attachment C, Alternative/Variation labeled route).

Construction of the reroute will impact approximately 0.4 acre of mapped emergent National Wetland Inventory (NWI) wetland associated with an intermittent stream crossing, but would avoid the two crossings of the Wild Rice River as well as reduce the crossing of intermittent streams from two to one. The reroute will also avoid the crossing of approximately 0.4 acre of riparian forest adjacent to the prior Wild Rice River crossings and will not affect any additional forested land. Additionally, this reroute avoids impacts to a historic site discovered during field surveys along the original alignment.

SPECIES LIST AND EFFECTS DETERMINATIONS

On October 14, 2022, ERM performed an updated query of the USFWS Information for Planning and Consultation (IPaC) system to identify federally listed species and designated critical habitat with the potential to occur within the Project area. The IPaC system generated an official species list (Attachment D) that identified four threatened, endangered, or candidate species including one mammal, two insects, and one flowering plant with the potential to occur within the Project area in Cass and Richland counties:

- Northern long-eared bat (*Myotis septentrionalis*): Threatened (Proposed Endangered)
- Dakota skipper (*Hesperia dacotae*): Threatened
- Monarch butterfly (*Danaus plexippus*): Candidate
- Western prairie fringed orchid (*Platanthera praeclara*): Threatened

Note that the official species list provided with the Determination Letter submitted in May 2022, included the endangered poweshiek skipperling (*Oarisma poweshiekI*), and the updated official species list does not include this species.

The IPaC results indicated that designated critical habitat is not present within the Project area. ERM did not identify any additional designated critical habitat for federally listed species near the Project in North Dakota through review of the USFWS critical habitat mapper and Federal Register documentation.

The reroute presents a minor route adjustment, and overall, there is lack of suitable habitat (approximately 92 percent of the Project area is agriculture) for federally listed species within and immediately adjacent to the Project area; therefore, based on additional analysis of the Project and the minor route adjustment, WBI Energy has determined that the species' effects determinations have not changed from what was previously documented and submitted on May 27, 2022 and that which received USFWS concurrence on July 1, 2022.

WBI Energy is requesting that the USFWS North Dakota Ecological Services Field Office located in Bismarck, North Dakota, provide technical assistance with the effects determinations for those federally listed species that are documented in this letter. Written concurrence, or comments otherwise, will ensure

that the applicant can provide FERC with the information necessary for an accurate and thorough assessment of federally listed species potentially affected by the proposed Project.

SUMMARY/CLOSING

WBI Energy is providing this update in support of federal permitting for the Wahpeton Expansion Project. Due to the fact that this is a minor route adjustment, and overall, there is lack of suitable habitat for federally listed species within and immediately adjacent to the Project area, we conclude that our action *may affect but is not likely to adversely affect* the NLEB, DASK, and WPFO; and Project impacts on the monarch butterfly are anticipated to be minor. Additionally, the Project is not expected to result in adverse permanent impacts on migratory birds, and the Project is not expected to affect golden or bald eagles. As noted above, WBI Energy is requesting technical assistance, and concurrence with or comments otherwise, on the effects determinations for federally protected species documented in this letter.

If you have any questions or need further information, please contact me at Jill.Linn@wbienergy.com or Leslie Rodman-Jaramillo of ERM at Leslie.RodmanJaramillo@erm.com.

Thank you for your time and assistance with this Project.

Sincerely,

Jill Linn
Environmental Affairs
WBI Energy Transmission, Inc.

Enclosures: Attachment A: Project Determination Letter
Attachment B: USFWS Correspondence
Attachment C: Project Overview Map
Attachment D: IPaC Official Species List

cc: Robbyn Reukauf, WBI Energy
Maggie Suter, ERM

ATTACHMENT A PROJECT DETERMINATION LETTER

WBI ENERGY TRANSMISSION, INC.
2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

May 27, 2022

Jerry Reinisch
U.S. Fish and Wildlife Service, Region 6
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

Subject: WBI Energy Transmission, Inc.
Proposed Wahpeton Expansion Project
Cass and Richland Counties, North Dakota
Section 7 Endangered Species Act Consultation

Dear Mr. Reinisch:

WBI Energy Transmission, Inc. (WBI Energy) operates a natural gas transmission pipeline system in the Northern Plains and is proposing to expand its system in southeastern North Dakota. The Wahpeton Expansion Project (Project) will involve constructing approximately 60.5 miles of 12-inch diameter natural gas transmission pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota, to a new Montana-Dakota Utilities Company (MDU)-Wahpeton Border Station near Wahpeton, North Dakota. The Project will include minor modifications at the Mapleton Compressor Station, a new MDU-Kindred Border Station near Kindred, North Dakota, and new block valves and pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route. The Project overview map, located in Attachment A as Figure 1.1-1, shows the proposed pipeline route and locations of the Project facilities. Additional information, including specifics on the location and description of facilities, land requirements, and construction and restoration procedures, on the proposed Project is located in Attachment A.

This Project will allow WBI Energy to transport an additional 20.6 million cubic feet of natural gas per day to help meet growing demand for natural gas in southeastern North Dakota. Montana-Dakota Utilities Co., (MDU) a local distribution company, has engaged WBI Energy to construct this Project to fulfill MDU's need for additional uninterrupted natural gas supply at Wahpeton, North Dakota, and to extend natural gas service to the community of Kindred, North Dakota, for the first time, which has been requested by city officials and residents.

The Project is regulated by the Federal Energy Regulatory Commission (FERC) under 7(c) of the Natural Gas Act. Under the Energy Policy Act of 2005, FERC is the lead agency for coordinating federal authorizations and complying with the National Environmental Policy Act (NEPA) on natural gas pipeline projects subject to its jurisdiction. As such, FERC is required to consult with the U.S. Fish and Wildlife Service (USFWS) in compliance with Section 7 of the Endangered Species Act of 1973 (ESA). FERC's

regulations at 18 Code of Federal Regulations 380.13 designate the project sponsor as FERC's non-federal representative for informal Section 7 ESA consultation. In accordance with FERC guidelines, WBI Energy will provide the results of this consultation to FERC and notify FERC if any federally listed species or designated critical habitat may be affected by the Project.

WBI Energy has retained ERM-West, Inc. (ERM) to assist with the environmental review and permitting for the Project.

WBI Energy is requesting that the USFWS North Dakota Ecological Services Field Office located in Bismarck, North Dakota, provide technical assistance with the effects determinations for those federally listed species that are discussed in this letter. Written concurrence, or comments otherwise, will ensure that the applicant can provide FERC with the information necessary for an accurate and thorough assessment of federally listed species potentially affected by the proposed Project.

On September 13, 2021, on behalf of WBI Energy, ERM submitted a Project introduction letter to the USFWS, and requested review and comment on the consultation required for the Project. On February 2, 2022, during the scoping period, the USFWS submitted a letter on the FERC docket in response to the proposed Project. This is included in the USFWS agency correspondence found in Attachment B.

SPECIES LIST AND DATA REQUESTS

On May 27, 2022, ERM performed an updated query of the USFWS Information for Planning and Consultation (IPaC) system to identify federally listed species and designated critical habitat with the potential to occur within the Project area. The IPaC system generated an official species list (Attachment C) that identified five threatened, endangered, or candidate species including one mammal, three insects, and one flowering plant with the potential to occur within the Project area in Cass and Richland counties:

- Northern long-eared bat (*Myotis septentrionalis*): Threatened (Proposed Endangered)
- Dakota skipper (*Hesperia dacotae*): Threatened
- Monarch butterfly (*Danaus plexippus*): Candidate
- Poweshiek skipperling (*Oarisma poweshiek*): Endangered
- Western prairie fringed orchid (*Platanthera praeclara*): Threatened

The IPaC results indicated that designated critical habitat is not present within the Project area. North Dakota Critical Habitat Units 1, 2, and 13, which are the closest Dakota skipper designated critical habitat to the Project, are located in Richland and Ransom counties approximately 22, 26, and 27 miles west and southwest of the Project area. Additionally, North Dakota Critical Habitat Units 1 and 2, which are the closest Poweshiek skipperling designated critical habitat to the Project, are located in Richland County approximately 22 and 26 miles southwest of the Project area. ERM did not identify any additional designated critical habitat for federally listed species near the Project in North Dakota through review of the USFWS critical habitat mapper and Federal Register documentation.

In addition to USFWS communications, on October 11, 2021, ERM requested natural heritage data from the North Dakota Parks and Recreation Department (NDPRD). Data were received on December 17, 2021. On January 27, 2022, ERM requested bald eagle (*Haliaeetus leucocephalus*) nesting data from the North Dakota Game and Fish Department (NDGFD). Data were received on March 3, 2022.

SPECIES EFFECTS DETERMINATIONS

Table 1, provided below, lists the federally listed and proposed species identified from the sources described above and provides the effects determination further described in this letter. ERM has

evaluated the potential effects for each species by reviewing historical and present occurrences, availability of potential habitat within the Project area, the species' natural history, and results of desktop and field-based habitat assessments. The assessment also utilized natural heritage information from the NDPRD Natural Heritage Inventory, NDGFD and USFWS species profiles, USFWS listing and recovery plan data; and prior correspondence with the USFWS (Attachment B).

The northern long-eared bat (NLEB) is currently listed as a threatened species; however, on March 23, 2022, the USFWS proposed to reclassify the species as endangered. If this proposed rule is finalized (expected November 2022), the species would become endangered and the 4(d) rule would no longer be applicable. The Project schedule means that impacts to NLEB are possible after this status change. For the purposes of the analysis below, potential impacts under current regulations are discussed, with additional information provided to support future review. The USFWS is expected to publish additional guidance and review tools closer to the finalization of this status change.

Table 1: Federally Listed, Proposed, or Candidate Species and Federally Designated or Proposed Critical Habitat Potentially Occurring in the Project Vicinity [a]

Common Name ***Scientific name***	**Federal Status**	**Suitable Habitat Within the Project Vicinity?**	**Determination of Effect**
Mammal			
Northern long-eared bat *Myotis septentrionalis*	Threatened (Proposed Endangered)	Yes	NLAA
Insects			
Dakota skipper *Hesperia dacotae*	Threatened	No	NLAA
Monarch Butterfly *Danaus plexippus*	Candidate	Yes	N/A [b]
Poweshiek skipperling *Oarisma powshiek*	Endangered	No	NE
Flowering Plant			
Western prairie fringed orchid *Platanthera praeclara*	Threatened	No	NLAA

Notes:

NE = no effect; NLAA = may affect, not likely to adversely affect

[a] *There is no designated or proposed critical habitat within the Project area.*

[b] *N/A = not applicable. Formal determination of effect has not been concluded for the monarch because this species is currently not listed under the ESA; however, Project impacts to the monarch are anticipated to be minor.*

Northern Long-eared Bat

Current Status

The NLEB is listed as threatened under the ESA with a 4(d) rule. Section 4(d) of the ESA allows the USFWS to establish prohibitions or exceptions to prohibitions for threatened species, which do not automatically have the same protections as endangered species. The finalized 4(d) rule for the NLEB allows incidental take of bats in populations outside of the counties or districts where white-nose syndrome is known to be present (81 Federal Register [FR] 1900). The 4(d) rule applies to the entire

state of North Dakota. Under the final 4(d) rule, incidental take outside of hibernacula that results from tree removal is only prohibited when it (1) occurs within 0.25 mile (0.4 kilometer) of known NLEB hibernacula; or (2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot (45-meter) radius from the known occupied maternity trees, during the pup season (June 1 through July 31).

The USFWS is currently undergoing a review of the federal listing for the NLEB, and this species is proposed to be listed as endangered in November 2022. If the species is listed as endangered, the 4(d) rule will no longer be applicable. The USFWS anticipates publishing additional guidance for the species closer to the final rule publication. Although WBI Energy cannot anticipate the details of this guidance, it is likely that projects outside of occupied habitats with limited tree felling will have little impact to this species.

The NLEB is very susceptible to white-nose syndrome, which has led to significant losses and caused a population concern range wide. Other sources of mortality for the NLEB include impacts to winter hibernation areas, loss or degradation of summer habitats, and wind farm operations.[1] No critical habitat has been designated for this species in or near the Project area.

Potential Habitat Surrounding and within the Project Area

The NLEB ranges across the eastern and north-central United States and all Canadian provinces west to the southern Yukon Territory and eastern British Columbia (78 FR 61046). NLEBs are considered common in only small portions of the western part of its range (i.e., Black Hills of South Dakota) and are uncommon or rare in the western extremes of the range (78 FR 61046). During winter, NLEBs hibernate in large caves and mines that have large passages and entrances, constant temperatures, and high humidity with no air currents. Estimated NLEB hibernation season in North Dakota is from October 1 through May 15.[2]

Across their range, migration between winter hibernacula and summer habitat occurs from mid-March to mid-May with bats returning to hibernacula from mid-August to mid-October. In the summer, NLEBs roost underneath bark, in cavities, and in crevices of live and dead trees that either retain their bark or provide suitable cavities or crevices. NLEBs are opportunistic in their selection of tree species used for roosting, and have been documented using numerous tree species, utilizing both crevices and bark of trees as well as a range of stem diameters and heights. In Minnesota, common roost tree species have been documented and include aspen (*Populus* spp.), oak (*Quercus* spp.), and maple (*Acer* spp.).[3]

In North Dakota, NLEBs summer maternity season is typically from April 1 through September 30. Breeding occurs in late July in northern regions and females store sperm until spring (78 FR 61046). Maternity colonies form in the summer months where females give birth to a single bat (pup). Most bats within a colony give birth around the same time, from late May or early June to late July, where maternity colonies containing females and young typically have 30 to 60 bats at the beginning of the summer.[1]

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1 U.S. Fish and Wildlife Service. 2022. *Myotis septentrionalis*. Available online: https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis. Accessed March 2022.

2 Wisconsin Department of Natural Resources, Bureau of Natural Heritage Conservation. 2017. *Northern Long-Eared Bat (Myotis septentrionalis) Species Guidance*. PUB ER-700. Available online: https://dnr.wi.gov/files/PDF/pubs/er/ER0700.pdf. Accessed: March 2022.

3 Swingen, M., R. Moen, M. Walker, R. Baker, G. Nordquist, T. Catton, K. Kirschbaum, B. Dirks, and N. Dietz. 2018. Northern long-eared bat Roost Tree Characteristics 2015-2017. Natural Resources Research Institute, University of Minnesota Duluth. Regents of the University of Minnesota. Technical Report NRRI/TR-2018/41. Available online: https://conservancy.umn.edu/bitstream/handle/11299/204334/NRRI-TR-2018-41.pdf?sequence=1. Accessed: February 2022.

This species has only been identified in a few locations in North Dakota, which include forested habitat in the Turtle Mountains, and the riparian corridors of the Little Missouri and Missouri rivers.[4] Of these known occurrences, the nearest documented NLEB to the Project area is greater than 180 miles away in the Missouri River Valley. In addition to the Missouri River Valley and the Badlands of western North Dakota, Gillam et al. (2015)[5] document one observation of the NLEB in Fort Buford, McKenzie County, and in the Little Missouri National Grassland, which is located in parts of McKenzie, Billings, Slope, and Golden Valley counties. Minnesota records for NLEB are from the north-central and eastern half of the state, including Becker County, Minnesota, located approximately 40 miles east/northeast of the Project area.[5,6] Dominant vegetation types crossed by the Project consist of agricultural grain and row crops. Less than 1 percent of the Project area is classified as forested land, and there are no large, contiguous forested habitats within the Project vicinity. Therefore, highly suitable NLEB habitat is not present within the Project area. There are no known NLEB hibernacula or maternity roosts within 50 miles of the proposed Project (78 FR 61046),[7] and no caves or mines are present within the Project area that would provide suitable winter habitat.

Effects Analysis

The Project site is within the probable range of NLEB; however, no documented occurrences of the species have been recorded in Cass or Richland counties, North Dakota.[5] Construction of the Project is anticipated to occur from spring to late fall of 2024, which overlaps the active and breeding season of the NLEB. Less than 1 percent of the Project footprint consists of forested areas. Once construction is complete, approximately 1.1 acre of forested land will be retained as open land within the new permanent right-of-way. No forested lands are located within the aboveground facilities, contractor yards, access roads, or valve site locations. WBI Energy has implemented measures (e.g., avoidance of wooded areas to the extent possible when developing the proposed pipeline route; proposing use of the guided bore crossing method at select feature crossings; and reducing workspaces at contractor yards) to avoid and minimize impacts on vegetation including forested lands. Small patches of trees are present along riparian corridors, windrows, and shelterbelts, which could provide potentially suitable roosting trees. However, there are no large forested habitats in the vicinity of the proposed Project, and suitable habitat is very limited. In addition, there are no known hibernacula or maternity roosts within 50 miles of the proposed Project. Therefore, the Project is not anticipated to have any direct or indirect impacts on the NLEB.

Determination

Due to the overall lack of suitable habitat within and immediately adjacent to the Project area, in addition to no known presence of the species within Cass and Richland counties, the Project may affect, but is not likely to adversely affect, the NLEB. Until the USFWS review is complete, the NLEB is listed as "threatened" and the 4(d) rule still applies; therefore, WBI Energy completed an IPaC determination key for the Project (Attachment D), based on that submission the USFWS determined the activities related to the Project are consistent with those analyzed in the USFWS's January 5, 2016, Programmatic Biological Opinion. Given the small amount of tree clearing that will occur, and the lack of documented occurrences

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4 North Dakota Game and Fish Department. 2019. *Northern Long-eared Bat*. Available online: https://gf.nd.gov/wildlife/id/bats/northern-long-eared. Accessed March 2022.

5 Gillam, E., J.J. Nelson, and P. Barnhart. 2015. *North Dakota State Bat Management Plan*. North Dakota Game and Fish Department. Available online: https://gf.nd.gov/sites/default/files/publications/nd-state-bat-management-plan.pdf. Accessed April 2022.

6 Minnesota Department of Natural Resources. 2022. *Myotis septentrionalis: Northern Long-eared Bat.* Rare Species Guide. Available online: https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AMACC01150. Accessed April 2022.

7 North Dakota Game and Fish Department. 2019. *Species Identification (Common, Game and SCP Species)*. Available online: https://gf.nd.gov/wildlife/id. Accessed: March 2022.

of NLEB in the Project area, the Project *may affect, but is not likely to adversely affect* the NLEB. Any impacts to NLEB would fall under the final 4(d) rule, and would not be prohibited.

If the proposed rule to list the species is finalized, the Project will reengage with USFWS as required to reassess impacts. However, based on the very small amount of proposed tree felling (less than 2 acres) and the distance to known occupied habitats (over 50 miles), it is likely that a determination of *may affect, but is not likely to adversely affect* the NLEB will still be applicable.

Dakota Skipper

Current Status

The Dakota skipper (DASK) was listed as threatened under the ESA in 2014. Critical habitat for DASK has been designated in North Dakota, South Dakota, and Minnesota (80 FR 59248). Main threats to DASK and its habitat include cattle grazing, haying, lack of habitat management, pesticide use, flooding, habitat fragmentation, isolation of populations, and prairie conversion.[8] Other risks relate to climate change, including catastrophic drought.[9]

Potential Habitat Surrounding and within the Project Area

Within the United States, DASK has been extirpated from Illinois and Iowa, and are now only present in scattered isolated sites in western Minnesota, northeastern South Dakota, and the northern half of North Dakota.[10] The Project area is within the DASK's historical range and the species was historically documented within Richland County. These historical locations of known DASK observations within Richland County were concentrated within the northwestern and southcentral townships of the County. There are no recent records of the DASK in the Project area and it is now considered extirpated in Richland County.

DASK inhabit two types of prairie habitat; low wet-mesic prairie with little topographic relief that occurs on near-shore glacial lake deposits (Type A) and dry-mesic mixed-grass prairie dominated by mixed bluestem (*Andropogon* spp.) and green needlegrasses (*Nassella viridula* [Trin.] Barkworth) occurring primarily on rolling terrain over gravelly glacial moraine deposits (Type B).[10] Both habitat types contain an abundance of flowering plants and alkaline soils. In dry mixed-grass prairie, DASK can be found along ridges and hillsides.[11]

DASK complete one generation per year.[11] The larvae overwinter at or below ground level. During the spring, the larvae emerge to complete their development. The larvae eventually pupate in June.[12] Adults generally emerge in mid-June to early July and mate during a 2- to 4-week flight period.[11, 12] Peak flight times occur within a span of about 10 days in early July each year.[9] Females lay eggs on a range of broadleaf plants and grasses,[12] which hatch after incubating for 7 to 20 days.[11] Little bluestem (*Schizachyrium scoparium*) is often selected for both egg laying and as a food source for larvae.[12] Nectar

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8 Selby, G. 2006. *Effects of Grazing on the Dakota Skipper Butterfly; Prairie Butterfly Status Surveys 2003-2005*. Final Report. Minnesota Department of Natural Resources. Available online: https://files.dnr.state.mn.us/eco/nongame/projects/consgrant_reports/2006/2006_selby.pdf. Accessed: March 2022.

9 U.S. Fish and Wildlife Service. 2018. *Dakota Skipper (Hesperia dacotae), Report on the Species Status Assessment, Version 2 - September 2018.* Available online: https://ecos.fws.gov/ServCat/DownloadFile/155865. Accessed: March 2022.

10 U.S. Fish and Wildlife Service. 2016. *Dakota Skipper Conservation Guidelines*.

11 Cochrane, J. F., and P. Delphey. 2002. *Status Assessment and Conservation Guidelines: Dakota skipper: Hesperia dacotae (Skinner), (Lepidoptera: Hesperiidae): Iowa, Minnesota, North Dakota, South Dakota, and Manitoba*. U.S. Fish and Wildlife Service. Available online: https://ecos.fws.gov/ServCat/DownloadFile/4020?Reference=4171. Accessed March 2022.

12 Vaughan, D. M., and M. D. Shepherd. 2005. Species Profile: *Hesperia dacotae*. In Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds), *Red List of Pollinator Insects of North America*. CD-ROM Version 1 (May 2005). Portland, OR: The Xerces Society for Invertebrate Conservation. Available online: https://xerces.org/endangered-species/species-profiles/at-risk-butterflies-moths/dakota-skipper. Accessed: January 2022.

sources for adults vary regionally and include purple coneflower (*Echinacea* sp.), blanketflowers (*Gaillardia* sp.), black-eyed Susans (*Rudbeckia* sp.), and evening primrose (*Calylophus serrulatus*).[11, 12]

The best available information for the presence of the DASK comes from the *Population Distribution and Occupancy Status* section of the Federal Register (79 FR 63672) documenting species presence, species surveys by Royer et al. (2014),[13] and from the USFWS DASK North Dakota Survey Protocol.[14] The closest documented population to the Project area includes one site within the Sheyenne National Grassland complex in Ransom County; however, the status of DASK at this site is currently unknown, since the species was not observed during subsequent surveys. In addition, the Federal Register (79 FR 63672) states that DASK habitat in the Sheyenne National Grassland complex have experienced intensive grazing, leafy spurge (*Euphorbia esula*) invasions, and extensive herbicide use leading to habitat modifications and resulting in the extirpation of DASK from previously known sites. [11,15] Historical records of DASK have also been recorded southwest of the Project area (greater than 2 miles southwest of milepost 25.7) within suitable grassland habitat[16]; however, the Project area does not contain suitable DASK habitat but is largely composed of agricultural land, which comprises approximately 92 percent of the vegetation resources within the Project area.[17]

There is no critical habitat for the species within 20 miles of the Project Area. There is one critical habitat site in Richland County and two critical habitat sites in Ransom County (80 FR 59248). Critical Habitat Unit 4, which is the closest critical habitat in Minnesota, is located in Clay County more than 20 miles from the Project area. North Dakota Critical Habitat Units 1, 2, and 13 are located in Richland and Ransom counties approximately 22, 26, and 27 miles west and southwest of the Project area, respectively.

WBI Energy consulted with the NDPRD regarding ecological communities through the Natural Heritage Program and was provided a list of ecological communities within 1 mile of the Project. For the majority of these ecological communities, the last observations date back to the late 1990s, but consisted of the following: wet-mesic tallgrass prairie, wet prairie, northern reedgrass wet meadow, sand mixed-grass prairie, and dry-mesic tallgrass prairie. These communities are located near the Project area at mileposts 34 to 37.

WBI Energy conducted a habitat assessment of the vegetation within the Project area in the fall of 2021. In the USFWS Dakota Skipper North Dakota Survey Protocol,[14] suitable habitat for the DASK is defined as native prairies containing native grasses and diverse forbs. Croplands, non-native haylands, pastures, shrublands, forests, or other grasslands dominated by non-native plant species are typically not considered suitable for DASK. Following this guidance, suitable habitat for DASK was not documented within the Project area.

DASK are not likely to be present in the dominant vegetation found within the Project area including cropped areas, previously cropped areas, non-native haylands/pastures, or other grassland that is dominated by non-native species. Overall, there is a strong correlation between DASK occurrences and the dominance of native grasses in habitat, which indicates that populations of DASK and their

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13 Royer, R.A., M.R. Royer, and E.A. Royer. 2014. *Dakota Skipper Field Survey and Habitat Assessment at 12 North Dakota Sites during the 2014 season*. Minot: Minot State University.

14 U.S. Fish and Wildlife Service. 2018. *2018 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol*. Available online: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd639206.pdf. Accessed March 2022.

15 Delphey, P., E. Runquist, C. Nordmeyer. 2017. *Plan for the Controlled Propagation, Augmentation, and Reintroduction of Dakota Skipper (Hesperia dacotae)*. Available online: https://www.lccmr.mn.gov/projects/2014/finals/2014_05j1_DakotaSkipper_report.pdf. Accessed March 2022.

16 U.S. Fish and Wildlife Service. 2022. Personal communication (electronic correspondence) between USFWS (J. Reinisch) and ERM (L. Rodman-Jaramillo) January 19, 2022.

17 WBI Energy Transmission, Inc. *Wahpeton Expansion Project Draft Resource Report 3*. Draft Resource Report 3 was filed with the Federal Energy Regulatory Commission on March 3, 2022.

persistence require native grasses for survival.[9] For example, Davis (2020)[18] documented that pastures dominated by smooth brome (*Bromus inermis*) provide poor habitat for DASK larvae as the widely spaced stems are unsuitable for their shelter-building behavior. Additionally, Nordmeyer et al. (2021)[19] observed negative effects on DASK larvae growth and survival resulting from foraging on invasive grass species, including smooth brome and Kentucky bluegrass. Smooth brome and Kentucky bluegrass were documented during the 2021 habitat assessment as typical species observed within the agricultural and grassland areas of the Project area. In addition, DASK are unlikely to use the Project area during dispersal as they are not known to disperse widely. DASK have a mean mobility of 3.5 (standard deviation = 0.7) on a scale of 0 (sedentary) to 10 (highly mobile).[20, 21] Delphey et al. (2017)[15] document a mark-recapture study where adult DASK movements were less than 984 feet (300 meters) over 3 to 7 days, and marked adults crossed less than 656 feet (200 meters) of unsuitable habitat between two prairie patches, and they typically moved along ridges than across valleys. Delphey et al. (2017)[15] suggested that DASK dispersal is limited in part to their short life span and single annual flight. As a result, DASK extirpation from a site is likely permanent unless it is within about 0.62 mile of a site that generates a sufficient number of emigrants, or the species is reintroduced to a site (79 FR 63672).[21]

As documented in the North Dakota summary section within the *Population Distribution and Occupancy Status* section of the Federal Register (79 FR 63672), "*although only a small fraction of all grassland in North Dakota has been surveyed for Dakota skippers, a significant proportion of the un-surveyed area is likely not suitable for Dakota skipper*." Additionally, "*surveys for the Dakota skipper are typically conducted only in areas where floristic characteristics are indicative of their presence*. *New potential sites surveyed are generally focused on prairie habitat that appears suitable for the species and has a good potential of hosting the species*…"

Effects Analysis

While DASK are not specifically known to occur within the Project area, they may be present within suitable habitat located outside of the Project area during the annual flight period. Outside of the flight period, DASK eggs and larvae would be restricted to reproductive habitats, which include native grassland comprising diverse forbs and bunchgrasses,[14] which are not known to occur within the Project area. Adult DASK are generally believed to avoid areas of active disturbance[21]; however, they can traverse areas of disturbance or be driven by wind into disturbed areas. As described above, DASK are not known to disperse widely and have relatively low mobility[15]; therefore, we do not expect DASK dispersal within the Project area.

The Project would involve disturbances related to the physical presence of people, development activities, and moving vehicles and equipment within the Project area, which may be visually or physically disruptive to DASK.[21] There is no evidence suggesting that acoustics from the construction and operation of the Project would elicit a disruptive (positive or negative) behavioral response or injurious physiological impairment to adults or larvae of the species.[21] Human presence is expected to have no effect to the egg or larval stages, but adult DASK could be consistently disturbed during the adult flight period. The

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18 Davis, K.A. 2020. *The Status of Dakota Skipper (Hesperia dacotae Skinner) in Eastern South Dakota and the Effects of Land Management.* Electronic Theses and Dissertations. 3914. South Dakota State University. Available online: https://openprairie.sdstate.edu/etd/3914/. Accessed March 2022.

19 Nordmeyer, C.S., E. Runquist, and S. Stapleton. 2021. "Invasive grass negatively affects growth and survival of an imperiled butterfly." *Endangered Species Research* 45:301–314.

20 Burke, R., J. Fitzsimmons, and J. Kerr. 2011. "A mobility index for Canadian butterfly species based on naturalists' knowledge." *Biodiversity and Conservation* 20:2273–2295.

21 U.S. Fish and Wildlife Service. 2017. *Draft Final Biological Opinion on the effects to the Dakota skipper from the Antelope Master Development Plan: the proposed construction and operation of 49 oil and gas wells on 9 well pads in McKenzie County, North Dakota.* USFWS Reference # 2017-F-0081. Available online: https://www.fs.usda.gov/nfs/11558/www/nepa/104208_FSPLT3_4274833.pdf. Accessed March 2022.

disturbance could cause individuals to move from resting/nectaring locations or alter the flight paths of adults. These direct and indirect effects on DASK are those with the potential to occur if the Project area contained suitable DASK habitat and species' presence; however, we do not expect these effects on DASK for the proposed Project.

Project construction activities create an opportunity for introducing and spreading noxious weeds and invasive plant species within the Project area. Noxious weeds and invasive plants can out compete native forbs that are food sources for DASK.[21] Noxious weeds were observed concurrently with wetland and waterbody surveys and were not timed to coincide with any specific morphological state. Weed species identified during surveys were limited to one species—Canada thistle (*Cirsium arvense*). Weed control measures, including providing contractor education on noxious weeds, implementing preventative measures (e.g., flagging existing noxious weed infestations, cleaning equipment, segregating topsoil; and implementing reclamation following FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* [FERC Plan][22] and *Wetland and Waterbody Construction and Mitigation Procedures* [FERC Procedures]),[23] and implementing treatment methods will be incorporated into the Project to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area.

After soil is cleared in disturbed non-agricultural upland areas within the right-of-way and additional temporary workspace (ATWS) in accordance with the FERC Plan, revegetation efforts would include using seed mixes approved by the Natural Resources Conservation Service (NRCS), or landowners, and would provide habitat for the DASK while reducing habitat fragmentation along the Project alignment. Based on recommendations provided by the NRCS, WBI Energy proposes to use seed mixes designed for reseeding land in accordance with the North Dakota Department of Transportation 2020 *Standard Specifications for Road and Bridge Construction*.[24] Table 2 provides the NRCS-approved seed mixes for lands crossed by the Project. In addition to those species listed in Table 2, the NRCS also suggested adding 10 pounds of oats per acre to serve as a companion or nurse crop, which would reduce erosion and weed competition.

Table 2: Proposed Upland Seed Mixes for Lands Crossed by the Project

Species	PLS Lbs/Acre	Percent of Mix
North Dakota Department of Transportation Mix		
Western wheatgrass *Pascopyrum smithii* (Rydb.) A. Love	9.6	20
Switchgrass *Panicum virgatum* L	1.6	20
Green needlegrass *Nassella viridula* [Trin.] Barkworth	3.6	20
Canada wild-rye *Elymus canadensis*	5.2	20

22 Federal Energy Regulatory Commission. 2013. *Upland Erosion Control, Revegetation, and Maintenance Plan*. Available online: https://www.ferc.gov/sites/default/files/2020-04/upland-erosion-control-revegetation-maintenance-plan.pdf. Accessed March 2022.

23 Federal Energy Regulatory Commission. 2013. *Wetland and Waterbody Construction and Mitigation Procedures*. Available online: https://www.ferc.gov/sites/default/files/2020-04/wetland-waterbody-construction-mitigation-procedures.pdf. Accessed March 2022.

24 North Dakota Department of Transportation. 2020. *Standard Specifications for Road and Bridge Construction*. Available online: https://www.dot.nd.gov/divisions/environmental/docs/supspecs/2020%20Standard%20Specifications%20for%20Road%20and%20Bridge%20Construction.pdf. Accessed March 2022.

Species	PLS Lbs/Acre	Percent of Mix
Slender wheatgrass *Elymus trachycaulus*	5.0	20
Total	**25.0**	**100**

Note: Lbs/Acre = pounds per acre; PLS = pure live seed

Determination

Due to the overall lack of suitable DASK habitat within and immediately adjacent to the Project area, as well as the species' poor dispersal abilities, and the implementation of the proposed mitigation measures (e.g., implementation of weed control measures and revegetation efforts), the Project *may affect, but is not likely to adversely affect,* DASK or its habitat.

Poweshiek Skipperling

Current Status

Poweshiek skipperling is listed as endangered under the ESA. Critical habitat for the Poweshiek skipperling occurs in North Dakota, South Dakota, Minnesota, Iowa, Michigan, and Wisconsin (80 FR 59248). North Dakota Critical Habitat Units 1 and 2, which are the closest critical habitat to the Project, are located in Richland County approximately 22 and 26 miles southwest of the Project area, respectively. Critical Habitat Units 4, 18, and 11, which are the closest critical habitat in Minnesota, are located in Clay and Wilkin counties more than 20 miles from the Project. Similar to the threats identified for DASK, main threats to Poweshiek skipperling and its habitat include cattle grazing, habitat loss, habitat fragmentation and isolation of populations, and periods of prolonged drought.[25, 26]

Potential Habitat Surrounding and within the Project Area

The Project area is within the Poweshiek skipperling's historical range. There are historical records from 16 sites in seven of North Dakota's counties, including Cass and Richland counties, for this species. The most recent observation of Poweshiek skipperling within its historical range in North Dakota was in 2001.[26] The NDGFD document that this species is rare and believed to be extirpated in North Dakota and the USFWS document that Poweshiek skipperling may have been extirpated from the Dakotas, Minnesota, and Iowa within the last 10 years.[27] The USFWS designated critical habitat for the Poweshiek skipperling is located in North Dakota, South Dakota, Minnesota, Iowa, Michigan, and Wisconsin. There is no designated critical habitat within 20 miles of the Project area.

Historically, the Poweshiek skipperling was distributed throughout tallgrass and mixed-grass prairie habitats of Illinois and Iowa in the south, to Michigan in the east, North Dakota and South Dakota in the west, and southern Manitoba in the north.[28] The Poweshiek skipperling has undergone rangewide declines in number of individuals and the location of populations and may have been extirpated from the

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25 Minnesota Department of Natural Resources. 2022. *Oarisma poweshiek: Poweshiek Skipperling*. Rare Species Guide. Available online: https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=IILEP57010. Accessed: March 2022.

26 Selby, G. 2010. *Status assessment update (2010): Poweshiek skipperling (Oarisma poweshiek (Parker)) (Lepidoptera: Hesperiidae)*. Prepared for Twin Cities Ecological Services Field Office, United States Fish and Wildlife Service, Bloomington, MN. 29 p.

27 U.S. Fish and Wildlife Service. No Date. *Oarisma poweshiek*. Available online: https://www.fws.gov/species/poweshiek-skipperling-oarisma-poweshiek. Accessed: March 2022.

28 U.S. Fish and Wildlife Service. 2021. *Draft Recovery Plan for the Poweshiek Skipperling (Oarisma poweshiek)*. Available online: https://ecos.fws.gov/docs/recovery_plan/POSK%20Draft%20Recovery%20Plan_06152021_508%20compliant.pdf. Accessed: March 2022.

Dakotas, Minnesota, and Iowa within the last 10 years. Poweshiek skipperling populations are now known only from Wisconsin, Michigan, and Manitoba.[29, 30]

Poweshiek skipperling inhabit remnant prairie habitats including prairie fens, grassy lake and stream margins, moist meadows, sedge meadows, and wet-to-dry prairies with hillsides. Primary habitat plant species for Poweshiek skipperling include bluestem and purple coneflower.[28]

Poweshiek skipperling complete one generation per year, including a single flight period lasting 2 to 4 weeks. Adult Poweshiek skipperling emerge from mid-June to early July when they rely on high-quality nectar from flowers for feeding and a source of healthy and abundant host plants for egg laying.[31] Nectar plants vary geographically; nectar sources documented in North Dakota include smooth ox-eye (*Heliopsis helianthoides*) and purple coneflower.[32] Plant sources for egg laying and larval food include prairie dropseed (*Sporobolus heterolepis*), little bluestem, sideoats grama (*Bouteloua curtipendula*), and sedges (*Carex* spp.). Poweshiek skipperling overwinter as larvae above ground dependent on blades and/or stems of host plants; therefore, this species also requires suitable microclimate conditions for shelter during winter.[28] WBI Energy conducted a habitat assessment of the vegetation within the Project area in the fall of 2021. Suitable habitat for Poweshiek skipperling was not documented within the Project area; however, there is historically documented potential habitat outside of the Project area. Poweshiek skipperling are not likely to be present in the dominant vegetation found within the Project including cropped areas, previously cropped areas, non-native haylands/pastures, or other grassland that is dominated by non-native species.[31]

Determination

Due to the lack of suitable habitat and the likelihood that this species has been extirpated from the state,[27] WBI Energy has determined that the Project will have *no effect* on Poweshiek skipperling. Due to the distance between the Project and designated critical habitat, the Project is not anticipated to have an effect on Poweshiek skipperling critical habitat.

Western Prairie Fringed Orchid

Current Status

The western prairie fringed orchid (WPFO) is listed as threatened under the ESA. Identified threats to the WPFO throughout its range include woody encroachment, invasive plant species, siltation, erosion, altered fire regimes, land use/management changes (e.g., conversion of remnant prairie to cropland), and the use of herbicides and insecticides.[33]

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29 U.S. Fish and Wildlife Service. 2022. *ECOS Environmental Conservation Online System. Poweshiek skipperling (Oarisma poweshiek)*. Available online: https://ecos.fws.gov/ecp/species/9161. Accessed March 2022.

30 North Dakota Game and Fish Department. 2019. *Species Identification (Common, Game and SCP Species)*. Available online: https://gf.nd.gov/wildlife/id. Accessed: March 2022.

31 U.S. Fish and Wildlife Service. 2021. *Poweshiek Skipperling (Oarisma poweshiek) Species Needs Assessment.* Bloomington, MN. Available online: https://ecos.fws.gov/docs/recovery_plan/Poweshiek%20Skipperling%20Species%20Needs%20Assessment_508%20compliant.pdf. Accessed: March 2022.

32 Swengel, A. B., and S. R. Swengel. 1999. "Observations of prairie skippers (Oarisma poweshiek, Hesperia dacotae, H. ottoe, H. leonardus pawnee, and Atrytone arogos iowa) (Lepidoptera: Hesperiidae) in Iowa, Minnesota, and North Dakota during 1988-1997." *The Great Lakes Entomologist* 32:267–292.

33 U.S. Fish and Wildlife Service. 2009. *Western Prairie Fringed Orchid 5-Year Review: Summary and Evaluation*. Bloomington, MN. Available online: https://ecos.fws.gov/docs/five_year_review/doc2412.pdf. Accessed: March 2022.

Potential Habitat Surrounding and within the Project Area

The WPFO is found in Iowa, Kansas, Minnesota, Missouri, Nebraska, and North Dakota. In North Dakota, the WPFO distribution is confined to Richland and Ransom counties. The USFWS 2020 5-year review on the WPFO indicates that since 2009[33] there has been one new population discovered, and nine populations are now considered extirpated (primarily concentrated within the Sheyenne National Grassland) by the North Dakota Natural Heritage Program, as no orchids have been observed since 1995 or the habitat is no longer suitable.[33] The Sheyenne National Grassland is located more than 8 miles west/southwest of the Project area. Natural heritage data provided by the NDPRD documented one historical record (observation greater than 35 years ago) of the WPFO within 1 mile of the Project area to the east of milepost 30.4. The Project area is within the WPFO historical range. Based on USFWS 5-year species review, the WPFO has not been regularly surveyed outside of the Sheyenne National Grassland in North Dakota since the 1990s.

This species is found almost exclusively in remnant native plant communities.[34] In North Dakota, the WPFO most frequently occurs in sedge meadow communities on the Glacial Sheyenne Delta as well as the tallgrass prairie community classified as the Midland Grassland habitat type.[35] Associated plant species include big bluestem (*Andropogon gerardii*) and little bluestem, several sedge species, switchgrass (*Panicum virgatum*), and prairie sandreed (*Calamovilfa longifolia*).[36] WPFO habitat conditions vary across its geographic range; however, one common factor thought to influence the growth of this species is groundwater depth. In southeastern North Dakota, preferred habitat for the species includes northern wet prairie, northern mesic prairie, and prairie wet meadows. The populations of WPFO found within the Sheyenne National Grassland are located in sedge meadows associated with lowland depressions, called swales.[37]

The WPFO relies on its relationship with mycorrhizal soil fungi for seed germination and seedling development. This species has been documented emerging as early as late-March in southwestern Minnesota and senescence generally occurs in late September or earlier if the soil moisture is abnormally low. Peak flowering typically occurs from early to mid-July. The WPFO is also reliant on sphinx moth populations for seed production.[34]

WBI Energy conducted a habitat assessment of the vegetation within the Project area in the fall of 2021. The WPFO was not documented during the field surveys; however, surveys were not conducted during the peak blooming season for this species. Suitable habitat for the WPFO such as prairie and sedge meadows and associated native prairie plant species (e.g., big and little bluestem, sedges, switchgrass, and prairie sandreed) were not observed in the Project area. The WPFO is not likely to be present in the dominant vegetation found within the Project area—including cropped areas, previously cropped areas, non-native haylands/pastures, or other grassland that is dominated by non-native species.

As indicated on the Minnesota Department of Natural Resource (MNDNR) site,[34] conservation efforts for the WPFO should be directed toward protecting "*high quality, intact, native habitat*," which further indicate the specialized habitat that the WPFO is dependent upon and that is not present within the Project area.

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34 Minnesota Department of Natural Resources. 2022. *Platanthera praeclara: Western Prairie Fringed Orchid.* Rare Species Guide. Available online: https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PMORC1Y0S0. Accessed: March 2022.

35 U.S. Fish and Wildlife Service. 1996. *Platanthera praeclara (Western Prairie Fringed Orchid) Recovery Plan*. U.S. Fish and Wildlife Service, Ft. Snelling, MN. Available online: https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2014/HP14-002/rstexhibit/24.pdf. Accessed: March 2022.

36 Sieg, C.H., and A.J. Bjugstad. 1994. "Five years of following the western prairie fringed orchid (*Platanthera praeclara*) on the Sheyenne National Grassland, North Dakota." *North Amer. Prairie Conf.* 13:141–146. Available online: https://library.ndsu.edu/ir/bitstream/handle/10365/3242/634sie92.pdf?sequence=1&isAllowed=y. Accessed: March 2022.

37 Wolken, P.M., C.H. Sieg, and S.E. Williams. 2001. "Quantifying suitable habitat of the threatened western prairie fringed orchid." *Journal of Range Management* 54:611–616.

Further noted on the MNDNR's site,[34] annual haying can present problems for long-term WPFO survival, particularly if the haying occurs prior to seed capsule maturation; the WPFO reproduces entirely by seed, and annual mowing could lead to reproductive failure and eventually population collapse.[34] Given that the majority of land in the Project area is agricultural, which would include utilizing methods such as haying and mowing, the WPFO is not likely to be present within the Project area.

Effects Analysis

The majority of the land in the Project area is agricultural (approximately 92 percent), which includes rotated croplands. Limited areas of scrub-shrub and forested wetlands are found within the Project area. Construction of the proposed pipeline will require clearing and grading of the temporary right-of-way, which will temporarily impact vegetation communities. The permanent right-of-way will be maintained as cropland or other herbaceous and shrub vegetation communities while the remaining temporary workspace along the construction right-of-way and any ATWS areas will be allowed to revert to preconstruction conditions. Implementation of the measures specified in the FERC Plan and the FERC Procedures will minimize Project-related impacts on affected vegetation communities.

Following construction, WBI Energy will revegetate disturbed non-agricultural upland areas within the right-of-way and ATWS in accordance with the FERC Plan using seed mixes approved by the NRCS or landowners. Revegetation will provide protection against erosion. In areas where final grade and cleanup is completed during active construction, WBI Energy will comply with the timelines for seeding identified in the FERC Plan (weather and soil conditions permitting) or as recommended by the NRCS or Farm Service Agency (subject to approval by landowners). Timely restoration of the construction right-of-way, reseeding with the appropriate seed mixes, and the use of effective erosion control measures will minimize the duration of vegetation disturbance.

Construction and operation impacts on wetland vegetation will be minimized by implementing the measures identified in the FERC Plan and the FERC Procedures.

Project construction activities create an opportunity for introducing and spreading noxious weeds and invasive plant species within the Project area. Noxious weeds and invasive plants can out compete native forbs and grasses, which provide habitat for the WPFO. Weed control measures, as described above, including providing contractor education on noxious weeds, implementing preventative measures, and implementing treatment methods have been incorporated into the Project to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area.

Determination

After soil is cleared in non-agricultural grassland areas, revegetation efforts would include reseeding using an NRCS-approved seed mix including native species and would reduce habitat fragmentation along the Project alignment. Because noxious weeds and invasive plants can out compete native forbs and grasses, WBI Energy would implement weed control measures to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area. Based on recommendations provided by the NRCS, WBI Energy proposes to use seed mixes (Table 2) designed for reseeding land in accordance with the North Dakota Department of Transportation 2020 *Standard Specifications for Road and Bridge Construction*.[24] Due to the lack of suitable habitat for the WPFO, including intact prairie and sedge meadows (swales) and associated native plant species, and the implementation of the proposed mitigation measures (e.g., implementation of weed control measures and revegetation efforts), WBI Energy has determined that the Project *may affect, but is not likely to adversely affect*, the WPFO.

CANDIDATE SPECIES

Monarch Butterfly

Current Status

The monarch butterfly is a candidate species under the ESA and not yet listed or proposed for listing. Candidate species are plants and animals for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species receive no statutory protection under the ESA.[38]

Two North American populations, including migratory populations east and west of the Rocky Mountains, have been monitored at their overwintering sites since the mid-1990s. Monarch butterflies found east of the Rocky Mountains, including breeding populations found in North Dakota, migrate south or southwest to mountainous overwintering grounds in central Mexico.[39] While populations normally fluctuate from year-to-year, data indicate population declines over the last two decades.[40] Threats associated with these declines include habitat loss and fragmentation, pesticide use on milkweed (*Asclepias* spp.) host plants, and changing climate.[41]

Potential Habitat Surrounding and within the Project Area

In general, habitat requirements for monarch populations include specific quantities and optimal quality of milkweed and breeding season nectar sources; however, the specific optimal amount of habitat and its spatial distribution are unknown.[40]

The monarch life cycle varies geographically. Monarchs lay their eggs on milkweed host plants and the larvae emerge after 2 to 5 days. The larvae then develop and feed on the milkweed over a period of 9 to 18 days. The larvae pupate into chrysalis and 6 to 14 days later emerge as an adult butterfly. There are multiple generations of monarchs produced during the breeding season; where most adult butterflies live 2 to 5 weeks, overwintering adults enter into reproductive diapause (suspended reproduction) and live 6 to 9 months.[40]

WBI Energy conducted a habitat assessment of the vegetation within the Project area in the fall of 2021. While field surveys were not conducted during the peak blooming season for milkweed species, surveyors documented potentially suitable habitat, including small numbers of common milkweed, for the monarch within the Project area. About 10 species of native milkweed can be found in North Dakota and additional milkweed species and/or milkweed populations are likely present within the Project area near ditches and woodland edges.[42] Monarch butterflies and their suitable habitat are not likely to be present in the dominant vegetation found within the Project including cropped areas, previously cropped areas, non-native haylands/pastures, or other grassland that is dominated by non-native species.

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38 U.S. Fish and Wildlife Service. 2022. *Candidate Conservation*. Available online: https://www.fws.gov/library/collections/candidate-conservation. Accessed March 2022.

39 North Dakota Game and Fish Department. 2019. *Pollinators*. Monarch Butterfly. Available online: https://gf.nd.gov/pollinators. Accessed: March 2022.

40 U.S. Fish and Wildlife Service. 2020. *Monarch (Danaus plexippus) Species Status Assessment Report, version 2.1*. Available online: https://ecos.fws.gov/ServCat/DownloadFile/191345. Accessed: March 2022.

41 U.S. Fish and Wildlife Service. 2021. *Monarchs*. Available online: https://www.fws.gov/initiative/pollinators/monarchs. Accessed: March 2022.

42 North Dakota Game and Fish Department. 2019. *Milkweeds and Monarchs*. Authors and Contributors: Ron Wilson. Available online: https://gf.nd.gov/magazine/2017/jun/milkweeds-monarchs. Accessed: March 2022.

Effects Analysis

Direct and indirect effects on the monarch butterfly would be visual or physical disturbances from physical presence of people, development activities, and moving vehicles. The disturbance could cause individuals to move from resting/nectaring locations or alter the flight paths of adults.

The Project has the potential to impact habitat, including nectar-bearing wildflowers, on which adult monarch butterflies might feed. The Project's permanent impacts on vegetation will be associated with aboveground facilities, permanent access roads, and the maintained pipeline right-of-way. Peripheral workspace and the majority of the workspace for the pipeline system will be returned to preconstruction conditions and allowed to revegetate, resulting in only temporary habitat impacts. Where losses of potential habitat are permanent, including about 3.4 acres for the aboveground facilities, less than 1 acre for the valve sites, and about 1 acre for the permanent access roads, it is expected that similar adjacent available habitat could be utilized, should the species be present.

Project construction activities create an opportunity for introducing and spreading noxious weeds and invasive plant species within the Project area. Noxious weeds and invasive plants can outcompete native forbs that provide food and/or sources for egg laying for the monarch butterfly. Weed control measures, as described above, and treatment methods have been incorporated into the Project to reduce the threat of introducing or spreading noxious weeds and invasive plant species within the Project area. Therefore, due to the overall lack of suitable monarch butterfly habitat within the Project area, and the implementation of the proposed mitigation measures, Project impacts to the monarch are anticipated to be minor.

OTHER FEDERALLY PROTECTED RESOURCES

Migratory Birds

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA; Title 16 United States Code Sections 703–711). The MBTA protects native migratory birds and their eggs and active nests. The MBTA prohibits intentionally taking, possessing, transporting, selling, or purchasing migratory birds and their parts, nests, or eggs without a valid permit.

Executive Order (EO) 13186 (66 FR 3853), *Responsibilities of Federal Agencies To Protect Migratory Birds*, directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the USFWS. In March 2011, FERC and the USFWS finalized a Memorandum of Understanding (MOU) to implement EO 13186. The MOU "focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration." Conservation of migratory bird habitats, avoiding or minimizing take of migratory birds, and developing effective mitigation measures to restore or enhance habitats on lands affected by an energy project are several obligatory elements in the MOU with emphasis on, but not exclusive to, the Birds of Conservation Concern. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the direct take of any migratory bird without authorization from the USFWS.

A variety of migratory bird species may occur seasonally along the proposed pipeline route. The Project is within the Central Flyway for migratory birds.[43, 44] Potential impacts on nesting migratory bird species

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43 National Audubon Society. No Date. *Flyways of the Americas*. Available online: https://www.audubon.org/birds/flyways. Accessed March 2022.

44 Dubovsky, J.A., compiler. 2020. *Central Flyway harvest and population survey data book 2020*. U.S. Fish and Wildlife Service, Lakewood CO.

include the following: habitat fragmentation; loss of wooded habitat; temporary removal of vegetation in grasslands, which could cause nesting species to relocate to other suitable habitat; and noise generated during construction, which could disturb nesting birds if present. Direct impacts on species include the potential for mortality or injury during construction from destruction of ground nests or vehicle collisions. Construction of the Project is planned to begin in the spring of 2024 subject to receipt of necessary permits and regulatory approvals, which could overlap with the migratory bird nesting season. To minimize impacts in areas where clearing cannot occur prior to the migratory bird nesting season, WBI Energy will conduct ground-based surveys within areas identified as open land for nesting birds prior to clearing of the right-of-way. If nests are identified during surveys, an appropriate buffer would be established based on the species and site-specific conditions. Construction activities in these areas could resume when the chicks have fledged or the nest is determined inactive. In areas where clearing occurs prior to migratory bird nesting but construction does not occur right after clearing, the construction area will be maintained (as needed) to avoid the regrowth of potential nesting habitat.

After construction is complete, WBI Energy will restore the right-of-way as near as practical to preconstruction condition in accordance with FERC's Plan and Procedures. Cropland will be restored to active agricultural production and other areas will be revegetated using methods and seed mixes appropriate to existing land use, cover type, or landowner preference. WBI Energy anticipates that the Project area, with the exception of forested areas on the maintained operational right-of-way and permanent aboveground facilities, will return to preconstruction conditions over time. Consequently, the Project will not permanently alter the character of available habitats for migratory birds.

Routine vegetation clearing for maintenance of the permanent right-of-way will be conducted in accordance with FERC's Plan and Procedures. The FERC Plan and Procedures do not allow routine vegetation maintenance clearing more frequently than once every 3 years with the exception of a 10-foot-wide corridor centered over the pipeline, which can be maintained annually in an herbaceous state to facilitate periodic corrosion and leak surveys. Routine maintenance clearing will not occur between April 15 and August 1 of any year, as specified in section VII.A.5 of the FERC Plan. However, the majority of the route is cropland or has low growing vegetation, which allows for regular inspection without regular clearing. In wetlands, the FERC Procedures allow for selective cutting of trees greater than 15 feet in height within 15 feet of the pipeline. As noted above, WBI Energy anticipates that the need for routine vegetation maintenance will be infrequent and limited to specific locations such as areas around pipeline markers and at road crossings.

Based on the relatively limited extent of the proposed disturbance within the broader landscape and with the implementation of the proposed mitigation and restoration measures, no substantial changes in migratory bird habitat availability or suitability are anticipated as a result of the Project. As such, the Project is not expected to result in adverse permanent impacts on migratory birds.

Eagles

The Bald and Golden Eagle Protection Act (BGEPA; Title 16 United States Code Section 668), provides additional protection to bald eagles and golden eagles (*Aquila chrysaetos*). The BGEPA prohibits the take, possession, sale, barter, offer to sell, purchase, transport, export, or import of any bald or golden eagle, alive or dead, including any part, nest, or egg unless allowed by permit. "Take" under the BGEPA is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Disturb is defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (72 FR 31131). If a proposed project or action would occur in areas where nesting, feeding, or roosting eagles

occur, then project proponents may need to take additional conservation measures to achieve compliance with the BGEPA. The BGEPA includes limited exceptions to its prohibitions through a permitting process, including exceptions to take bald or golden eagle nests that interfere with resource development or recovery operations.

Golden eagle range and nesting habitat is concentrated in southwestern North Dakota. WBI Energy reviewed golden eagle nest habitat range data available from the NDGFD, which shows there is no nest habitat for golden eagles crossed by the Project. Therefore, the proposed Project is not expected to affect golden eagles.

Bald eagle status in North Dakota include both year-round and migratory populations, where they are typically found near large rivers and lakes or wetlands bordered by mature stands of trees (e.g., cottonwood [*Populus deltoids*]). Bald eagle nests are usually found within the top quarter of tall, living trees found within 1.2 miles of water.[7] However, Johnson (2009)[45] documented that bald eagles historically have utilized atypical habitats in North Dakota. The landscape surrounding nests across the state have varied from forested landscapes to open, prairie habitat. Nests have historically been found in a single tree or shelterbelt surrounded by agriculture.[45] WBI Energy reviewed bald eagle nest location data provided by the USFWS and NDGFD. Five bald eagle nest locations were identified within 2 miles of the Project area including:

- One northeast of the proposed Kost contractor yard, which is located along the Sheyenne River and near the city of Riverside (West Fargo), North Dakota;
- Two located southwest of the proposed pipeline milepost 25.7, approximately 1.4 and 1.7 miles away from the proposed centerline;
- One located northeast of the proposed pipeline milepost 38, approximately 1.9 miles away from the proposed centerline; and
- One located northeast of the proposed pipeline milepost 59.7, approximately 1.7 miles away, which is located along the Red River.

Incidental on-the-ground raptor nest surveys were conducted during wetland and waterbody surveys (limited to the 300-foot-wide wetland/waterbody survey corridor), during which no nesting activity for bald eagles was observed. If a bald eagle nest is identified near the Project area, WBI Energy will implement the measures described in the USFWS 2007 *National Bald Eagle Management Guidelines* to avoid and minimize impacts on nesting bald eagles.[46] The proposed Project is not expected to affect bald eagles.

SUMMARY/CLOSING

WBI Energy is providing this analysis in support of federal permitting for the Wahpeton Expansion Project. Based on the above analysis, we conclude that our action *may affect but is not likely to adversely affect* the NLEB, DASK, and WPFO; the Project will have *no effect* on the Poweshiek skipperling; and Project impacts on the monarch butterfly are anticipated to be minor. Additionally, the Project is not expected to result in adverse permanent impacts on migratory birds, and the Project is not expected to affect golden or bald eagles. As noted above, WBI Energy is requesting technical assistance, and concurrence with or comments otherwise, on the effects determinations for federally protected species discussed in this letter.

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[45] Johnson, S. 2009. *North Dakota Bald Eagle Nest Summary*. North Dakota Game and Fish Department. December 2009. Available online: https://efotg.sc.egov.usda.gov/references/public/ND/ND_Bald_Eagle_Nest_Summary_2009.pdf. Accessed March 2022.

[46] U.S. Fish and Wildlife Service. 2007. *National Bald Eagle Management Guidelines*. May 2007. Available online: https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf. Accessed March 2022.

If you have any questions or need further information, please contact me at Jill.Linn@wbienergy.com or Leslie Rodman-Jaramillo of ERM at Leslie.RodmanJaramillo@erm.com.

Thank you for your time and assistance with this Project.

Sincerely,

Jill Linn
Environmental Affairs
WBI Energy Transmission, Inc.

Enclosures: Attachment A: General Project Description and Project Overview Map
Attachment B: USFWS Correspondence
Attachment C: IPaC Official Species List
Attachment D: NLEB Determination Key

cc: Robbyn Reukauf, WBI Energy
Maggie Suter, ERM

WBI ENERGY TRANSMISSION, INC.

Wahpeton Expansion Project

Resource Report 1
General Project Description

Final

Docket No.
CP22-XXX-000

May 2022

WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT
RESOURCE REPORT 1—GENERAL PROJECT DESCRIPTION

Minimum Filing Requirements:	**Addressed in Section:**
1. Describe and provide location maps of all jurisdictional facilities, including all aboveground facilities associated with the project (such as meter stations, pig launchers/receivers, valves) to be constructed, modified, abandoned, replaced, or removed, including related construction and operational support activities and areas such as maintenance bases, staging areas, communications towers, power lines, and new access roads (roads to be built or modified). As relevant, the report must describe the length and diameter of the pipeline, the types of aboveground facilities that would be installed, and associated land requirements. It must also identify other companies that must construct jurisdictional facilities related to the project, where the facilities would be located, and where they are in the Commission's approval process. —Title 18 of the Code of Federal Regulations (CFR) Part (§) 380.12(c)(1)	Section 1.1; figure 1.1.2-1; appendix 1A; and appendix 1B
2. Identify and describe all non-jurisdictional facilities, including auxiliary facilities that will be built in association with the project, including facilities to be built by other companies. i. Provide the following information: a. a brief description of each facility, including as appropriate: ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of federal, state, and local permits/approvals; b. the length and diameter of any interconnecting pipeline; c. current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities; d. correspondence with the appropriate State Historic Preservation Officer or duly authorized Tribal Historic Preservation Officer for tribal lands regarding whether properties eligible for listing on the National Register of Historic Places would be affected; e. correspondence with the United States Fish and Wildlife Service (and National Marine Fisheries Service, if appropriate) regarding potential impacts of the proposed facility on federally listed threatened and endangered species; and f. for facilities within a designated coastal zone management area, a consistency determination or evidence that the owner has requested a consistency determination from the state's coastal zone management program. ii. Address each of the following factors and indicate which ones, if any, appear to indicate the need for the Commission to do an environmental review of project-related non-jurisdictional facilities. a. whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project) b. whether there are aspects of the non-jurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity c. the extent to which the entire project will be within the Commission's jurisdiction d. the extent of cumulative federal control and responsibility. —18 CFR § 380.12(c)(2)	Section 1.7

3. Provide the following maps and photos: i. Current, original United States Geological Survey 7.5-minute series topographic maps or maps of equivalent detail, covering at least a 0.5-mile-wide corridor centered on the pipeline, with integer mileposts identified, showing the location of rights-of-way, new access roads, other linear construction areas, compressor stations, and pipe storage areas. Show nonlinear construction areas on maps at a scale of 1:3,600 or larger keyed graphically and by milepost to the right-of-way maps. ii. Original aerial images or photographs or photo-based alignment sheets based on these sources, not more than 1 year old (unless older ones accurately depict current land use and development) and with a scale of 1:6,000 or larger, showing the proposed pipeline route and location of major aboveground facilities, covering at least a 0.5-mile-wide corridor, and including mileposts. Older images/photographs/alignment sheets should be modified to show any residences not depicted in the original. Alternative formats (e.g., blue-line prints of acceptable resolution) need prior approval by the environmental staff of the Office of Energy Projects. iii. In addition to the copy required under 18 Code of Federal Regulations ("CFR") §157.6(a)(2) of this chapter, applicant should send two additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Energy Projects. —18 CFR § 380.12(c)(3)	Appendix 1A; appendix 1B; construction alignment sheets
4. When new or additional compression is proposed, include large scale (1:3,600 or greater) plot plans of each compressor station. The plot plan should reference a readily identifiable point(s) on the United States Geological Survey maps required in paragraph (c)(3) of this section. The maps and plot plans must identify the location of the nearest noise-sensitive areas (schools, hospitals, or residences) within 1 mile of the compressor station, existing and proposed compressor and auxiliary buildings, access roads, and the limits of areas that would be permanently disturbed—18 CFR § 380.12(c)(4).	Not Applicable
5. i. Identify facilities to be abandoned, and state how they would be abandoned, how the site would be restored, who would own the site or right-of-way after abandonment, and who would be responsible for any facilities abandoned in place. ii. When the right-of-way or the easement would be abandoned, identify whether landowners were given the opportunity to request that the facilities on their property, including foundations and below ground components, be removed. Identify any landowners whose preferences the company does not intend to honor, and the reasons therefore. —18 CFR § 380.12(c)(5)—18 CFR § 380.12(c)(5)	Not Applicable
6. Describe and identify by milepost, proposed construction and restoration methods to be used in areas of rugged topography, residential areas, active croplands, sites where the pipeline would be located parallel to and under roads, and sites where explosives are likely to be used.—18 CFR § 380.12(c)(6)	Section 1.3
7. Unless provided in response to Resource Report 5, describe estimated workforce requirements, including the number of pipeline construction spreads, average workforce requirements for each construction spread and meter or compressor station, estimated duration of construction from initial clearing to final restoration, and number of personnel to be hired to operate the proposed project.—18 CFR § 380.12(c)(7)	Section 1.2
8. Describe reasonably foreseeable plans for future expansion of facilities, including additional land requirements and the compatibility of those plans with the current proposal.—18 CFR § 380.12(c)(8)	Section 1.6
9. Describe all authorizations required to complete the proposed action and the status of applications for such authorizations. Identify environmental mitigation requirements specified in any permit or proposed in any permit application to the extent not specified elsewhere in this section.—18 CFR § 380.12(c)(9)	Section 1.8 and table 1.8-1
10. Provide the names and mailing addresses of all affected landowners specified in 18 CFR §157.6(d) and certify that all affected landowners will be notified as required in 18 CFR §157.6(d).—18 CFR § 380.12(c)(10)	Section 1.9; appendix 1G (filed under separate cover as Controlled Unclassified Information / Privileged and Confidential [CUI//PRIV])
Additional Information:	

Provide plot/site plans of all other aboveground facilities that are not completely within the right-of-way.	Appendix 1E (filed under separate cover as Controlled Unclassified Information / Critical Energy Infrastructure Information[CUI//CEII]; additional facility plot/site plans to be included in a subsequent draft of the resource report)
Provide detailed typical construction right-of-way cross-section diagrams showing information such as widths and relative locations of existing rights-of-way, new permanent right-of-way, and temporary construction right-of-way	Appendix 1C (typical right-of-way cross section diagrams to be included in a subsequent draft of the resource report)
Summarize the total acreage of land affected by construction and operation of the Project.	Section 1.1.3 and table 1.1-3
Federal Energy Regulatory Commission's November 17, 2021 Comments on Draft Resource Report 1:	
1. Provide all applicable agency correspondence. This includes letters, meeting notes, phone logs, and/or emails where substantive information has been discussed or received from relevant federal, state, and local agencies, and federally recognized Native American tribes.	Section 1.8. Copies of Agency Correspondence are included in applicable appendices of each resource report.
2. Provide the status of environmental and cultural resources surveys. Where surveys are pending, identify the anticipated completion date and the reason for incomplete surveys (for example, landowner access denied).	The status of environmental surveys is discussed in sections 2.2.1 and 2.3.1 of Resource Report 2 and in section 3.6 of Resource Report 3; the status of cultural surveys is discussed in section 4.3.2.1 of Resource Report 4.
3. Clarify whether the demand for natural gas service in Kindred and Wahpeton, North Dakota is for residential, commercial, or industrial uses.	Section 1.1.1
4. Many railroad operators require 24-hour installation of pipelines which cross railroads (i.e., boring under the railroad must continue without stopping until the railroad is crossed). Clarify if 24-hour construction would be required at any railroad crossing.	Section 1.3.2.3
5. Clarify if trench dewatering or any other additional activities (beyond those listed) may be required up to 24-hours a day. Clarify if lost workdays due to poor weather or anticipated poor weather (or any other additional circumstances) would result in work on Sundays and/or seven days per week.	Section 1.2
6. WBI Energy indicates that farm taps may be installed. Indicate: i. if the farm taps would be installed by WBI Energy and if they would be within the permanent easement and require new access roads; ii. what the tap facility would consist of (e.g., fenced, aboveground, belowground); iii. when and how the locations for the farm taps would be decided (including mapping as appropriate); and iv. any impacts that would occur on resources, and measures to be implemented to avoid, minimize, or mitigate impacts.	Section 1.1.3.5
7. Clarify whether there is potential to partially overlap the construction right-of-way with abutting rights-of-way in collocated segments.	Section 1.1.3.1
8. Clarify the pipeline depth of cover at ditches, which was reported as both 15 feet (section 1.3.2.1) and 6 feet (section 1.3.2.3).	Sections 1.3.1.4, 1.3.2.1, and 1.3.2.3
9. Clarify how roads affected by construction would be returned to as good or better condition (e.g., using pre-construction video or photo documentation).	Section 1.3.2.3
10. Include details regarding proposed cathodic protection facilities including location, dimensions, and type.	Section 1.1.2.1
11. In the description of horizontal directional drills (HDD), clarify the specific diameter of trees that would not be cut during guide wire installation. Also, discuss the feasibility of not removing any woody vegetation during placement of the guide wires for an HDD.	Section 1.3.2.1
12. Ensure the United States Geological Survey mapping in appendix 1A includes mileposts.	Section 1.2.2

13. Provide the following information for all non-jurisdictional facilities: i. company/owner; ii. type of facility; iii. dimensions (pipe diameter, length, dimensions, horsepower, etc., as appropriate for any pipelines and land area for other facilities); iv. as applicable, maps showing locations of existing facilities and any proposed relocations of those existing facilities; and v. federal, state, and local permits required and their status, along with any surveys conducted.	Section 1.7
Federal Energy Regulatory Commission's April 4, 2022 Comments on Draft Resource Report 1:	
1. Indicate if communication towers would be utilized for the planned Project, and if so include the applicable information in the appropriate resource reports.	Section 1.1.2.2
2. Specify whether block valves would be automatic shut-off or remote controlled.	Section 1.1.2.2
3. Ensure appendix 1A topographic maps depict all access roads.	The topographic maps in appendix 1A include access roads.
4. Indicate whether non-jurisdictional facilities, such as power or communication facilities, would be needed at valves and pig launchers/receivers. As applicable and if available, include actual or estimated details for non-jurisdictional facilities such as corridor lengths and widths, pipeline diameters, land requirements, survey status, permitting agencies and status, and maps.	Section 1.7
5. Include the size of individual construction workspaces for block valves 2, 4, 5, and 6 in table 1.1-3. Clarify whether during operations these block valves would be wholly contained within the 50-foot-wide permanent right-of-way.	Section 1.1.3 includes a revised table.
6. Clarify whether well pointing would be needed and if it would occur between 7:00 pm and 7:00 am.	Section 1.2
7. Specify how close (in feet) extra workspaces would be located relative to the wetlands described in table 1.3-1 and provide detailed justification as to why the workspaces cannot be offset from the wetland boundary by 50 feet. Describe whether there is an alternative to locating extra workspace within the wetland at milepost (MP) 36.1 and provide detailed justification if it cannot be relocated.	See section 1.3 for revised table 1.3-1.
8. Provide periodic updates to table 1.8-1 as permits, approvals, or consultations are obtained/completed.	See section 1.8 for updated table 1.8-1.
9. Include a draft Plan for Construction and Stabilization in Winter Conditions which also addresses how plowing of snow would avoid disturbance of soil underneath.	Section 1.2 clarifies that no winter construction is planned. Section 1.3 has been revised to remove references to snow plowing.
10. Include in Resource Reports 1 or 6, or in the Guided Bore Drilling Fluid Monitoring and Operations Plan: a. a table listing bore lengths, depths, setbacks (on both sides) from sensitive resources (e.g., wetlands, waterbodies), and estimated duration of boring operations; b. for each bore crossing of perennial waterbodies or wetlands, provide subsurface geology and soils data and site-specific risk and feasibility assessments for each bore based on desktop resources; c. an indication of what instrumentation would be used such as down-hole annular pressure tools; and d. bore pit dewatering discussion/typical drawings of dewatering devices.	Section 1.3.2.2 and appendix 6C address comment 10.a. Section 6.7 and appendix 6C address comment 10.b. Section 1.3.2.2 addresses comments 10.c and 10.d.
11. Revise the list of individual landowners in appendix 1G to include parcel identification numbers that can be matched to the parcel identification numbers depicted on the alignment sheets.	See revised appendix 1G which includes a separate list of parcel numbers matched to landowner names.
12. Include figures that illustrate each contractor yard. Each figure should depict the boundary of the yard at a scale of 0.5-inch = 500 feet (1:12,000) on an aerial image. Include the boundaries of any sensitive resources (waterbodies, wetlands, and cultural resources) using appropriate filing designations (e.g., CUI//PRIV – DO NOT RELEASE). Clarify the bounds and process if contractor yards would be restored "to a condition as specified in landowner agreements."	See revised appendix 1B.

13. Appendix 1B – Update all alignment sheets to include the following information: a. use different symbols for waterbodies and wetlands; b. include all wetlands (for example wetlands Wcaa007e and Wccaa009e are not included) c. ensure waterbody and wetland ID numbers used in table 2.2-1 and appendix C match the ID numbers on the alignment sheets (for example, table 2.2-1 lists the Sheyenne River as ID scab006p while the alignment sheet lists the Sheyenne River as scab005p; table 2.2-1 lists a roadside ditch at MP 47.4 as ID sird001e while the alignment sheet lists the roadside ditch as srid001e; and appendix 2C lists wetland wria006e at MP 36.3 while the alignment sheet lists wria006);; d. mark the crossing of Antelope Creek on the alignment sheet; e. depict the entire length of temporary and permanent access roads using different symbols or colors; f. depict the survey corridor; g. depict the location of all guided bore entry and exit points and workspaces; h. label all extra workspaces with extra workspace IDs and dimensions (ensure labeling is consistent with appendix 8A); i. depict locations of farm taps and cathodic protection (once available); j. include the Mapleton Compressor Station (including the location of Valve #1) and Valve #7 (within the MDU-Wahpeton Border Station); and k. clarify if the "Kindred Measurement Tract" and "Wahpeton Transfer Tract" are the MDU—Kindred Border Station and MDU—Wahpeton Border Station, respectively.	Updated alignment sheets are included in appendix 1B.
14. Section 2.2.7 and appendix 1F-2 (Guided Bore Drilling Fluid Monitoring and Operations Plan) states six waterbodies would be crossed via guided bore. However, table 2.2-1 lists eight waterbodies (ten crossings) would be crossed via guide bore. Resolve the apparent discrepancy.	See corrected appendix IF-2 and section 2.2.7.
15. Appendix 1H is referred to as for both names and addresses of affected landowners and as "Cumulative Impacts Outreach Correspondence." Clarify the apparent discrepancy.	Appendix 1H contains "Cumulative Impacts Outreach Correspondence". Appendix 1G contains the "Names and Addresses of affected Landowners".
16. Include an update of the status and schedule for remaining field surveys, along with an indication of the number and amount of parcels lacking survey permission.	WBI Energy has obtained 100 percent access to conduct environmental surveys. The specific status of environmental surveys is discussed in sections 2.2.1 and 2.3.1 of Resource Report 2 and in section 3.6 of Resource Report 3; the status of cultural surveys is discussed in section 4.3.2.1 of Resource Report 4. The remaining cultural and biological surveys are planned for 2022, weather permitting.
17. Clarify if the Kindred Airport Runway Expansion from appendix 1I is the same as the Robert Odegaard Field Airport Expansion on figure 1.10-1.	The "Kindred Airport Runway Expansion" in appendix 1I is the same as the "Robert Odegaard Field Airport Expansion" on figure 1.10-1. Revisions to these sources have been made to make the name consistent.
18. Regarding figure 1.10-1: a. Clarify if the items depicted in red are planned Project; b. Add the following Projects from appendix 1I: Asmoor Glenn, NDDOT 1 to NDDOT 3, NDDOT 6, and NDDOT 9; and components; and c. Add FMA Diversion Project Southern Embankment and River Control Structures and FMA Diversion Project Diversion Channel to appendix 1I or clarify if these projects are consistent with the entry "Fargo-Moorhead Area Diversion Project."	See updated figure 1.10-1 and updated appendix 1I.

19. Indicate in section 1.4.2 if FERC staff would be invited to attend environmental training.	Section 1.4.2

WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT
RESOURCE REPORT 1—GENERAL PROJECT DESCRIPTION

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APPENDICES

ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing material
AR	access road
ATWS	additional temporary workspace
Certificate	Certificate of Public Convenience and Necessity
CEII	Critical Energy Infrastructure Information
CFR	Code of Federal Regulations
EI	environmental inspector
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan*
FERC Procedures	FERC's *Wetland and Waterbody Construction and Mitigation Procedures*
MDU	Montana-Dakota Utilities Company
MP	milepost
PRIV	Privileged and Confidential
Project	Wahpeton Expansion Project
RFFA	reasonably foreseeable future action
U.S. DOT	United States Department of Transportation
WBI Energy	WBI Energy Transmission, Inc.

WBI ENERGY TRANSMISSION, INC.
WAHPETON EXPANSION PROJECT

1.0 RESOURCE REPORT 1—GENERAL PROJECT DESCRIPTION

WBI Energy Transmission, Inc. (WBI Energy) proposes to construct, modify, operate, and maintain the Wahpeton Expansion Project (Project). The Project will involve the construction of approximately 60.5 miles of 12-inch-diameter natural gas transmission pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota to a new Montana-Dakota Utilities Company (MDU)—Wahpeton Border Station near Wahpeton, North Dakota. The Project will also include minor modifications at the Mapleton Compressor Station; a new MDU—Kindred Border Station near Kindred, North Dakota; new block valve settings; and new pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route. The proposed Project facilities will be located in Cass and Richland Counties, North Dakota.

As required by Title 18 of the Code of Federal Regulations (CFR) Part 380.12, WBI Energy has prepared this Environmental Report in support of its application to the Federal Energy Regulatory Commission (FERC) for a Certificate of Public Convenience and Necessity (Certificate) under Section 7(c) of the Natural Gas Act to construct and operate the proposed facilities.

1.1 Project Description

1.1.1 Purpose and Need

WBI Energy intends to construct, modify, operate, and maintain the proposed Project facilities to provide an incremental 20,600 equivalent dekatherms per day of firm natural gas transportation capacity to meet a growing demand for natural gas in southeastern North Dakota. The Project is supported by a binding Precedent Agreement with MDU for 20,000 equivalent dekatherms per day of firm natural gas transportation service to provide additional uninterrupted natural gas service to the community of Wahpeton and to extend natural gas service to the community of Kindred. MDU's Distribution System will be built to provide natural gas to industrial, commercial, and residential customers. The target in-service date for the Project is November 1, 2024.

1.1.2 Location and Description of Facilities

The Project will include the construction and operation of approximately 60.5 miles of new 12-inch-diameter natural gas pipeline, minor modifications at the Mapleton Compressor Station, the construction of the new MDU—Kindred and MDU—Wahpeton Border Stations, seven block valve settings, and four pig launcher/receiver settings. The Project may also include newly constructed farms taps along the pipeline route, the locations of which have yet to be determined. The proposed Project facilities will be located in Cass and Richland Counties, North Dakota (see figure 1.1-1). Topographic route maps depicting the location of the proposed pipeline route and aboveground facility sites are provided in appendix 1A. Appendix 1B contains the aerial-based construction alignment sheets for the Project. Information on the existing land uses along the proposed pipeline and within the aboveground facility sites is provided in Resource Report 8.


Mapleton Compressor Station
Reile's Acres
Casselton
Mapleton
Kost Yard
West Fargo
Fargo
10
Cass County
Sheyenne River
Prairie Rose
Frontier
Briarwood
Clay County
Horace
South Branch Buffalo River
Stony Creek
Davenport
20
Leonard
Kindred Yard
Kindred
MDU - Kindred Border Station
Wild Rice River
Oxbow
MINNESOTA
30
Christine
Walcott
NORTH DAKOTA
40
Colfax
Wilkin County
Abercrombie
Richland County
50
60
MDU - Wahpeton Border Station
Dwight
Comstock North Yard
Wahpeton City Yard
Wahpeton
Wyndmere
Barney
Mooreton
Comstock South Yard
Otter Tail
This information is for environmental review purposes only.
NORTH DAKOTA
Milepost
Compressor Station
Delivery Point
Proposed Route
County Boundary
State Boundary (Red River)
1:340,000
0 2.5 5 Miles
Figure 1.1-1
Project Overview
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Cass and Richland County, North Dakota
ERM
MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 05/12/2022 | SCALE: 1:340,000
DRAWN BY: RJC

1.1.2.1 Pipeline Facilities

The Project pipeline consists of approximately 60.5 miles of 12-inch-diameter natural gas pipeline. The Project pipeline will be designed and constructed to allow for bi-directional flow and will have a maximum allowable operating pressure of 1,440 pounds per square inch gauge. The pipeline will begin at WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota in Cass County (milepost [MP] 0.0) and end at the new MDU—Wahpeton Border Station near Wahpeton, North Dakota in Richland County (MP 60.5). As indicated in table 1.1-1, the first approximately 24.7 miles of the Project will be in Cass County. The remainder (approximately 35.8 miles) of the Project will be in Richland County.

TABLE 1.1-1

Wahpeton Expansion Project
Proposed Pipeline Facilities

Pipeline Facilities	County	Approximate MPs		Length (miles)[a]
		Begin	End	
New Pipeline				
	Cass	0.0	24.7	24.7
	Richland	24.7	60.5	35.8
Total New Pipeline Length				**60.5**

[a] The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.

1.1.2.2 Aboveground Facilities

In addition to the new pipeline facilities described above, the Project will include minor modifications at the Mapleton Compressor Station; the construction of the new MDU—Kindred Border Station near Kindred, North Dakota and the new MDU—Wahpeton Border Station; seven block valve settings; and four pig launcher/receiver settings (collocated at Valves #1, #2, #5, and #7). The Project may also include newly constructed farm taps along the pipeline route. The proposed aboveground facilities are summarized in table 1.1-2 and described in more detail below.

TABLE 1.1-2

Wahpeton Expansion Project
Proposed New and Modified Aboveground Facilities

Facility Type and Name	Approximate MP	County	Description
Compressor Station			
Mapleton Compressor Station	0.0	Cass	Installation of additional equipment and facilities within the fence line of the existing compressor station for the tie-in of the Project pipeline to WBI Energy's existing transmission system. There will be no additional horsepower added as part of the Project.
Delivery Stations			
MDU—Kindred Border Station	23.4	Cass	New delivery station.
MDU—Wahpeton Border Station	60.5	Richland	New delivery station.

TABLE 1.1-2

Wahpeton Expansion Project
Proposed New and Modified Aboveground Facilities

Facility Type and Name	Approximate MP	County	Description
Other Appurtenant Facilities			
Valve Site #1 and pig launcher/receiver	0.0	Cass	New block valve and pig launcher/receiver installed within the Mapleton Compressor Station fence line.
Valve Site #2 and pig launcher/receiver	11.6	Cass	New block valve and pig launcher/receiver.
Valve Site #3	23.4	Cass	New block valve installed within the MDU—Kindred Border Station.
Valve Site #4	31.3	Richland	New block valve.
Valve Site #5 and pig launcher/receiver	39.5	Richland	New block valve and pig launcher/receiver.
Valve Site #6	48.9	Richland	New block valve.
Valve Site #7 and pig launcher/receiver	60.5	Richland	New block valve and pig launcher/receiver installed within the MDU—Wahpeton Border Station.
Farm Taps	TBD	TBD	Installation of a new tap, riser, and valve.

TBD = To be determined

Modifications at Existing Mapleton Compressor Station

WBI Energy proposes to install equipment and interconnecting piping facilities at the existing Mapleton Compressor Station for the tie-in of the Project pipeline to WBI Energy's existing Line Sections 31 and 24 via a transfer grid at the station. Facilities will include a regulator, meter, station piping, and valves. All proposed modifications will be within WBI Energy's existing parcel for the station. No new or modified compression or other air emission sources will be added to the existing compressor station. A block valve setting (Valve #1) and a pig launcher/receiver setting will also be installed within the compressor station boundary.

MDU Border Stations and Other Appurtenant Facilities

WBI Energy will construct two delivery stations, seven block valve settings, four pig launcher/receiver settings, and other appurtenant facilities.

The new delivery stations will serve as the interconnect between WBI Energy's transmission pipeline system and MDU's Distribution System. The MDU—Kindred Border Station will be located approximately 1 mile east of Kindred, North Dakota at approximate MP 23.4. The station will include the installation of a meter, filter, valves, communication equipment, station piping, and appurtenant facilities. A meter building and a communications building will house the equipment. A security fence will be installed around the delivery station with a permanent access road to be constructed north of the station. A block valve setting (Valve #3) will also be installed within the MDU—Kindred Border Station boundary.

The MDU—Wahpeton Border Station will be located at the terminus of the Project Pipeline at MP 60.5, approximately 2 miles northwest of Wahpeton, North Dakota. The station will include the installation of meters, a filter, valves, communication equipment, station piping, and appurtenant facilities. A meter building and a communications building will house the equipment. A security fence will be installed around the delivery station and a permanent access road will be

constructed south of the station. A block valve setting (Valve #7) and a pig launcher/receiver setting will also be installed within the MDU—Wahpeton Border Station boundary.

Seven block valve settings will be installed along the length of the pipeline. WBI Energy anticipates that remote-controlled actuation will be installed with all in-line block valves. All valve settings will be installed per Pipeline and Hazardous Materials Safety Administration requirements. Valve #1 will be constructed and operated within the Mapleton Compressor Station at MP 0.0. Valves #3 and #7 will be constructed and operated within the construction and operational footprints of the MDU—Kindred Border Station at MP 23.4 and the MDU—Wahpeton Border Station at MP 60.5, respectively, and the remaining four block valve settings will be installed in between those points. Additionally, four pig launcher/receiver settings will be installed and collocated with Valves #1, #2, #5, and #7. Each facility not collocated within the compressor or delivery stations will be fenced and new permanent access roads will be built to access the facility.

As described in section 11.2.4 of Resource Report 11, WBI Energy will also install cathodic protection systems at various points along the proposed pipeline to inhibit external corrosion of the underground facilities. The cathodic protection system will impart a low-voltage current to the pipeline to offset natural soil corrosion potential should the coating become damaged over the life of the pipeline. Specifics regarding the locations and design of these systems are still being determined, but facilities will include a new Cathodic Protection Unit and ground bed at the MDU—Kindred Border Station. WBI Energy will also connect the system to an existing rectifier at the Mapleton Compressor Station. Test lead locations will be installed along the proposed pipeline and will be located directly over the top of the pipe.

No communication towers will be installed as part of the Project.

The Project may include farm taps along the pipeline route and locations of the farm taps have not yet been determined.

1.1.3 Land Requirements

Table 1.1-3 summarizes the land requirements for the Project. More detailed information regarding land requirements and use will be provided in Resource Report 8. Construction of the Project will affect approximately 791.5 acres of land, including the pipeline construction right-of-way, additional temporary workspace (ATWS), contractor yards, temporary and permanent access roads, and aboveground facilities. Following construction, approximately 419.0 acres—including the temporary construction right-of-way, ATWS, contractor yards, temporary access roads, and the ATWS at aboveground facility sites—will revert to preconstruction conditions and uses. The remaining approximately 372.5 acres—including the permanent pipeline easement, permanent aboveground facility sites, and permanent access roads—will be retained for operation of the Project facilities. However, most uses, such as current agricultural uses, will be allowed to resume on the permanent pipeline easement after the pipeline is installed.

TABLE 1.1-3

Wahpeton Expansion Project
Summary of Land Requirements [a]

Facility	County	Land Affected During Construction (acres)	New Land Affected During Operation (acres)
Pipeline Right-of-Way [b]			
Project Pipeline	Cass, Richland	544.8	365.7
ATWS[c]	Cass,Richland	113.0	0.0
Subtotal		**657.8**	**365.7**
Contractor Yards			
Kost Yard	Cass	34.2	0.0
Kindred Yard	Cass	4.1	0.0
Comstock South Yard[d]	Richland	4.7	0.0
Comstock North Yard[e]	Richland	21.0	0.0
Wahpeton City Yard	Richland	28.5	0.0
Subtotal		**92.5**	**0.0**
Access Roads			
Temporary access roads	Cass/Richland	24.4	0.0
Permanent access roads	Cass/Richland	3.2	3.2
Subtotal		**27.6**	**3.2**
Aboveground Facilities			
Mapleton Compressor Station	Cass	2.9	0
MDU—Kindred Border Station[f]	Cass	4.1	1.7
MDU—Wahpeton Border Station[f]	Richland	4.0	1.7
Valve Site #1 [g]	Cass	0.0	0.0
Valve Site #2	Cass	0.7	0.1
Valve Site #3 [g]	Cass	0.0	0.0
Valve Site #4	Richland	0.5	<0.1
Valve Site #5	Richland	1.0	0.1
Valve Site #6	Richland	0.4	<0.1
Valve Site #7 [g]	Richland	0.0	0.0
Pig launchers/receivers [h]	Cass/Richland	0.0	0.0
Cathodic Protection Facilities [i]	Cass/Richland	0.0	0.0
Subtotal		**13.6**	**3.6**
PROJECT TOTAL		**791.5**	**372.5**

TABLE 1.1-3

Wahpeton Expansion Project
Summary of Land Requirements [a]

Facility	County	Land Affected During Construction (acres)	New Land Affected During Operation (acres)

[a] The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.
[b] Based on a 75-foot-wide construction right-of-way for the 12-inch-diameter pipeline and a 50-foot-wide permanent right-of-way. Includes the cathodic protection facilities (the locations of which have not yet been determined), which are expected to be installed within the currently proposed workspace for the pipeline and aboveground facilities.
[c] Includes ATWS associated with pipeline.
[d] The Comstock South Yard (formally the Wahpeton Yard) was renamed after WBI Energy submitted its draft resource reports.
[e] The Comstock North Yard (formally the Comstock Yard) was renamed after WBI Energy submitted its draft resource reports.
[f] The acreage for these aboveground facilities excludes the temporary and permanent pipeline right-of-way within the temporary construction footprint of the facility. This acreage is attributed under the acreage for the pipeline.
[g] Valve #1 will be constructed and operated within the Mapleton Compressor Station fence line. Valves #3 and #7 will be constructed and operated within the construction and operational footprints of the MDU—Kindred Border Station and the MDU—Wahpeton Border Station, respectively. Land requirements for Valves #1, #3, and #7 are accounted for in the land requirements for the compressor station modification and MDU Border Stations.
[h] The four pig launcher/receiver settings will be collocated with Valves #1, #2, #5, and #7; therefore, land requirements for the pig launchers/receivers are accounted for in the land requirements for the four valve sites or other aboveground facilities (i.e., the compressor station modifications and the MDU—Wahpeton Border Station).
[i] The specific locations of the cathodic protection facilities are still being determined. These facilities are expected to be installed within the currently proposed workspace for the pipeline and aboveground facilities.

1.1.3.1 Pipeline Right-of-Way

Construction of the proposed 12-inch-diameter pipeline will require a standard 75 -foot-wide construction right-of-way in both uplands and wetlands. As shown in the drawings provided in appendix 1C, the construction right-of-way typically will consist of a 50-foot-wide working side and a 25-foot-wide spoil side to provide sufficient workspace to accommodate topsoil storage while allowing safe passage of construction equipment and material along the working side of the right-of-way during construction. Following construction and restoration of the disturbed areas, a 50-foot-wide permanent easement (25 feet on either side of the pipeline centerline) will be retained for pipeline operations. WBI Energy's retention of this permanent easement will not preclude agricultural use of the permanent easement following construction with the exception of excavations or the building of new structures. In total, construction of the pipeline right-of-way, not including ATWS, will require approximately 544.8 acres, of which approximately 365.7 acres will be retained as a permanent easement. Appendix 1C provides typical pipeline construction right-of-way cross sections.

To minimize the creation of new corridors, WBI Energy proposes to collocate new pipeline facilities along road corridors, utilities, and property lines to the extent practicable. However, to avoid conflicts, WBI Energy has not designed the pipeline right-of-way to overlap with the operational rights-of-way of other roads, pipelines, electric transmission lines, or utilities. As shown in the summary table in appendix 1D, the new pipeline will be collocated (i.e., within 150 feet of the road/utility) with roads, railroads, or electric transmission lines for 31.0 miles (or 51 percent) of its length, including the following:

- 22.9 miles (38 percent) along roads;

- 6.0 miles (10 percent) along railroads; and
- 2.1 miles (3 percent) along electric transmission lines.

1.1.3.2 Additional Temporary Workspace

ATWS outside of the 75-foot-wide construction right-of-way will be required for certain road crossings, points of intersection along the route, areas where special construction methods will be implemented (e.g., the guided bore method), and areas where additional space is needed for storage of stripped topsoil. In total, use of ATWS during construction will affect approximately 113.0 acres, all of which will be restored to preconstruction condition. Locations of ATWS are provided in appendix 8A of Resource Report 8 and depicted on the route maps provided in appendices 1A and 1B.

Unless topographic or other factors impose constraints, ATWS will be set back at least 50 feet from the edges of waterbodies and wetlands except where the adjacent upland consists of actively cultivated or rotated cropland or other disturbed land. WBI Energy is requesting modifications to FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures)[1] for the site-specific locations where less than a 50-foot setback from the edges of wetlands is proposed (see section 1.3).

1.1.3.3 Contractor Yards

WBI Energy has identified five contractor yards for office trailers, parking, vehicle maintenance, and storage of pipe and equipment to be used by the contractor before and during construction of the Project (see table 1.1-3). Contractor yards are depicted on the Project route maps provided as appendices 1A and 1B.

As shown in table 1.1-3, use of the contractor yards will affect approximately 92.5 acres. WBI Energy has adjusted and minimized the workspace for its contractor yards since filing the draft resource reports to avoid wetlands and forested areas to the extent possible. Preparation of the contractor yards will consist of topsoil segregation, minor grading, and leveling; however, these impacts will be temporary. Contractor yards will be restored to preconstruction conditions in accordance with FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan)[2] or to a condition as specified in landowner agreements.

1.1.3.4 Temporary and Permanent Access Roads

WBI Energy will use existing public and private access roads on a temporary basis to transport personnel, equipment, vehicles, and materials to the proposed Project work areas during construction. Standard-maintenance public roads will be used for access without modification or improvement. Some minimum-maintenance public roads and private roads, however, may require improvement to safely accommodate Project equipment and vehicles—including the following: grading; widening (including the access road entrances off of public roads), placement of gravel or crushed rock for stability, and surface improvement; replacing or installing culverts; and clearing of overhead vegetation, if present. A list of these roads is provided

[1] The FERC Procedures is available online: http://www.ferc.gov/industries/gas/enviro/guidelines.asp.
[2] The FERC Plan is available online: http://www.ferc.gov/industries/gas/enviro/guidelines.asp.

in appendix 8B of Resource Report 8. Locations of access roads are depicted on the Project route maps provided as appendices 1A and 1B.

WBI Energy will use 80 temporary access roads. Use of the temporary access roads will affect approximately 24.4 acres (see table 1.1-3). WBI Energy will document existing road conditions (likely using photography) prior to construction and will restore any access roads that are damaged by the Project to pre-disturbed or better condition in accordance with landowner or road agency requirements. As a result, the Project will have no permanent impact on these roads. WBI Energy is requesting modifications to FERC Procedures for the site-specific locations where a small number of new or modified access roads require crossing wetlands (see section 1.3).

As currently designed, WBI Energy will construct seven permanent access roads that will be required to access the new MDU—Kindred Border Station, the new MDU—Wahpeton Border Station, the four new block valve setting sites (Valve #2, #4, #5, and #6) not collocated with another Project facility, and the Project right-of-way. These permanent access roads will affect 3.2 acres. The new roads to the MDU—Kindred Border Station and the MDU—Wahpeton Border Station will be gravel. The new roads to the block valve setting and pig launcher/receiver sites will be gravel and/or dirt. If additional access roads are required for construction or operation of the Project at a later date, WBI Energy will submit a variance request to FERC for approval to use the road and complete all appropriate federal, state, and local permitting associated with the Project change.

1.1.3.5 Aboveground Facilities

Modifications at the Existing Mapleton Compressor Station

Proposed modifications at WBI Energy's existing Mapleton Compressor Station at MP 0.0 will occur within the existing fence line of the compressor station in areas that are currently part of the operational footprint of the compressor station. WBI Energy plans to use the available space within the existing fence line for construction activities comprising approximately 2.9 acres. However, no new operational right-of-way will be required at the compressor station. A plot plan for the modifications at the compressor station is provided as appendix 1E (filed under separate cover in Volume III as Controlled Unclassified Information / Critical Energy Infrastructure Information [CUI//CEII] and is marked as "CUI//CEII – DO NOT RELEASE").

MDU Border Stations, Block Valve Settings, Pig Launcher/Receiver Settings, and Cathodic Protection Systems

WBI Energy is finalizing the details for the MDU—Kindred Border Station and the MDU—Wahpeton Border Station, block valve settings, pig launcher/receiver settings, and other appurtenant facilities. The current design includes approximately 4.1 acres to construct the MDU—Kindred Border Station and approximately 4.0 acres to construct the MDU—Wahpeton Border Station. These acreages do not include the temporary and permanent pipeline right-of-way within the temporary construction footprint of each facility. Approximately 1.7 acres of the construction workspace (approximately 200 feet wide by 360 feet long) will be retained to operate each MDU Border Station. Plot plans for the border stations are provided in appendix 1E (filed under separate cover in Volume III as Controlled Unclassified Information / Critical Energy Infrastructure Information [CUI//CEII] and is marked as "CUI//CEII – DO NOT RELEASE").

Valve and Pig Launcher/Receiver Settings

Typical drawings for block valve settings and pig launcher/receiver settings are provided in appendix 1B. Valve Site #1 will be constructed and operated within the Mapleton Compressor Station fence line. The land for the construction and operation of this facility is included in the land requirements at the Mapleton Compressor Station described above. Valve Sites #3 and #7 will be constructed and operated within the construction and operational footprints and fence lines of the MDU—Kindred Border Station and the MDU—Wahpeton Border Station, respectively. Construction of Valve Sites #2, #4, #5, and #6 will each require between 0.4 and 1.0 acre of land. The operational footprint of Valve Sites #4 and #6 will be approximately 45 feet wide by 55 feet long (less than 0.1 acre) and will not extend past the width of the permanent pipeline right-of-way. The operational footprint for Valve Sites #2 and #5, which will also include a pig launcher/receiver, will be approximately 60 feet wide by 80 feet long (about 0.1 acre) and, therefore, will extend 5 feet beyond either side of the permanent right-of-way for the pipeline.

The first pig launcher/receiver setting will be constructed and operated within the Mapleton Compressor Station fence line. The remaining three pig launcher/receiver settings will be collocated with Valves #2, #5, and #7. The land required for these facilities is included in the compressor station and block valve requirements described above.

Cathodic Protection Systems

As described in sections 1.1.2.2 and 11.2.4 of Resource Report 11, WBI Energy will also install cathodic protection systems at various points along the proposed pipeline to inhibit external corrosion of the underground facilities. The specific locations of these facilities are still being determined.

Farm Taps

Specific details regarding the number and locations of farm taps are still being determined. WBI Energy will provide more details and maps regarding farm taps when available. It is anticipated that the farm taps would be installed by WBI Energy within the proposed permanent right-of-way. Each tap setting would consist of valves, pipes, and a small fence enclosure typically 4 feet square and 3 feet high. If the setting is in or near a cultivated field, a high visibility marker will make the setting easier to see. The FERC Plan and FERC Procedures would be implemented to minimize the impact of these facilities.

1.2 Construction Schedule and Workforce

WBI Energy anticipates that the commencement of certain preconstruction activities (e.g., establishing pipe and contractor yards) may occur in the fall of 2023, with construction of the Project beginning in April 2024 subject to the receipt of necessary permits and regulatory approvals. WBI Energy anticipates that construction of the Project facilities will be completed by October 2024 with all facilities being placed into service by November 2024.

Based on the current 2024 construction schedule and November 2024 in-service date, WBI Energy anticipates that no construction will be necessary during winter or snow conditions. However, if a change in the construction schedule necessitates that construction activities occur during the winter months, WBI Energy will file a *Plan for Construction and Stabilization in Winter Conditions* with FERC for review/approval prior to conducting winter construction activities.

Construction activities will generally occur Monday through Saturday from 7:00 a.m. to 7:00 p.m. local time. However, certain activities may occur up to 24 hours per day, including on Sundays and on potentially federal holidays. These activities include guided bore operations, hydrostatic testing and associated activities, critical tie-ins, trench dewatering (if necessary), completing in-progress construction activities and wetland/waterbody crossings, incident response procedures/measures, emergency equipment repairs/maintenance, and aboveground facility commissioning. WBI Energy does not anticipate wellpoint dewatering methods will be used for the Project. If used, the well point operations would be conducted during normal working hours (generally Monday through Saturday 7:00 a.m. to 7:00 p.m).

WBI Energy currently anticipates that construction of the proposed pipeline will be accomplished using one or two construction spreads with a combined peak temporary workforce of about 225 people and an average workforce of about 175 people, including inspection crews. Construction of the aboveground facilities and modifications at the Mapleton Compressor Station will require a temporary workforce of about 15 additional people working for up to seven weeks at each facility. WBI Energy is still evaluating operational staffing needs but anticipates one new hire to assist in operation and maintenance of the new facilities. Additional information regarding construction and permanent workforce requirements is provided in Resource Report 5.

1.3 Construction and Restoration Procedures

The Project will be designed, constructed, modified, tested, operated, and maintained in accordance with all applicable requirements defined by the United States Department of Transportation (U.S. DOT)—Pipeline and Hazardous Materials Safety Administration regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; by 18 CFR 380.15, *Siting and Maintenance Requirements*; and by other applicable federal, state, and local regulations—except as otherwise specified in this application or approved by the appropriate regulatory agency.

WBI Energy proposes to conduct Project activities in accordance with the 2013 versions of the FERC Plan and FERC Procedures with the exception of the proposed modifications to section VI.B.1 of the FERC Procedures (see table 1.3-1). WBI Energy notes that wetlands identified in Resource Report 2 are based on delineations performed in accordance with the U.S. Army Corps of Engineers requirements. However, section VI.B.1.a of the FERC Procedures does not require site-specific modifications for extra work areas within 50 feet of a wetland boundary if "the adjacent upland consists of cultivated or rotated cropland or other disturbed land". Therefore, table 1.3-1 only requests modifications in instances where the adjacent upland does not consist of cultivated or rotated cropland or other disturbed land.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
VI.B.1.a	Locate all extra workspace (ATWS; such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land.	33.4/33.5	Locate ATWS 159 and ATWS 160 in an emergent wetland wrib007e	ATWSs in wetland wrib007e	The ATWSs south of the road (ATWS 156 and ATWS 160) are needed for staging and spoil storage associated with the guided bore of County Road 2. This workspace is located in an agricultural hay field that includes emergent wetland wrib007e. The wetland begins between MPs 33.4 and 33.5, about 95 feet south of the road and extends south from there for approximately 550 feet. Most of ATWS 156 and a small portion of ATWS 160 are located in wrib007e (but most of ATWS 160 is 40 or more feet from the edge of the wetland). To avoid having ATWS in this wetland, either the road bore, which is about 185 feet long, would need to be extended or spoil from the road bore would need to be moved another 590 feet further south. The first option would nearly quadruple the length of the bore. The second would require additional equipment traffic back and forth within the wetland to relay the bore spoil to the new ATWS outside of the wetland. Neither of these options is practicable or warranted given that its implementation of the Procedures will protect and restore the wetland. Additionally, only 0.9 acre of the emergent wetland will be affected by the workspace (construction right-of-way and ATWS) for the bore and the wetland consists mostly (90 percent cover) of foxtail barley and lesser amounts of other mostly fast growing species including yellow foxtail and reed canary grass, which will quickly recolonize any disturbed areas. WBI Energy will protect and restore wetland wrib007e by implementing FERC's procedures.
		35.65	Locate ATWSs 165 and 166 within 50 feet of an emergent wetland wrib016e associated with a road ditch adjacent to 62nd Street SE.	ATWSs within 14 to 15 feet of wetland wrib016e and within 40 feet of wetland wrib017e	The ATWS south of the road is needed for staging and spoil storage associated with the guided bore of 62nd Street SE. This workspace is located in open land between emergent wetland wrib016e, adjacent to the road and emergent wetland wrib017e to the south. Both wetlands are dominated by the following three species in different proportions: narrowleaf cattail, reed canary grass, and prairie cordgrass. ATWSs 165 and 166 are approximately 14 to 15 feet from the wetland wrib016e and 40 feet from wrib017e, respectively. There is not enough distance between these 2 wetlands to maintain the ATWS 50 feet from both wetlands. WBI Energy elected to position the workspace closer to wrib016e in the road ditch to maintain the ATWS further from the larger wetland wrib017e. WBI Energy's implementation of the construction and restoration measures of the FERC Procedures including the installation, maintenance, and monitoring of erosions and sediment controls will protect wetlands wrib016e and wrib017e.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		36.1	Locate ATS 167 in emergent wetland wrib019e.	ATWS is within wetland wrib019e	The ATWS north of the road is needed for staging and spoil storage associated with the guided bore of 168th Avenue SE. The ATWS is located within emergent wetland wrib019e, which is dominated primarily by reed canary grass but includes lesser amounts (less than 10 percent cover) of goldenrod species, sandbar willow, peachleaf willow, and gray dogwood. The ATWS is approximately 170 from the road but the wetland extends north from the road beyond the ATWS. To avoid having ATWS in this wetland, either the road bore, which is about 270 feet long, would need to be extended or spoil from the road bore would need to be moved another approximately 600 feet further north. The first option would nearly triple the length of the bore. The second would require additional equipment traffic back and forth within the wetland to relay the bore spoil to the new ATWS outside of the wetland. Moving the ATWS north would also encroach on one of the few forested wetlands on the Project. Neither of these options is practicable. Only 0.9 acre of the emergent wetland will be affected by the workspace (construction right-of-way and ATWS) for the bore and the wetland consists mostly (75 percent cover) of fast growing reed canary grass, which, along with the other existing species, will quickly recolonize any disturbed areas. WBI Energy will implement the FERC Procedures to protect and restore this wetland.
VI.B.1.d	The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.	5.1	Access Road (AR) 005	Crosses wetland	New temporary AR005 crosses emergent wetland wcaa009e east of 165th Avenue SE. This wetland is covered almost entirely (98 percent cover) with reed canary grass. This wetland needs to be crossed to access the north side of the Burlington Northern Santa Fe Railroad bore at MP 5.1. As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Approximately 0.11 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing reed canary grass, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		9.9	AR 013	Crosses wetland	New temporary access road AR 013 crosses emergent wetland wcaa007e. This wetland needs to be crossed for equipment to access the workspace associated with the bore of wetland wcaa006e. This wetland is dominated by reed canary grass (95 percent cover) and narrowleaf cattail (5percent cover). As described in the table in appendix 8B, work on the new road may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.02 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.
		13.7	AR 018	Crosses wetland	Existing/New temporary access road AR 018 crosses emergent wetland wacb003e, which is associated with a road ditch that runs along the east side of 166th Avenue SE on the south side of 44 Street SE. This wetland is dominated by needle spikerush, dark-green bulrush, narrowleaf cattail, and swamp smartweed. This wetland needs to be crossed for equipment to access the workspace associated with the 44th Street SE/right-of-way from the 166th Avenue SE road bore. As described in the table in appendix 8B, work on the new portion of the road and modifications to the existing portions may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.01 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		14.7	AR019	Crosses wetland	New temporary access road AR019 crosses emergent wetland wcab004e, which is associated with a road ditch that runs along the west side of 166th Avenue SE on the south side of 45th Street SE. This wetland is dominated by swamp smartweed, prairie cordgrass, redroot pigweed (red-root or common amaranth), narrowleaf cattail, and smaller amounts of needle spikerush. This wetland needs to be crossed for equipment to access the workspace associated with the 45th Street SE/right-of-way from 166th Avenue SE road bore right-of-way from 166th Avenue SE. As described in the table in appendix 8B, work on this access road may include grading, widening, and placement of mats, gravel, and/or culverts. Approximately 0.01 acre of this wetland will be within the temporary construction footprint of the road. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.
		31.3	AR034	Crosses wetland	Existing/New permanent access road AR034 crosses emergent wetland wria003e, which is in the road ditch on the north side of 58th Street SE. This wetland is dominated by needle spikerush, dark-green bullrush, reed canary grass, and narrowleaf cattail. WBI Energy needs to cross the wetland to access the Valve #4 site during construction and for later operation of the valve. As described in the table in appendix 8B, work on the road may include grading, widening, and placement of mats, gravel, and/or culverts. Less than 0.01 acre of this wetland will be within the construction and permanent footprint of the road. WBI Energy will protect adjacent wetland areas through implementation of the FERC Procedures including the use of erosion and sediment controls. Following installation of the road, WBI Energy will remove any mats, culverts, or gravel that are not needed for the permanent road and restore any portions of the wetland that are temporarily affected. Given that the wetland consists mostly of fast growing species, any temporarily impacted areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		34.5	AR038	Crosses wetland	New temporary access road AR038 crosses emergent wetland wrib021e, which is located in a field south of 61st SE. The predominant vegetation in this wetland is foxtail barley, goldenrod species, reed canary grass, and all other species constituting 10 percent cover or less. WBI Energy's crossing of this wetland will minimize equipment traffic crossing the wetland on the right-of-way and potentially minimize tree clearing. As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Approximately 0.26 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.
		43.4	AR046	Crosses wetland	Existing temporary access road AR046 crosses emergent wetland wria010e, which is in a road ditch on the west side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail (60 percent cover) with lesser amounts of reed canary grass, perennial sow thistle, and yellow foxtail (each less than five percent cover). As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		44.2	AR046.1	Crosses wetland	Existing temporary access road AR046.1 crosses emergent wetland wria014e, which is in a road ditch on the west side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail (80 percent cover) with lesser amounts of reed needle spikerush (about 10 percent cover). As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.
		46.3	AR049	Crosses wetland	New temporary access road AR049 crosses emergent wetland wrid001e, which is in a road ditch on the east side of 172nd Avenue SE. This wetland is dominated by broadleaf cattail. As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

TABLE 1.3-1

Wahpeton Expansion Project
Proposed Modifications to the FERC Plan and FERC Procedures

Procedures Section Number	Measure	MP	Proposed Modification	Distance to Wetland	Justification for Proposed Modification
		47.3	AR051	Crosses wetland	New temporary access road AR051 crosses emergent wetland wrid003e, which is in a road ditch on the east side of 172nd Avenue SE. This wetland is dominated by narrowleaf cattail and reed canary grass. As described in the table in appendix 8B, modifications including grading, widening, and placement of mats, gravel, and/or culverts may be needed for this access road. Less than 0.01 acre of this wetland will be within the temporary construction footprint of the road. WBI Energy will protect the wetland through implementation of the FERC Procedures including the use of erosion and sediment controls. Following construction when the road is no longer needed, WBI Energy will restore the affected wetland area pursuant to the FERC Procedures. Any mats, culverts, or gravel that is needed will be removed from the wetland and the preconstruction grade will be restored. Given that the wetland consists mostly of fast growing species, any areas of the wetland that are disturbed will be quickly recolonized with vegetation similar to what is in the wetland now.

WBI Energy will implement additional construction, restoration, and mitigation plans prepared for the Project. These will, or may, include the following as needed: *Spill Prevention, Control, and Countermeasures Plan* (provided in appendix 1F-1) and *Guided Bore Drilling Fluid Monitoring and Operations Plan* (provided in appendix 1F-2); *Fugitive Dust Control Plan* (provided in appendix 9A); *Plan for Unanticipated Discovery of Contaminated Environmental Media* (provided in appendix 2A)*; Noxious Weed Management Plan* (provided in appendix 3C)*; Plan for Unanticipated Discovery of Historic Properties or Human Remains during Construction* (provided in appendix 4G)*;* and *Plan for Unanticipated Discovery of Paleontological Resources During Construction* (provided in appendix 6A) and *Blasting Plan* (provided in appendix 6B).

1.3.1 General Pipeline Construction Procedures

Construction of the proposed pipeline will follow industry-standard practices and procedures as described below. Conventional open-ditch construction methods will be used to install most of the proposed pipeline. In a typical scenario, construction involves a series of discrete activities conducted in a linear sequence. These include survey and staking; right-of-way clearing and grading; pipe stringing, bending, and welding; trenching; lowering-in and backfilling; hydrostatic testing; final tie-in; commissioning; and right-of-way cleanup and restoration. Figure 1.3-1 illustrates each of the steps in a typical construction scenario. A description of each step in the process is provided in the following sections.

WBI ENERGY TRANSMISSION, INC.
2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

September 13, 2021

U.S. Fish and Wildlife Service
Region 6
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

Subject: WBI Energy Transmission, Inc.
Proposed Wahpeton Expansion Project
Cass and Richland Counties, North Dakota

To Whom it may Concern:

WBI Energy Transmission, Inc. (WBI Energy) operates a natural gas transmission pipeline system in the Northern Plains and is proposing to expand its system in southeastern North Dakota. The Wahpeton Expansion Project will involve constructing approximately 60 miles of 12-inch diameter natural gas pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota, to a new delivery station near Wahpeton, North Dakota. The project will include minor modifications at the Mapleton Compressor Station and a new delivery station near Kindred, North Dakota. The enclosed map shows the preliminary proposed pipeline route and locations of project facilities.

This project will allow WBI Energy to transport an additional 20.6 million cubic feet of natural gas per day to help meet growing demand for natural gas in southeastern North Dakota. Montana-Dakota Utilities Co., a local distribution company, has engaged WBI Energy to construct this project to fulfill Wahpeton customers' needs for additional uninterrupted natural gas supply and to extend natural gas service to Kindred, at the request of city officials and residents.

The project is regulated by the Federal Energy Regulatory Commission (FERC) under Section 7(c) of the Natural Gas Act. Under the Energy Policy Act of 2005, FERC is the lead agency for coordinating federal authorizations and complying with the National Environmental Policy Act (NEPA) on natural gas pipeline projects subject to its jurisdiction. WBI Energy plans to submit an application with the FERC in May 2022 for a Certificate of Public Convenience and Necessity to

construct and operate the proposed pipeline and associated facilities. Applications for other federal or state authorizations will be submitted prior to or at approximately the same time as the FERC application, or on timelines defined by the appropriate federal or state regulations. Pending regulatory approvals, WBI Energy anticipates beginning construction in early 2024, with the new facilities in service by November 2024.

WBI Energy plans to file a request with the FERC to use the FERC's pre-filing process for the project. This process will provide agencies, landowners, and other stakeholders the opportunity to work with WBI Energy and the FERC to identify and resolve environmental issues prior to the filing of the Certificate application, which will result in a more efficient regulatory review process. WBI Energy plans to submit its request to use the pre-filing process in late September 2021 and anticipates receiving FERC's approval to use the process in early October 2021. Pending FERC's approval, WBI Energy will also hire and fund a third-party environmental consultant to assist FERC in the preparation of the NEPA document for the project.

WBI Energy has retained Environmental Resources Management (ERM) to provide environmental support services for the project. An ERM representative and/or FERC staff will be in touch with you in the near future to gauge your interest in participating in the pre-filing process, provide additional information, and discuss specific permitting and/or consultation requirements. In the meantime, if you have questions about the project, please contact me at 406-359-7332 or Maggie Suter of ERM at 410-972-4125.

Thank you for your time and assistance with this project.

Sincerely,

Jill Linn
Environmental Affairs
WBI Energy Transmission, Inc.

Enclosures: Project Overview Map

cc: Robbyn Reukauf, WBI Energy Transmission, Inc.
Maggie Suter, ERM

WBI ENERGY TRANSMISSION, INC.
2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

September 13, 2021

U.S. Fish and Wildlife Service, Region 6
Tewaukon Wetland Management District
9754 143 ½ Avenue SE
Cayuga, ND 58013
701-724-3598
tewaukon@fws.gov

Subject: WBI Energy Transmission, Inc.
Proposed Wahpeton Expansion Project
Cass and Richland Counties, North Dakota

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Enclosures: Project Overview Map

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Maggie Suter, ERM

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2010 Montana Avenue
Glendive, MT 59330
(406) 359-7200
www.wbienergy.com

September 13, 2021

U.S. Fish and Wildlife Service, Region 6
Valley City Wetland Management District
11515 River Road
Valley City, ND 58072
(701)-845-3466

Subject: WBI Energy Transmission, Inc.
Proposed Wahpeton Expansion Project
Cass and Richland Counties, North Dakota

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Sincerely,

Jill Linn
Environmental Affairs
WBI Energy Transmission, Inc.

Enclosures: Project Overview Map

cc: Robbyn Reukauf, WBI Energy Transmission, Inc.
Maggie Suter, ERM

From: Leslie Rodman-Jaramillo
To: "Reinisch, Jerry D"
Subject: RE: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile
Date: Thursday, January 13, 2022 10:45:00 AM
Attachments: M2W_Construction_Footprint_20220106.kmz
image001.png

Hi Jerry,

Please see the attached KMZ for the Wahpeton Expansion Project. As we discussed, if you have time to outline a few details that you are able to point out on an initial review, that would be appreciated! Please let me know if you have any questions at this time.

Thank you,

Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: she/her/hers
ERM
M +1 503 984 6609

From: Reinisch, Jerry D <jerry_reinisch@fws.gov>
Sent: Monday, January 10, 2022 5:32 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: RE: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile

Leslie
Thank you for the updated information. I will be busy from 9-11 as we have our weekly staff meetings.
Regards
Jerry

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Sunday, January 9, 2022 10:19 PM
To: Reinisch, Jerry D <jerry_reinisch@fws.gov>
Subject: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile

Hi Jerry,

As we discussed earlier, I wanted to provide you with an updated shapefile of the Wahpeton Expansion Project that is proposed to cross Cass and Richland Counties. Please let me know if you have any trouble accessing this file.

I'd like to follow-up with you on a call with some additional questions I have at this time. I'll try to reach out to you Monday, January 10th. Please let me know if there are times that will not work for you.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: she/her/hers
ERM
1050 SW 6th Ave Suite 1650 ¦Portland, OR ¦97204
M +1 503 984 6609
E Leslie.RodmanJaramillo@erm.com | **W** www.erm.com

From: Reinisch, Jerry D
To: Leslie Rodman-Jaramillo
Subject: RE: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile
Date: Wednesday, January 19, 2022 5:48:12 AM
Attachments: image001.png

Leslie
After a quick review of the Wahpeton Expansion Project I noted the following:

1. Bald eagle nest near the staging area in West Fargo
2. Two bald eagle nests south of highway 46 near Kindred along the Sheyenne River
3. DASK presence southwest of the eagles'nests, similar habitat continues from Kindred to Norman.

Attached map shows the locations. Yellow circles are bald eagle locations and green triangles are for DASK activities.
Regards
Jerry

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Thursday, January 13, 2022 12:46 PM
To: Reinisch, Jerry D <jerry_reinisch@fws.gov>
Subject: RE: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile

Hi Jerry,

Please see the attached KMZ for the Wahpeton Expansion Project. As we discussed, if you have time to outline a few details that you are able to point out on an initial review, that would be appreciated! Please let me know if you have any questions at this time.

Thank you,

Leslie

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From: Reinisch, Jerry D <jerry_reinisch@fws.gov>
Sent: Monday, January 10, 2022 5:32 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: RE: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile

recognize the sender and know the content is safe.

Leslie
Thank you for the updated information. I will be busy from 9-11 as we have our weekly staff meetings.
Regards
Jerry

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Sunday, January 9, 2022 10:19 PM
To: Reinisch, Jerry D <jerry_reinisch@fws.gov>
Subject: [EXTERNAL] WBI Energy Wahpeton Expansion Project shapefile

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I'd like to follow-up with you on a call with some additional questions I have at this time. I'll try to reach out to you Monday, January 10th. Please let me know if there are times that will not work for you.

Thank you,
Leslie

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From: Wilson, Eric D
To: Leslie Rodman-Jaramillo
Subject: Re: [EXTERNAL] WBI Energy proposed Wahpeton Expansion Project - FWS easements
Date: Monday, February 14, 2022 9:17:19 AM
Attachments: image001.png

Hi Leslie,

I looked over the shapefiles you sent and can confirm that there is one wetland easement within 1mi of the proposed construction footprint.

If you need more info, or if the route changes, please let me know.

Thanks,

Eric Wilson
Wildlife Refuge Specialist
Tewaukon National Wildlife Refuge Complex
9754 143 1/2 Ave SE
Cayuga, ND 58013
O) 701-724-3598 x 5
C) 701-403-0041
eric_wilson@fws.gov
https://www.fws.gov/refuge/tewaukon

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Friday, February 11, 2022 12:00 PM
To: Wilson, Eric D <eric_wilson@fws.gov>
Cc: Azure, Dave <dave_azure@fws.gov>; Fitzmorris, Patrick J <patrick_fitzmorris@fws.gov>
Subject: [EXTERNAL] WBI Energy proposed Wahpeton Expansion Project - FWS easements

Hi Eric,

I spoke with your colleague, Dave Azure, this morning and he passed along your contact information. I'm working with WBI Energy on a proposed project, the Wahpeton Expansion Project, which would include about 60-miles of natural gas pipeline crossing Cass and Richland Counties in

southeastern North Dakota. For additional reference, please see the attached WBI Energy project introductory letter, which was sent to the Tewaukon District, as well as the FWS response to FERC.

I wanted to get confirmation on the fee title and/or easement properties and proximity to the proposed Project. I've attached a copy of the shapefile as well as the KMZ. In checking the spatial data I have for these FWS lands, I have found that one FWS conservation easement or management area is within 1-mile of the proposed Project. This area is within the Tewaukon WMD and includes one waterfowl production area. I'm hoping that you can confirm this, and please let me know if there are additional properties as well.

Please let me know if you need additional information and have any questions.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: she/her/hers
ERM
1050 SW 6th Ave Suite 1650 | Portland, OR | 97204
M +1 503 984 6609
E Leslie.RodmanJaramillo@erm.com | **W** www.erm.com

Read our Sustainability Report and ERM Foundation Annual Review

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Jessica Johnson, Bismarck, ND.
United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

Dear Ms. Bose:

Thank you for your letter dated January 4, 2022 requesting comments on the proposed Wahpeton Expansion Project, a 60-miles natural gas pipeline that will be constructed and operated by WBI Energy Transmission, Inc. in Cass and Richland Counties, North Dakota. The U.S. Fish and Wildlife Service (FWS) has the following comments.

Section 7 of the Endangered Species Act

Section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the FWS if they determine their project and associated actions "may affect" listed species or critical habitat. If Federal agencies or their non-federal representatives determine their project and associated actions will have "no effect" on listed species, their habitats, or designated critical habitat, consultation is not required. However, if a "no effect" is determined, we recommend that you maintain a written record in support of your conclusion.

Consultations on IPaC

We invite you to use a new tool the FWS has designed to help with the consultation process – the Information for Planning and Consultation (IPaC) database (http://ecos.fws.gov/ipac). The database provides guidance to help you determine what your action area is, whether endangered species may be found within the action area, and if your project and associated actions may affect listed species. Additionally, the Section 7(a)(2) Technical Assistance webpage (https://www.fws.gov/midwest/endangered/section7/s7process/index.html) contains step-by-step guidance for the Section 7(a)(2) consultation process as well as informal consultation letter examples templates for documenting your findings related to threatened and endangered species.
Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act

Additionally, while not all are listed as threatened or endangered, eagles and migratory birds have protections under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). The BGEPA prohibits take which

is defined as, “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb” (50 CFR 22.3). Disturb is defined in regulations as, “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” The MBTA makes it unlawful without a waiver to pursue, hunt, take, capture, kill, or sell birds listed as migratory birds, including eagles. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts including feathers, eggs, and nests.

Service Property Interests

As part of the National Wildlife Refuge System, the FWS administers fee title Refuge and Waterfowl Production Areas, as well as wetland and grassland easements, throughout North Dakota. For exact locations of FWS interest lands, please contact the Eastern North Dakota Wetland Management Districts (WMD) for guidance regarding FWS easements. The contact is Dave Azure at (701) 285-3341.

Conclusion

These comments provide technical assistance only and do not constitute the report of the Secretary of the Interior on the project within the meaning of Section 2(b) of the Fish and Wildlife Coordination Act, do not fulfill the requirements under the Endangered Species Act, the Bald and Golden Eagle Protection Act, or the Migratory Bird Treaty Act, nor do they represent the review comments of the U.S. Department of the Interior on any forthcoming environmental statement. Thank you for the opportunity to provide comments early in the planning process. If you have any additional questions or comments, please contact Jessica Johnson of my staff at (701) 355-8507 or via email at Jessica_n_Johnson@fws.gov, or contact me at (701) 355-8512 or Drew_Becker@fws.gov.

Sincerely,

Drew Becker
North Dakota Ecological Services Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513
https://www.fws.gov/office/north-dakota-ecological-services

In Reply Refer To: May 27, 2022
Project Code: 2022-0009567
Project Name: WBI Energy - Wahpeton Expansion Project

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:

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/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (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. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please 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. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- 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:

North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
(701) 250-4481

Project Summary

Project Code: 2022-0009567
Event Code: None
Project Name: WBI Energy - Wahpeton Expansion Project
Project Type: Natural Gas Distribution
Project Description: WBI Energy Transmission, Inc. (WBI Energy) proposes to construct, modify, operate, and maintain the Wahpeton Expansion Project (Project). The Project will involve the construction of approximately 60.5 miles of 12-inch-diameter natural gas transmission pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota to a new Montana-Dakota Utilities Company (MDU)—Wahpeton Border Station near Wahpeton, North Dakota. The Project will also include minor modifications at the Mapleton Compressor Station; a new MDU—Kindred Border Station near Kindred, North Dakota; new block valve settings; and new pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route. The proposed Project facilities will be located in Cass and Richland Counties, North Dakota.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.88506060000006,-96.92490216586465,14z

Counties: Cass and Richland counties, North Dakota

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.

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

Mammals

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

Insects

NAME	STATUS
Dakota Skipper *Hesperia dacotae* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Poweshiek Skipperling *Oarisma poweshiek* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9161	Endangered

Flowering Plants

NAME	STATUS
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.

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.

Wetlands

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

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

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

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

IPaC User Contact Information

Agency: ERM
Name: Leslie Rodman-Jaramillo
Address: 1050 SW 6th Ave
Address Line 2: Suite 1650
City: Portland
State: OR
Zip: 97204
Email leslie.rodmanjaramillo@erm.com
Phone: 5039846609

Lead Agency Contact Information

Lead Agency: Federal Energy Regulatory Commission

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513
http://www.fws.gov/northdakotafieldoffice/endspecies/endangered_species.htm

In Reply Refer To: February 18, 2022
Project code: 2022-0009567
Project Name: WBI Energy - Wahpeton Expansion Project

Subject: Verification letter for the 'WBI Energy - Wahpeton Expansion Project' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Leslie Rodman-Jaramillo:

The U.S. Fish and Wildlife Service (Service) received on February 18, 2022 your effects determination for the 'WBI Energy - Wahpeton Expansion Project' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Dakota Skipper *Hesperia dacotae* Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Poweshiek Skipperling *Oarisma poweshiek* Endangered
- Western Prairie Fringed Orchid *Platanthera praeclara* Threatened

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

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[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

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

1. Name

WBI Energy - Wahpeton Expansion Project

2. Description

The following description was provided for the project 'WBI Energy - Wahpeton Expansion Project':

> WBI Energy Transmission, Inc. (WBI Energy) proposes to construct, modify and operate the Wahpeton Expansion Project (Project) in Cass and Richland Counties, North Dakota. The Project will involve construction of approximately 60.6 miles of 12-inch-diameter natural gas pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota, to a new delivery station near Wahpeton, North Dakota. The Project will also include minor modifications at the Mapleton Compressor Station, a new delivery station near Kindred, North Dakota, and new block valve and pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.88506060000006,-96.92490216586465,14z

Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service’s PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

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

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

3. Will your activity purposefully **Take** northern long-eared bats?

   No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

5. [Semantic] Is the project action area located within 0.25 miles of a known northern long-eared 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

6. [Semantic] Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?

   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

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type ‘0’ in questions 1-3.

1. Estimated total acres of forest conversion:

2.0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type ‘0’ in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type ‘0’ in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type ‘0’ in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

IPaC User Contact Information

Name: Leslie Rodman-Jaramillo
Address: 1050 SW 6th Ave
City: Portland
State: OR
Zip: 97204
Email leslie.rodmanjaramillo@erm.com
Phone: 5039846609

ATTACHMENT B USFWS CORRESPONDENCE

From:	Leslie Rodman-Jaramillo
To:	"Johnson, Jessica N"
Cc:	jerry_reinisch@fws.gov; Maggie Suter; Becky Moores
Subject:	RE: phone calls
Date:	Thursday, June 9, 2022 9:22:00 AM
Attachments:	WBI_Wahpeton_USFWS_Determination_Letter_05.27.2022.pdf

Hi Jessica,

I reached out to Jerry today with regard to the WBI Energy proposed project, Wahpeton Expansion Project, in southeastern North Dakota. He informed me that you will be the point person moving forward on USFWS consultations. I wanted to confirm that the office and Jerry had received the Determination Letter that we submitted on behalf of WBI Energy which was sent on May 27, 2022. I'm attaching that here as reference and because Jerry was cc'd on this correspondence.

I would like to find a time to discuss a few questions I have at this time, would you have time this week for a short conversation? Please let me know your availability or you can also call my cell which is provided below.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: she/her/hers
ERM
M +1 503 984 6609

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Monday, February 14, 2022 10:07 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: phone calls

Hi Leslie,
Stephanie let me know that you were trying to get in touch with me. Long story, but my work phone has not been very reliable lately. I think I have the issue fixed now but please send me an email if you are not able to get in touch by phone.
Thanks,
Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue

Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From:	Leslie Rodman-Jaramillo
To:	Johnson, Jessica N
Cc:	Jones, Seth A; Maggie Suter; Becky Moores
Subject:	RE: informal consultation question for NLEB
Date:	Thursday, June 23, 2022 8:35:00 AM
Attachments:	RR1 Appendices.zip M2W_Construction_Footprint_20220622.zip M2W_Construction_Footprint_20220622.kmz

Hi Jessica,

Thank you for providing this feedback.

In the attached, we are providing the requested appendices as referenced in the resource report; however, those that are identified as Controlled Unclassified Information / Critical Energy Infrastructure Information (appendix 1E) and Controlled Unclassified Information / Privileged and Confidential (appendix 1G) are not provided. Due to the size of appendix 1B, Aerial Photo Based Alignment Sheets, I will send in a separate email and will likely be shared via OneDrive. In addition, please see the attached KMZ and shapefile of the proposed Project for your reference.

As you are reviewing the Determination Letter, please do be in touch if there is any additional information you need for your review. We have field crews out this survey season, and in order to manage risk for WBI Energy, we want to be cognizant of any additional information you may need and data we should collect. We would not want to miss out on a critical window for field efforts should the need arise.

As I mentioned during our last call, I'll be out of the office for the duration of July/early-August, so please communicate with Becky Moores during this time.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: she/her/hers
ERM
M +1 503 984 6609

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Tuesday, June 21, 2022 9:34 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Cc: Jones, Seth A <seth_jones@fws.gov>
Subject: FW: informal consultation question for NLEB

Hello Leslie,

I have heard back from the northern-long eared bat (NLEB) lead, and for a NLAA determination, there would not be a need to reinitiate consultation if they are uplisted. It would be good for WBI to check in with us before construction to see if there are any new NLEB sightings, there are surveys planned throughout the state for this summer. Another conservation measure for NLEB would be for WBI to do the tree removal from Nov.1st-March 31st.
I do have a question for you, do you have the appendices 1A-H that are referenced in the resource report? We have a new oil and gas biologist that is helping review this project, and he is interested in reviewing them.
Thank you,
Jessica

From: Herrington, Karen <karen_herrington@fws.gov>
Sent: Thursday, June 16, 2022 4:50 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: Re: informal consultation question for NLEB

Hi Jessica,

If you agree it is NLAA now, you can go ahead and concur without the need to reinitiate consultation. I'm happy to explain in more detail, but basically, this would not meet any reinitiation triggers unless new information reveals effects not considered at the time of concurrence. I hope this helps!

Best,
Karen

_____

Karen Herrington
Field Supervisor
Missouri Ecological Services Field Office
U.S. Fish and Wildlife Service
cell: 573-356-1721 (preferred)
she/her/hers: why pronouns matter

_____

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Tuesday, June 14, 2022 9:38 AM
To: Herrington, Karen <karen_herrington@fws.gov>
Subject: informal consultation question for NLEB

Hello Karen,
We have received a biological assessment for a pipeline with planned construction in 2024 that has a

determination of “may affect not likely to adversely affect” for northern long-eared bat. They have made the determination based on the distance from northern long-eared bat sightings and the small amount of tree cutting, they did not use the 4(d) rule. If the bat is uplisted, will they need to reinitiate consultation?
I have been reading through the previous guidance, but it wasn’t clear for informal consultation.
Thank you,
Jessica Johnson

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From:	Johnson, Jessica N
To:	Leslie Rodman-Jaramillo; Linn, Jill (Jill.Linn@wbienergy.com)
Cc:	Hauge, Stephanie A; Jones, Seth A
Subject:	FW: WBI Wahpeton letter
Date:	Friday, July 1, 2022 7:39:01 AM
Attachments:	WBI Wahpeton expansion concurrence letter 6.29.22 (002).pdf

Hello Leslie and Jill,
Our concurrence letter for the WBI Wahpeton Expansion Project is attached. No hard copy to follow. Let me know if you have any questions.
-Jessica

From: Becker, Drew N <Drew_Becker@fws.gov>
Sent: Friday, July 1, 2022 6:12 AM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Cc: Hauge, Stephanie A <stephanie_hauge@fws.gov>; Jones, Seth A <seth_jones@fws.gov>
Subject: Re: WBI Wahpeton letter

Drew Becker
North Dakota Ecological Services Supervisor
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, North Dakota 58501
Office 701-355-8512
Cell 701-319-0127
drew_becker@fws.gov

Our Mission is to *work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people.*

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Thursday, June 30, 2022 3:14 PM
To: Becker, Drew N <Drew_Becker@fws.gov>
Cc: Hauge, Stephanie A <stephanie_hauge@fws.gov>; Jones, Seth A <seth_jones@fws.gov>
Subject: WBI Wahpeton letter

For signature

-Jessica

From: Johnson, Jessica N
Sent: Wednesday, June 29, 2022 12:52 PM
To: Drew <drew_becker@fws.gov>
Cc: Stephanie <stephanie_hauge@fws.gov>; Jones, Seth A <seth_jones@fws.gov>
Subject: Draft for review

For review- concurrence letter for WBI Energy's Wahpeton Expansion Project.
-Jessica

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services

IN REPLY REFER TO:
2022-Wahpeton
Expansion Project

3425 Miriam Avenue
Bismarck, North Dakota 58501

June 29, 2022

Ms. Jill Lynn
Environmental Affairs
WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, Montana 59330

Dear Ms. Lynn:

Thank you for your correspondence from May 27, 2022 requesting consultation on the WBI Energy Transmission, Inc.'s (WBI's) Wahpeton Expansion project on behalf of the Federal Energy Regulatory Commission. The proposal is to construct approximately 60.5 miles of 12 inch diameter natural gas transmission pipeline from Mapleton, North Dakota to near Wahpeton, North Dakota. The project will include minor modifications of the Mapleton compressor station, new block valves and pig launcher/receiver settings and newly constructed farm taps. The U.S. Fish and Wildlife Service (FWS) has the following comments.

You requested FWS concurrence with your "may affect, not likely to adversely affect" determinations for the threatened Dakota skipper (*Hesperia dacotae*), northern long-eared bat (*Myotis septentrionalis*) and Western prairie fringed orchid (*Platanthera praeclara*). In accordance with Section 7 of the Endangered Species Act of 1973, as amended (ESA) (16 U.S.C. 1531 *et seq*.), we concur with your determination.

The letter also includes a "no effect" determination for the Poweshiek skipperling (*Oarisma poweshiek*). There is no requirement under the implementing regulations of the ESA (50 CFR Part 402) for action agencies to receive FWS concurrence with "no effect" determinations, therefore the responsibility for "no effect" determinations remains with the federal action agency. Accordingly, we recommend the federal action agency retain the documentation for these listed resources in the decisional record for this federal action.

The FWS's concurrence is based on the information provided. Pursuant to the implementing regulations of the ESA (50 CFR 402.13), this letter concludes informal consultation on the project. If changes are made in the project plans or operating criteria, or if additional information, including new species listings, becomes available, the FWS should be informed so

that the above determinations can be reconsidered. If you have any additional questions or comments, please contact Jessica Johnson of my staff at (701) 355-8507 or via email at jessica_n_johnson@fws.gov or contact me at (701) 355-8512 or drew_becker@fws.gov.

Sincerely,

Drew Becker
ND Ecological Services Supervisor

-Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Thursday, December 1, 2022 5:40 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

Hi Jessica,

I just wanted to follow up on my earlier message prior to the Thanksgiving holiday. Can you please confirm receipt of the below message as well as my OneDrive link and access to the WBI Energy supplemental consultation letter?

Please call me if there are any items to discuss.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
M +1 503 984 6609

From: Leslie Rodman-Jaramillo
Sent: Thursday, November 17, 2022 4:38 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Cc: Jones, Seth A <seth_jones@fws.gov>; Jill.Linn@wbienergy.com; Maggie Suter <Maggie.Suter@erm.com>; Chris Schmidt <chris.schmidt@erm.com>
Subject: WBI Energy - Wahpeton Supplemental Consultation Letter

Hi Jessica,

Read our Sustainability Report and ERM Foundation Annual Review

---

Hi Jessica,

I just wanted to follow up on my earlier message prior to the Thanksgiving holiday. Can you please confirm receipt of the below message as well as my OneDrive link and access to the WBI Energy supplemental consultation letter?

Please call me if there are any items to discuss.

Thank you,
Leslie
Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
M +1 503 984 6609

From: Leslie Rodman-Jaramillo
Sent: Thursday, November 17, 2022 4:38 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Cc: Jones, Seth A <seth_jones@fws.gov>; Jill.Linn@wbienergy.com; Maggie Suter <Maggie.Suter@erm.com>; Chris Schmidt <chris.schmidt@erm.com>
Subject: WBI Energy - Wahpeton Supplemental Consultation Letter

Hi Jessica,

On behalf of WBI Energy, I am reaching out to provide the USFWS a supplemental consultation letter for the Wahpeton Expansion Project.

The letter is to inform you of a minor Project route adjustment since the May 27, 2022 filing of the Project Determination Letter and subsequent USFWS concurrence letter issued on July 1, 2022.

Due to the size of the file, I'm going to share that via OneDrive in a separate email , so let me know if you have any difficulties accessing the supplemental consultation letter and associated attachments.

Please reach out if you have any questions during your review.

Thank you,
Leslie
Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
1050 SW 6th Ave Suite 1650 | Portland, OR | 97204
M +1 503 984 6609
E Leslie.RodmanJaramillo@erm.com | **W** www.erm.com

On behalf of WBI Energy, I am reaching out to provide the USFWS a supplemental consultation letter for the Wahpeton Expansion Project.

The letter is to inform you of a minor Project route adjustment since the May 27, 2022 filing of the Project Determination Letter and subsequent USFWS concurrence letter issued on July 1, 2022.

Due to the size of the file, I'm going to share that via OneDrive in a separate email , so let me know if you have any difficulties accessing the supplemental consultation letter and associated attachments.

Please reach out if you have any questions during your review.

Thank you,
Leslie

Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
1050 SW 6th Ave Suite 1650 | Portland, OR | 97204
M +1 503 984 6609
E Leslie.RodmanJaramillo@erm.com | **W** www.erm.com

Read our Sustainability Report and ERM Foundation Annual Review

---

This message contains information which may be confidential, proprietary, privileged, or otherwise protected by law from disclosure or use by a third party. If you have received this message in error, please contact us immediately at (303) 741-5050 and take the steps necessary to delete the message completely from your computer system. Thank you.

Please visit ERM's web site: http://www.erm.com. To find out how ERM manages personal data, please review our Privacy Policy

From: Leslie Rodman-Jaramillo
To: Johnson, Jessica N
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter
Date: Friday, December 2, 2022 8:35:00 AM
Attachments: image001.png

Thanks for confirming, Jessica. Yes, that is correct 106 pages with attachments A-D.

Please let me know if you have further questions or would like to discuss further.

Leslie
Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
M +1 503 984 6609

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Friday, December 2, 2022 6:52 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

EXTERNAL MESSAGE

Yes, I was able to open it. Confirming that it is 106 pages with attachments A-D.
-Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Thursday, December 1, 2022 5:40 PM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

From: Johnson, Jessica N
To: Leslie Rodman-Jaramillo
Subject: WBI Energy - Wahpeton Supplemental Consultation Letter
Date: Thursday, December 15, 2022 11:55:02 AM
Attachments: image001.png
WBI Wahpeton expansion concurrence letter 12.13.22 (002) (1).pdf

---

EXTERNAL MESSAGE

Hello Leslie,
We have reviewed the supplemental consultation and I have attached our concurrence letter. No hard copy to follow. Let me know if you have any questions.
Thanks,
Jessica

Jessica Johnson
Environmental Contaminants Specialist
U.S. Fish and Wildlife Service
3425 Miriam Avenue
Bismarck, ND 58501
Phone: 701-355-8507
Cell: 720-626-5250

From: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Sent: Friday, December 2, 2022 10:36 AM
To: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

Thanks for confirming, Jessica. Yes, that is correct 106 pages with attachments A-D.

Please let me know if you have further questions or would like to discuss further.

Leslie
Leslie Rodman-Jaramillo
Senior Consultant, Scientist
Pronouns: She/Her/Hers
ERM
M +1 503 984 6609

From: Johnson, Jessica N <jessica_n_johnson@fws.gov>
Sent: Friday, December 2, 2022 6:52 AM
To: Leslie Rodman-Jaramillo <leslie.rodmanjaramillo@erm.com>
Subject: RE: [EXTERNAL] RE: WBI Energy - Wahpeton Supplemental Consultation Letter

EXTERNAL MESSAGE

Yes, I was able to open it. Confirming that it is 106 pages with attachments A-D.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services

3425 Miriam Avenue
Bismarck, North Dakota 58501

December 13, 2022

IN REPLY REFER TO:
2022-0000981
Wahpeton Expansion
Project

Ms. Jill Lynn
Environmental Affairs
WBI Energy Transmission, Inc.
2010 Montana Avenue
Glendive, Montana 59330

Dear Ms. Lynn:

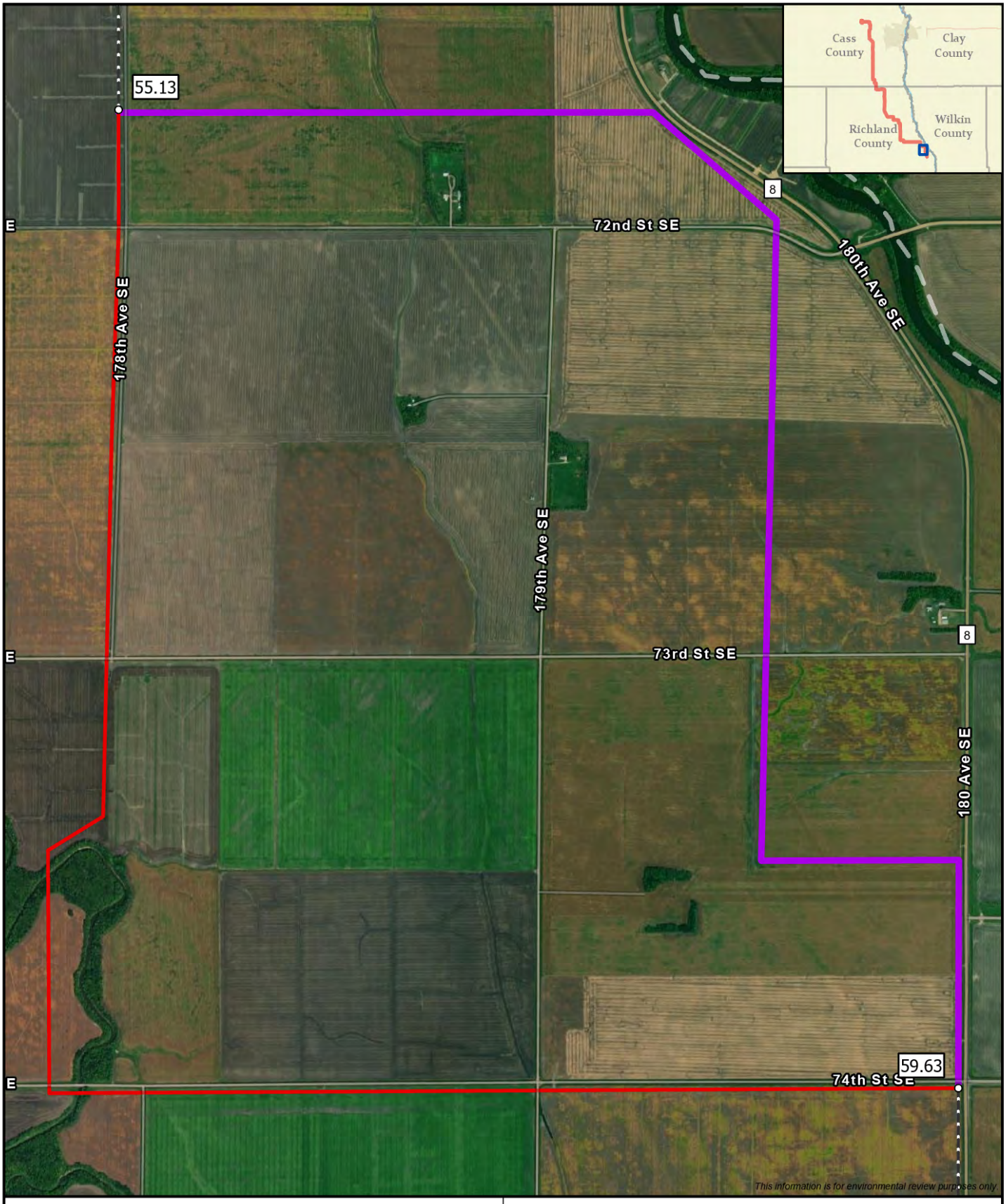
Thank you for the opportunity to provide comments on the proposed minor route adjustment for the Wahpeton Expansion Project. As stated in your letter, previously WBI Energy Transmission, Inc. (WBI) submitted a Biological Assessment (BA) on May 27, 2022. After US Fish and Wildlife Service (FWS) concurrence, a minor route adjustment was proposed for the project. The proposed route alternative would avoid two crossings of the Wild Rice River. Under the authority of and in according with the Endangered Species Act (ESA) (16 U.S.C. 1531 *et seq*.), we have reviewed the alternatives and have concluded that the proposed modifications to the action will not cause an effect to the listed species or critical habitat that was not considered in the previous consultation.

The FWS appreciates the opportunity to work with WBI the Federal Energy Regulatory Commission (FERC) on our shared conservation goals. Should you have any questions regarding these comments, please have your staff contact Jessica Johnson of my staff at (701) 355-8507 or at the letterhead address or contact me at (701) 355-8512.

Sincerely,

Drew N. Becker
North Dakota Field Office Supervisor

ATTACHMENT C PROJECT OVERVIEW MAP



Alternative/Variation

Corresponding Segment of Proposed Route

Milepost

Proposed Route

1:20,000

0 0.07 0.15 0.3 Miles

Figure 1
Wild Rice River Route Alternative MP 55
Wahpeton Expansion Project
WBI Energy Transmission, Inc.
Richland County, North Dakota

ERM

MPLS M:\Clients\V-X\WBI\Mapleton_to_Wahpeton\ArcGIS\M2W_FERC_Filing_Report\M2W_FERC_Filing_Report.aprx | REVISED: 09/01/2022 | SCALE: 1:3,677,839

DRAWN BY: RJC

ATTACHMENT D IPaC OFFICIAL SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
Phone: (701) 250-4481 Fax: (701) 355-8513
https://www.fws.gov/office/north-dakota-ecological-services

In Reply Refer To: October 14, 2022
Project Code: 2022-0009567
Project Name: WBI Energy - Wahpeton Expansion Project

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:

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/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (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. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please 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. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- 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:

North Dakota Ecological Services Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926
(701) 250-4481

Project Summary

Project Code: 2022-0009567
Project Name: WBI Energy - Wahpeton Expansion Project
Project Type: Natural Gas Distribution
Project Description: WBI Energy Transmission, Inc. (WBI Energy) proposes to construct, modify, operate, and maintain the Wahpeton Expansion Project (Project). The Project will involve the construction of approximately 60.6 miles of 12-inch-diameter natural gas transmission pipeline from WBI Energy's existing Mapleton Compressor Station near Mapleton, North Dakota to a new Montana-Dakota Utilities Company (MDU)—Wahpeton Border Station near Wahpeton, North Dakota. The Project will also include minor modifications at the Mapleton Compressor Station; a new MDU—Kindred Border Station near Kindred, North Dakota; new block valve settings; and new pig launcher/receiver settings. The Project may also include newly constructed farm taps along the pipeline route. The proposed Project facilities will be located in Cass and Richland Counties, North Dakota.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@46.29534135,-96.61868914439961,14z

Counties: Cass and Richland counties, North Dakota

Endangered Species Act Species

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

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

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

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

---

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	Threatened

Insects

NAME	STATUS
Dakota Skipper *Hesperia dacotae* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
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.

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.

Wetlands

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

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

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

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

IPaC User Contact Information

Agency:	ERM
Name:	Leslie Rodman-Jaramillo
Address:	1050 SW 6th Ave
Address Line 2:	Suite 1650
City:	Portland
State:	OR
Zip:	97204
Email	leslie.rodmanjaramillo@erm.com
Phone:	5039846609

Lead Agency Contact Information

Lead Agency: Federal Energy Regulatory Commission

Attachment 8
Archaeological and Architectural Survey Reports

Filed under separate cover as

Controlled Unclassified Information / Privileged and Confidential

Privileged and Confidential

Attachment 9
Updated SHPO Correspondence

Kevin Malloy

From: Kevin Malloy
Sent: Tuesday, June 21, 2022 10:13 AM
To: Clark, Andrew
Subject: PS-RAM-02
Attachments: 06212022_SHSND_PS-RAM-02-Testing Plan.pdf

Hello Andy,

Please find attached the proposed testing plan that we discussed last week. We currently have a crew in the field and are able to complete the testing as soon as possible. I am aware you are short staffed at the moment but if you could send me your comments/approval of the plan by the end of the week, it would be most appreciated.

Please feel free to reach out to me with any questions or comments.
Thank you!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

Call Log

Log of Telephone Conversation

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	6/17/2022
Time of Conversation	11:19 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Andy Clark (State Archaeologist SHSND) called Dr. Kevin Malloy (ERM) to discuss a number of questions. Dr. Malloy asked about the status of the outstanding report comments. Dr. Clark stated he thought that he had forwarded his comments along. Dr. Malloy said he had not received them. Dr. Clark said he would check and see if he had forwarded them. Dr. Malloy then asked about if it would be acceptable to submit a testing plan and have the SHSND review it quickly in order to get work under way during the current mobilization. Dr. Clark stated they would accept a letter workplan but that they were extremely understaffed at the moment. They would try to review it as quickly as possible but not to expect it overnight. Finally Dr. Malloy asked about potential testing and whether they would prefer that in a separate testing report or included in the main Class III report. Dr. Clark stated he was fine with a separate testing report.

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	06/23/2022
Time of Conversation	11:18 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Dr. Andrew Clark (State Archaeologist SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. A message was left.

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/11/2022
Time of Conversation	13:46
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Dr. Andrew Clark (State Archaeologist SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. A message was left.

Kevin Malloy

From: Kevin Malloy
Sent: Tuesday, July 19, 2022 9:46 AM
To: Bleier, Amy C.
Subject: RE: NDCRS: Proposed Wahpeton Expansion-Richland County

Thanks Amy! I just got your email. I was out on Friday and yesterday.

Have a great rest of the week!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Bleier, Amy C. <ableier@nd.gov>
Sent: Friday, July 15, 2022 9:32 AM
To: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: NDCRS: Proposed Wahpeton Expansion-Richland County

Hi Kevin,

Attached is the number assignment letter for the NDCRS forms submitted recently.

Thank you,
Amy

Amy C. Bleier
Research Archaeologist
State Historical Society of North Dakota/SHPO
612 E Boulevard Ave, Bismarck ND 58505

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/19/2022
Time of Conversation	10:05 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Dr. Andrew Clark (State Archaeologist SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. A message was left.

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Telephone: +1 612 347 6789
Fax: +1 612 347 6780

www.erm.com

Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/20/2022
Time of Conversation	10:05 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Dr. Andrew Clark (State Archaeologist SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. A message was left.

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Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/22/2022
Time of Conversation	11:53 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Dr. Andrew Clark (State Archaeologist SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. No message was left.

ERM

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Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Lisa Steckler (SHSND)
Phone number	701.328.2666
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/22/2022
Time of Conversation	11:50 am
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Lisa Steckler (SHSND) to discuss the submitted testing plan for site PS-RAM-02. He did not get through. No message was left.

ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

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Fax: +1 612 347 6780

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Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Lisa Steckler (SHSND)
Phone number	701.328.2666
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/22/2022
Time of Conversation	14:04
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Kevin Malloy (ERM) called Lisa Steckler (SHSND) to discuss the submitted testing plan for site PS-RAM-02. He informed her that it had been 30 days since the plan was submitted. Ms. Steckler looked for the plan but wasn't able to immediately find it. She requested it be sent directly to her, and she would ensure it is reviewed by early next week.

ERM

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Suite 2900
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Fax: +1 612 347 6780

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Call Log

Log of Telephone Conversation

ERM

Call To/From Whom	Andrew Clark (SHSND)
Phone number	701.328.3574
Company	SHSND
ERM Contact	Kevin Malloy
Phone number	906-285-0361
Date	7/22/2022
Time of Conversation	15:00
Reference	Wahpeton Expansion Project (Project)
Signature	

LOG OF CONVERSATION

Dr. Andrew Clark (SHSND State Archaeologist) called Dr. Kevin Malloy (ERM) to discuss the submitted testing plan for site PS-RAM-02. Dr. Clark acknowledged receipt of the document and stated he would attempt to review it today or have it done by early next week.

Kevin Malloy

From: Kevin Malloy
Sent: Friday, July 22, 2022 2:29 PM
To: Steckler, Lisa L.
Subject: RE: WBI Wahpeton Expansion Testing Plan

Thank you Lisa! Have a great weekend.
Best,
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Friday, July 22, 2022 2:26 PM
To: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: WBI Wahpeton Expansion Testing Plan

Got it! I will make sure it gets back to you early next week!

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Friday, July 22, 2022 2:18 PM
To: Steckler, Lisa L. <lsteckler@nd.gov>
Subject: WBI Wahpeton Expansion Testing Plan

Hi Lisa,

Thank you again for chatting with me. Per our conversation, please fine our testing plan for site PS-RAM-02.

If you have any questions or need anything else, please let me know.

Best,
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

Kevin Malloy

From: Bleier, Amy C. <ableier@nd.gov>
Sent: Wednesday, September 7, 2022 8:55 AM
To: Emily Dodson
Cc: Kevin Malloy
Subject: RE: Wahpeton Expansion: Resource 001 question

Got it, thanks!

Amy C. Bleier
Archaeologist
Archaeology & Historic Preservation/SHPO
State Historical Society of North Dakota
612 E Boulevard Ave
Bismarck ND 58505
701 328 3088

HISTORY FOR everyone.

From: Emily Dodson <Emily.Dodson@erm.com>
Sent: Friday, September 2, 2022 5:24 PM
To: Bleier, Amy C. <ableier@nd.gov>
Cc: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: Wahpeton Expansion: Resource 001 question

Hello Amy,

I have attached the correct site topo for "Resource 001." Please let me know if you need anything else!

Thank you and enjoy your holiday weekend!

Emily Dodson
Architectural Historian, Consultant I

ERM
5000 Meridian Blvd Ste. 300 | Franklin, TN | 37067
M +1 (865) 405-0785
E emily.dodson@erm.com | **W** www.erm.com

From: Bleier, Amy C. <ableier@nd.gov>
Sent: Thursday, September 1, 2022 2:20 PM
To: Emily Dodson <Emily.Dodson@erm.com>
Cc: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: Wahpeton Expansion: Resource 001 question

Sounds good, thank you.

Amy C. Bleier
Archaeologist
Archaeology & Historic Preservation/SHPO
State Historical Society of North Dakota
612 E Boulevard Ave
Bismarck ND 58505
701 328 3088

HISTORY FOR everyone.

From: Emily Dodson <Emily.Dodson@erm.com>
Sent: Thursday, September 1, 2022 1:19 PM
To: Bleier, Amy C. <ableier@nd.gov>
Cc: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: Wahpeton Expansion: Resource 001 question

Hi Amy,

My apologies for the issues with the topo map. I am working on getting the issue resolved and will send you the map as soon as possible.

Thank you,

Emily Dodson

Architectural Historian, Consultant I

ERM
5000 Meridian Blvd Ste. 300 | Franklin, TN | 37067
M +1 (865) 405-0785
E emily.dodson@erm.com | **W** www.erm.com

From: Bleier, Amy C. <ableier@nd.gov>
Sent: Thursday, September 1, 2022 2:06 PM
To: Emily Dodson <Emily.Dodson@erm.com>
Cc: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: Wahpeton Expansion: Resource 001 question

Hi Emily,

I have run into an issue with the NDCRS form for Field Code Resource 0001 (32RI924). The topo map attached to the form indicates the location of 32RI920. That is why I changed the legal description on page 1 when I sent you the number assignment letter. Will you email me the correct topo map so I may re-collate the form? I will change the legal description and map quad back to what they were.

Amy C. Bleier
Archaeologist
Archaeology & Historic Preservation/SHPO
State Historical Society of North Dakota
612 E Boulevard Ave
Bismarck ND 58505
701 328 3088

Kevin Malloy

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Tuesday, October 11, 2022 2:02 PM
To: Kevin Malloy
Subject: RE: Deep Testing Workplan

I found it! It is the next thing in our queue

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Tuesday, October 11, 2022 1:55 PM
To: Steckler, Lisa L. <lsteckler@nd.gov>
Subject: RE: Deep Testing Workplan

Thank you Lisa!

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Tuesday, October 11, 2022 1:54 PM
To: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: Deep Testing Workplan

Ok. Thanks. I will look for it and get back to you!

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Tuesday, October 11, 2022 1:53 PM

To: Steckler, Lisa L. <lsteckler@nd.gov>; Clark, Andrew <andrewclark@nd.gov>
Subject: RE: Deep Testing Workplan

******* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *****

Hi Lisa,

We submitted a hard copy as well. I sent it on the 9/15 and it should have arrived 9/19.
Thanks!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Tuesday, October 11, 2022 1:51 PM
To: Kevin Malloy <Kevin.Malloy@erm.com>; Clark, Andrew <andrewclark@nd.gov>
Subject: RE: Deep Testing Workplan

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Kevin,

Did you submit a hard copy or just digital? Just to the ftp or via email?

Thanks!

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Tuesday, October 11, 2022 1:50 PM
To: Clark, Andrew <andrewclark@nd.gov>; Steckler, Lisa L. <lsteckler@nd.gov>
Subject: Deep Testing Workplan

******* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. *****

Hello Andy and Lisa,

I hope this email finds you both well and you're enjoying the fall weather! A few weeks ago we submitted a geomorphological analysis and a proposed deep testing workplan for your review for the WBI Wahpeton Project. I was wondering if either of you had had a chance to at least review the workplan? We would like to try to get in the field before everything freezes. We are just looking for SHSND approval to proceed with that.

Thank you for your help!
Best,
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

Kevin Malloy

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Wednesday, October 12, 2022 11:49 AM
To: Kevin Malloy
Subject: 21-6245 Deep Testing
Attachments: 21-6245 GeoMorph Plan Acceptable Malloy.pdf

Please see attached. No hard copy to follow.

Lisa L Steckler
Historic Preservation Specialist
State Historical Society of North Dakota

Kevin Malloy

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Tuesday, November 29, 2022 10:17 AM
To: Kevin Malloy
Subject: RE: ERM 2022 Annual Permit Application
Attachments: ERM MN Permit 2022.pdf

Please see attached.

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Tuesday, November 29, 2022 10:15 AM
To: Steckler, Lisa L. <lsteckler@nd.gov>
Subject: RE: ERM 2022 Annual Permit Application

Hi Lisa,
Do you happen to have a pdf of ERM's 2022 permit? I don't seem to have it in my email.
Thank you!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Monday, March 7, 2022 2:28 PM
To: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: ERM 2022 Annual Permit Application

Not as far as I know, I think it has always been that way!

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Monday, March 7, 2022 2:27 PM
To: Steckler, Lisa L. <lsteckler@nd.gov>
Subject: RE: ERM 2022 Annual Permit Application

Hey Lisa,

I just paid the permit cost. I had one question for you. I guess I wasn't aware that I needed to notarize the permit application. Is that a new requirement?

Thanks for the help!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

From: Steckler, Lisa L. <lsteckler@nd.gov>
Sent: Monday, March 7, 2022 11:53 AM
To: Kevin Malloy <Kevin.Malloy@erm.com>
Subject: RE: ERM 2022 Annual Permit Application

We need a hard copy of the notarized application, not the rest of it. A check is fine or if you prefer to call in a credit card payment that works as well. 701-328-2666

Thanks!

From: Kevin Malloy <Kevin.Malloy@erm.com>
Sent: Monday, March 7, 2022 11:50 AM

To: Steckler, Lisa L. <lsteckler@nd.gov>
Subject: ERM 2022 Annual Permit Application

Hi Lisa,

Hope you had a nice weekend! I just uploaded our 2022 permit application for fieldwork. I had two questions for you. Do you need a hard copy and would you prefer to invoice ERM for the $100 or do you want, as it says, a physical check?

Thank you!
Kevin

Kevin Malloy, Ph.D.
Senior Consultant/Archaeologist

ERM
222 South 9th Street | Suite 2900 | Minneapolis, MN 55402
M 906.285.0361
E Kevin.Malloy@erm.com | **W** www.erm.com

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Please visit:
ERM's web site: http://www.erm.com. To find out how ERM manages personal data, please review our Privacy Policy

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ERM

222 South 9th Street
Suite 2900
Minneapolis, MN 55402

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www.erm.com

December 1, 2022

Andrew Clark, State Archaeologist
State Historic Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Subject: WBI Energy Transmission, Inc.
Wahpeton Expansion Project –Class III Archaeology Survey Report and Class III Structures Survey Report from 2021 and 2022
Cass and Richland Counties, North Dakota

Dear Dr. Clark:

Please reference WBI Energy Transmission, Inc.'s (WBI Energy's) previous correspondence regarding the above referenced project. WBI Energy proposes to construct and operate the Wahpeton Expansion Project (Project) in Cass and Richland Counties, North Dakota.

The Project is regulated by the Federal Energy Regulatory Commission (FERC) under Section 7(c) of the Natural Gas Act. Under the Energy Policy Act of 2005, FERC is the lead agency for coordinating federal authorizations and complying with the National Environmental Policy Act on natural gas pipeline projects subject to its jurisdiction. FERC similarly is the lead federal agency for complying with Section 106 of the National Historic Preservation Act (NHPA) on natural gas pipeline projects under its jurisdiction. In accordance with 36 CFR 800.2(c)(4), WBI Energy is assisting the FERC in meeting its obligations under Section 106 of the NHPA by coordinating with agencies and tribes and conducting surveys to identify historic properties that may be affected by the Project.

Enclosed for your review, please find the Class III Archaeology Survey Report and the Class III Structures Survey Report in support of the Project for survey efforts conducted from October to November 2021, and in June 2022.

WBI Energy would appreciate your comments on the attached reports. If you have any questions or comments on the Project or the reports, please contact me at 906-285-0361 or kevin.malloy@erm.com. Please direct written correspondence to Dr. Malloy's attention at:

Environmental Resources Management
222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Sincerely,

Kevin Malloy
Senior Consultant

Enclosures: Class III Historic Architectural Survey: WBI Energy Transmission, Inc. Wahpeton Expansion Project, Cass and Richland Counties, North Dakota
Class III Archaeological Inventory Survey Report: WBI Energy Transmission, Inc. Wahpeton Expansion Project, Cass and Richland Counties, North Dakota

cc: Jill Linn, WBI Energy
Maggie Suter, ERM
Kevin Malloy, ERM
Emily Laird, ERM
Andrew Clark, SHSND
Lisa Steckler, SHSND
Teanna Limpy, Northern Cheyenne Tribe
Allen Demaray, Three Affiliated Tribes of the Fort Berthold Reservation
Dyan Youpee, Assiniboine and Sioux Tribes of the Fort Peck Reservation
Ione Quigley, Rosebud Sioux Tribe
Michael Black Wolf, Fort Belknap Indian Community
Tom Brings, Oglala Sioux Tribe
Jon Eagle, Standing Rock Sioux Tribe
Ben Ridgely, Northern Arapaho Tribe
Steven Vance, Cheyenne River Sioux
Erich Longie, Spirit Lake Tribe
Kip Spotted Eagle, Yankton Sioux Tribe
Jeff Desjarlais, Jr., Turtle Mountain Band of Chippewa
Dianne Desrosiers, Sisseton Wahpeton Oyate
Kade Ferris, Red Lake Band of Chippewa Indians of Minnesota
Samantha Odegard, Upper Sioux Community of Minnesota

ERM

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www.erm.com

December 1, 2022

Lisa Steckler
State Historic Society of North Dakota
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830

Subject: WBI Energy Transmission, Inc.
Wahpeton Expansion Project –Class III Archaeology Survey Report and Class III Structures Survey Report from 2021
Cass and Richland Counties, North Dakota

Dear Ms. Steckler:

Please reference WBI Energy Transmission, Inc.'s (WBI Energy's) previous correspondence regarding the above referenced project. WBI Energy proposes to construct and operate the Wahpeton Expansion Project (Project) in Cass and Richland Counties, North Dakota.

The Project is regulated by the Federal Energy Regulatory Commission (FERC) under Section 7(c) of the Natural Gas Act. Under the Energy Policy Act of 2005, FERC is the lead agency for coordinating federal authorizations and complying with the National Environmental Policy Act on natural gas pipeline projects subject to its jurisdiction. FERC similarly is the lead federal agency for complying with Section 106 of the National Historic Preservation Act (NHPA) on natural gas pipeline projects under its jurisdiction. In accordance with 36 CFR 800.2(c)(4), WBI Energy is assisting the FERC in meeting its obligations under Section 106 of the NHPA by coordinating with agencies and tribes and conducting surveys to identify historic properties that may be affected by the Project.

Enclosed for your review, please find the Class III Archaeology Survey Report and the Class III Structures Survey Report in support of the Project for survey efforts conducted from October to November 2021 and June 2022.

WBI Energy would appreciate your comments on the attached reports. If you have any questions or comments on the Project or the reports, please contact me at 906-285-0361 or kevin.malloy@erm.com. Please direct written correspondence to Dr. Malloy's attention at:

Environmental Resources Management
222 South 9th Street
Suite 2900
Minneapolis, MN 55402

Sincerely,

Kevin Malloy
Senior Consultant

Enclosures: Class III Historic Architectural Survey: WBI Energy Transmission, Inc. Wahpeton Expansion Project, Cass and Richland Counties, North Dakota
Class III Archaeological Inventory Survey Report: WBI Energy Transmission, Inc. Wahpeton Expansion Project, Cass and Richland Counties, North Dakota

cc: Jill Linn, WBI Energy
Maggie Suter, ERM
Kevin Malloy, ERM
Emily Laird, ERM
Andrew Clark, SHSND
Lisa Steckler, SHSND
Teanna Limpy, Northern Cheyenne Tribe
Allen Demaray, Three Affiliated Tribes of the Fort Berthold Reservation
Dyan Youpee, Assiniboine and Sioux Tribes of the Fort Peck Reservation
Ione Quigley, Rosebud Sioux Tribe
Michael Black Wolf, Fort Belknap Indian Community
Tom Brings, Oglala Sioux Tribe
Jon Eagle, Standing Rock Sioux Tribe
Ben Ridgely, Northern Arapaho Tribe
Steven Vance, Cheyenne River Sioux
Erich Longie, Spirit Lake Tribe
Kip Spotted Eagle, Yankton Sioux Tribe
Jeff Desjarlais, Jr., Turtle Mountain Band of Chippewa
Dianne Desrosiers, Sisseton Wahpeton Oyate
Kade Ferris, Red Lake Band of Chippewa Indians of Minnesota
Samantha Odegard, Upper Sioux Community of Minnesota

Scope of Work
for Proposed Targeted Phase 1b Geomorphological and Geoarchaeological Testing for Presence, Absence and Geological Potential for Buried Cultural Deposits at Seven Locations on the Glacial Lake Agassiz Plain, Wahpeton Pipeline, Southeast North Dakota

Prepared For
William Stanyard
ERM
3300 Breckinridge Blvd., Suite 300
Duluth, GA 30096

Prepared By
Edwin R. Hajic
GeoArc®
GeoArc Research, Inc.
Santa Fe, NM 87508

August 29, 2022

INTRODUCTION

On behalf of their client WBI Energy Transmission, Inc. (WBI), Environmental Resources Management (ERM) is performing a Phase 1 cultural resource survey of the Wahpeton Pipeline (Project) corridor across a section of the southwest end of the Glacial Lake Agassiz basin in Cass and Richland Counties, North Dakota (Figure 1). WBI proposes to construct the Project, a 95.8-km-long (59.5-mile-long) pipeline, between a station about 10.8 km (6.7 mi) west of the west side of Fargo, North Dakota, south-southeast to a station about 5.7 km (3.5 mi) west of the Red River, the boundary between North Dakota and Minnesota.

The North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects (State of North Dakota, 2020) includes provision for specialist studies as needed to conduct archaeological surveys in a thorough manner. ERM contracted GeoArc Research, Inc., (GeoArc) to conduct a Phase 1a desktop assessment of the geological potential for buried intact cultural deposits along the Project corridor (Hajic, 2022). Seven deep test locations (DTLs) were identified and recommended for further subsurface investigation based on having a moderate to high geological potential for hosting cultural deposits of pre-Euroamerican settlement age buried to depths greater than standard archaeological shovel testing where the Project crosses them. Six of the DTLs have landform sediment assemblages associated with one or more of the rivers or creeks that cross the glaciolacustrine plain and post-date Glacial Lake Agassiz drainage. At one DTL, the Project crosses an aeolian dune field that likely post-dates lake drainage. It is the alluvial, and dune sediment assemblages that overlie and / or are inset into Glacial Lake Agassiz features, and the locally buried paleogeomorphic surface marking the top of the glaciolacustrine clay, that are of concern for hosting buried cultural deposits. The body of glaciolacustrine clay also represents a moderate or high geological potential for burial and preservation of cultural deposits of pre-Euroamerican settlement age. However, while artifacts of significance, such as canoes, potentially could be present within glaciolacustrine clay increments of appropriate age, the discovery of such rare finds historically has been nearly entirely, if not entirely, by happenstance. Given the extensive length of pipeline route, and the lack of physical criteria to narrow a search for such artifacts, GeoArc is focused on those locations with a greater chance of encountering buried cultural deposits of significance, if present. Thus, for the purpose of this investigation, the paleogeomorphic surface representing the pre-drainage lake floor is considered a basement, while acknowledging the age of underlying glaciolacustrine deposits does not preclude the possibility of them hosting buried, potentially significant, cultural deposits.

SUBSURFACE TESTING OF DTLs

GeoArc will conduct geomorphological / geoarchaeological deep subsurface testing investigations in accordance with the North Dakota SHPO Guidelines at seven locations identified along the Project in the desktop assessment (Hajic; 2022) (Figure 1; Figures 2-8 in Appendix A). Testing of these locations will be conducted along the Project centerline from northwest to southeast at:

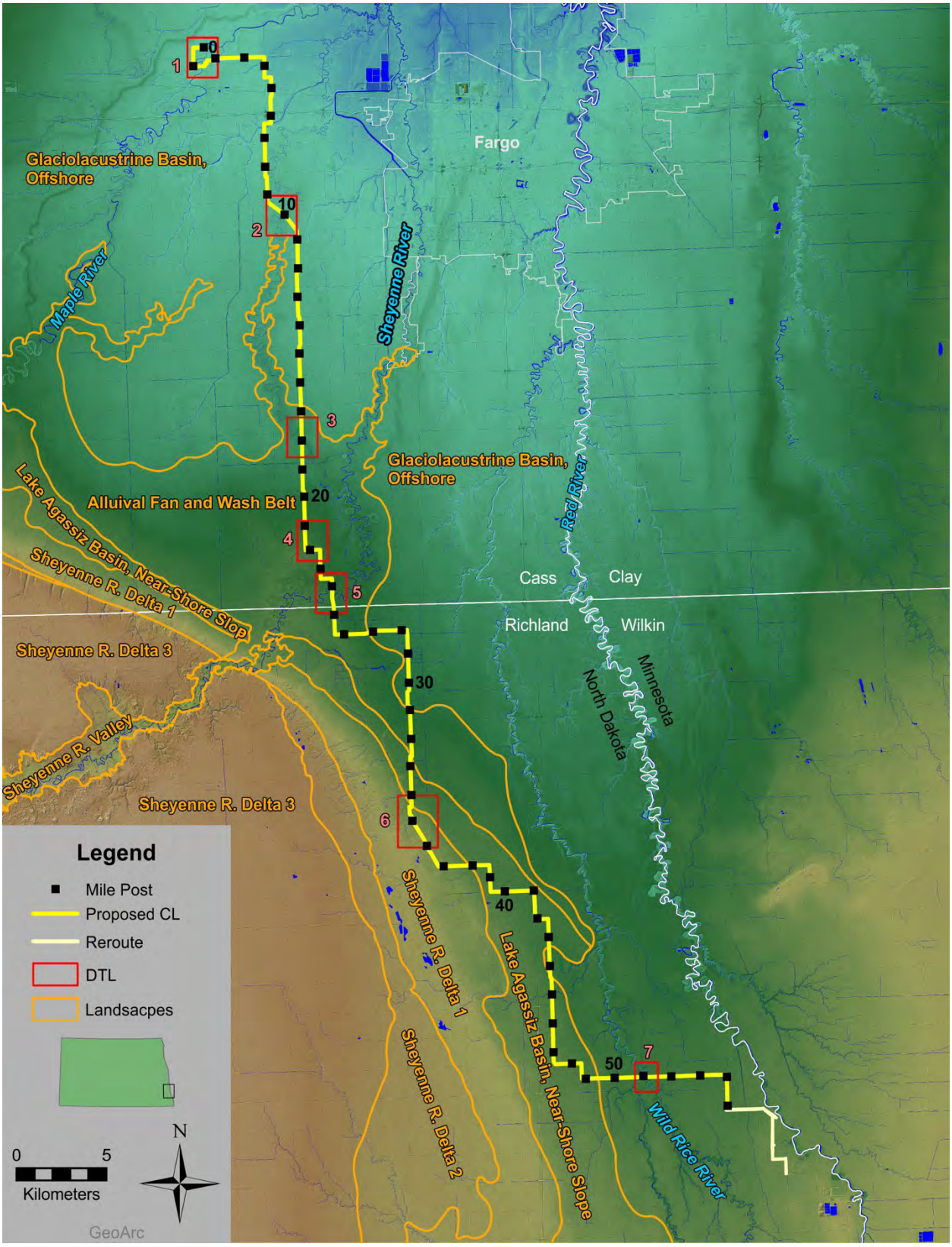

Figure 1. Project pipeline centerline, macro-geomorphology and potential deep test locations

- the Maple River Valley and associated overwash (DTL-01; Figure 2);
- a paleochannel belt of the Sheyenne River, now occupied by an unnamed creek, and associated natural levees (DTL-02, -03; Figures 3 and 4);
- a large crevasse splay lobe off of a Sheyenne River paleochannel (DTL-04; Figure 5);
- the Sheyenne River Valley and associated levees and crevasse splay (DTL-05; Figure 6);
- twelve aeolian dunes located on the youngest surface of the relict Sheyenne River Delta (DTL-06; Figure 7)); and,
- the Wild Rice River Valley and Antelope Creek Valley just above their confluence (DTL-07; Figure 8).

The objective is to determine the presence, absence and geological potential for deeply buried cultural deposits based on deep testing of targeted sediment assemblages. Specific and largely subtle alluvial geomorphological features rising above, and inset into, the glaciolacustrine lake bed will be sampled. These include some of the highest local landscape positions along the route, excluding the relict Sheyenne River delta. It is anticipated that, with the exception of a small number of these alluvial settings, underlying glaciolacustrine sediment will be encountered before the 3 m (10 ft) depth of pipeline trench excavation is attained in subsurface tests. However, the glaciolacustrine surface likely will be deeper than the depth of standard shovel testing in most, if not all, projected specific deep test locations. Sampling of the aeolian dunes may extend a little deeper than 3 m (10 ft) in an effort to reach their base.

Subsurface testing at DTLs will occur in agricultural fields, with a few locations being in local pastures or in forested patches. GeoArc is committed to conducting the subsurface work safely while adhering to safety requirements of GeoArc, the client, and any third party pipeline or other utility operators. It is anticipated that ample safe workspace will be available within the pipeline survey limit and workspace corridor at the DTLs proposed for subsurface testing. The targeted minimum distance of sampling from any existing pipeline, if present, will be no less than 15 m (50 ft).

North Dakota utility One-Calls will be conducted in advance of any fieldwork. One Call locations will request all underground utilities be located within a substantial buffer for each projected subsurface test or group of tests. For contextual purposes, DTL boundaries extend far beyond the targeted limits of that part of the route where subsurface testing will be accomplished. However, any in-field repositioning of subsurface test locations will be confined within the survey / work corridor.

Positions of projected subsurface tests might be subject to minor shifts to accommodate on–the–ground obstacles and field conditions, North Dakota One Call responses, or other identified safety– or access–related field conditions. If access is challenging, landowners impose restrictions for the work, or preceding field results indicate a different position would better fulfill the objective(s) of a specific deep test, GeoArc will have the flexibility to reposition nearby a specific projected deep test, subject to the repositioned test being positioned collectively within the limits of the submitted or a new one-call, the survey / work corridor, and land access agreement limits. In the case of the absence of a suitable alternative location that would fulfill the objective(s) of the deep test, that specific projected deep test could be abandoned. Final specific subsurface test locations, spacing and numbers could further be adjusted depending on results of preceding tests

to maximize information return and efficiency.

FIELD METHODS

A combination of sediment / soil coring and mechanical augering will be used to test for buried cultural deposits and document near–surface sedimentologic, soil and stratigraphic contexts within the Project survey area at the seven DTLs (Figure 1). Forty-three paired core and mechanical auger locations are projected for investigation (Figures 2-8, Appendix A). Final numbers may vary according to in-field conditions, access, and progressive general assessment of observed results.

Sediment / Soil Coring

Cores will be the primary source for formal sediment and soil descriptions, and provide sediment, soil and stratigraphic context at the DTLs. Solid, continuous sediment / soil cores will be taken with an ATV–mounted Giddings Hydraulic Soil Probe, or a trailer-mounted Heavy Duty Giddings Probe, utilizing a 1.2 meter–long (4 foot–long) barrel that is either 6.4 centimeter (2.5 inch) or 5.1 centimeter (2.0 inch) in diameter, depending on location and anticipated sediment assemblage and soils. Coring will proceed by inserting a clear liner in the barrel, pushing the barrel into the ground, retracting the barrel, extracting the liner, examining and noting sediment at the ends of the liner and changes within the liner, and labeling and capping the ends of the liner for later detailed description. Depth of coring will be 3 meters (10 feet), a typical depth of pipeline trenching, here considered the vertical APE for this project. If the paleogeomorphic surface atop glaciolacustrine clay is not encountered before this depth is achieved, one or two additional core segments may be collected for contextual data. Conversely, cores may be terminated at shallower depths if the lake bed paleogeomoprhic surface and underlying glaciolacustrine clay is encountered above this depth.

Mechanical Post–Hole Augering

Following extraction of the core, a 22.9 centimeter (9.0 inch) diameter post–hole auger adapted to the Giddings Hydraulic Soil Probe (HD trailer–mounted unit, or, if forested conditions prevent such access, ATV–mounted rig with a 15.2 centimeter (6.0 inch) diameter auger, will be used for testing for the presence or absence of buried cultural deposits at the core hole location. The volume of auger spoil generated per vertical foot is about 0.5 m^3, comparable to, or slightly greater than, what is produced while shovel testing with a typical shovel. Target depth of augering will be either 3.0 meters (10.0 foot) if glaciolacustrine deposits are not encountered, or the depth to such deposits if less than the target maximum depth, informed with initial in–field assessment of any preceding subsurface tests at any given location. Spoil will be segregated in 0.3 meter (1.0 foot) intervals as augering proceeds and treated as shovel test spoil. Each one–foot increment is inspected for artifacts as it is extracted from the auger hole, and then screened through a one–quarter–inch mesh screen onto a tarp, if possible. In the case of clayey sediment or exceedingly dry or firm B–horizon material, clods are broken apart and examined for artifacts, burnt soil, charcoal, and other evidence of pre–Euroamerican settlement age materials. Auger tailings, screened or otherwise, will be returned to the auger hole upon completion, with an admixture of medium bentonite chips, and the

auger will be used to compact fill in the hole during backfilling.

Coring, then augering, at the seven DTLs will continue by these processes until one or more of the following conditions are met:

- A depth of about 3.0 meters (10.0 feet) is achieved without encountering glaciolacustrine deposits;
- Sediment representing depositional environments unfavorable for significant prehistoric settlement or preservation of archaeological evidence is encountered;
- bedrock, impenetrable soil horizons, or impenetrable cobble or boulder gravel is encountered;
- Sediment known to pre–date North American cultural occupation is encountered;
- Saturated sand is encountered that either impedes deeper progress by flowing into the boring or auger hole, or refuses to remain within the core liner during extraction; or,
- Cultural deposits of pre–Euroamerican settlement age are encountered.

All seven DTLs will be subject to the following prior to fieldwork:

- Attainment of landowner consent for the work by the client;
- Staking of deep test locations, and arrangements made by the client for such staking, in immediate advance of state utility one-calls and fieldwork;
- North Dakota One-Call submissions, following staking, and reception of utility responses by GeoArc in advance of fieldwork;
- Recordation of a test location with an RTK-GNSS unit w/ 1-centimeter precision, or similar unit.
- GeoArc is notified of approval of this scope of work, along with a notice to proceed.

In the event that features of pre–Euroamerican settlement age or other cultural deposits (e.g., midden, borrow pit, etc.) are encountered, subsurface testing will be halted at that subsurface test location and the designated responsible party of the client will be notified. The location and context of any cultural finds will be documented to the extent possible without additional disturbance. Further activity at such a location, and the nature of the work, if any, will be determined in consultation with the responsible party.

POST-FIELD ANALYSIS AND REPORT OF RESULTS

Evaluation of the geology at the seven deep test locations will involve a synthesis of geomorphological, stratigraphic, sedimentological, and soil data, along with facies analysis, and incorporation of any archaeological data derived from subsurface tests and field observations. Cores will be split longitudinally along natural planes of fracture or cleavage, described and graphically logged. Standard NRCS soil and sedimentologic techniques and terminology will be used to record soil horizons, thickness, color, texture, redoximorphic features, soil structure, sediment structure, consistency, carbonates, inclusions and special features, and boundary characteristics (Schoeneberger et al., 2012; Vepraskas, 1994). Graphic sediment / soil logs illustrating sediment and soil trends with depth, will be constructed as part of the core description process. Interpretations will be informed by an evolution model of soil development that acknowledges the interaction of sedimentological and soil forming processes. For soil color,

standard Munsell soil colors will be used, but with distinctions at the half-chip level to emphasize subtle vertical trends in darker soil colors.

Stratigraphic and facies analyses of cores will be conducted. Figures of graphic sediment / soil logs will be prepared to illustrate detailed stratigraphy and the stratigraphic context of any buried cultural deposits. They will be prepared in a schematic core / trench profile that illustrates stratigraphy, facies, landform – sediment assemblage relationships, and, if uncovered, the context of any buried cultural deposits.

Results of the field effort will be provided in a Technical Report that meets all state and federal guidelines. The final report will include project background information; an overview of the physiographic and geologic setting; description of methodologies applied and methods used; results; discussion of results; and conclusions summarizing key results. All aspects of the project will be illustrated. The final report will be supplied in digital form.

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APPENDIX A

DEEP TEST LOCATION (DTL) GEOMORPHOLOGY AND PROJECTED SUBSURFACE TEST LOCATIONS

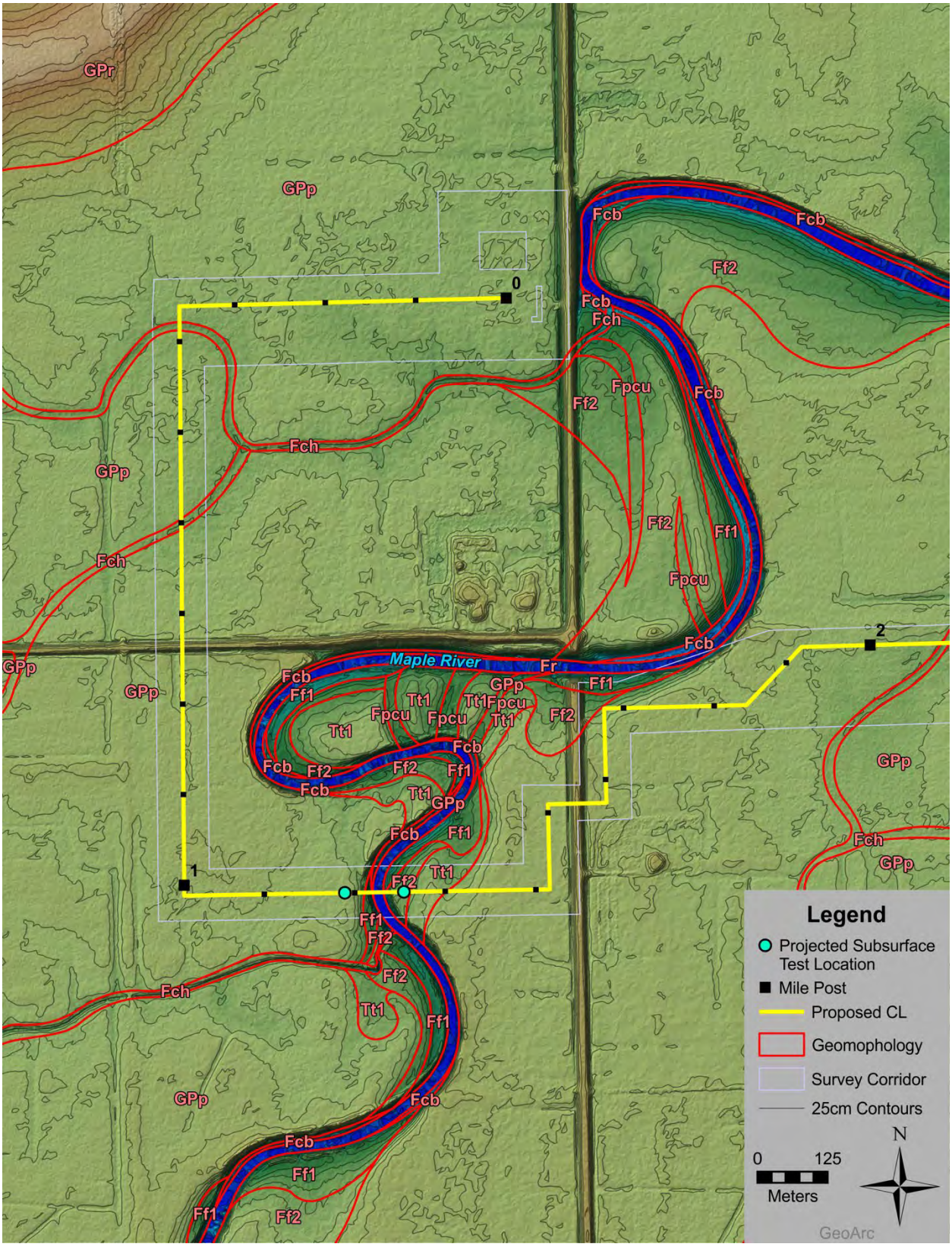

Figure 2. Geomorphology and projected subsurface test locations, pDTL-01.

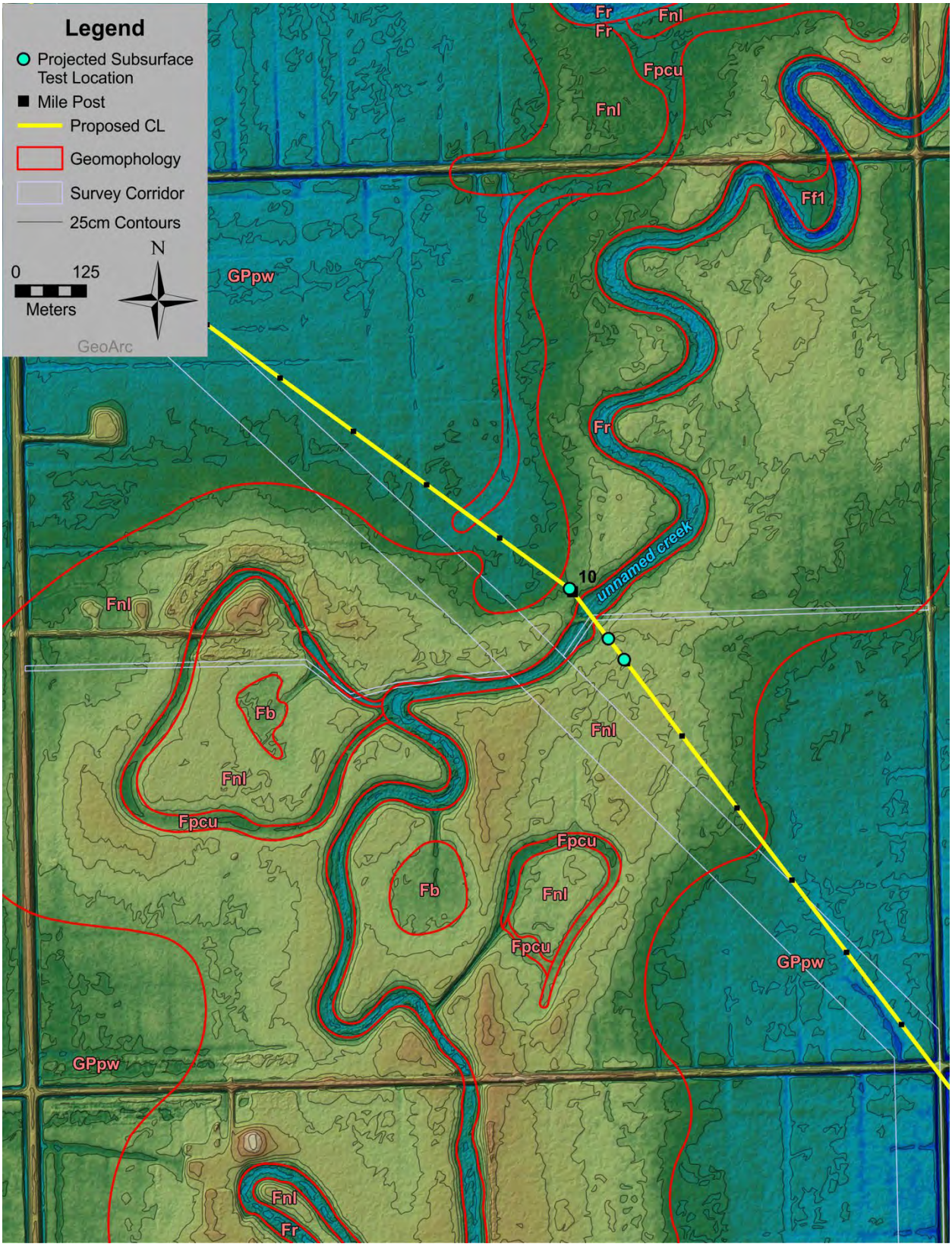

Figure 3. Geomorphology and projected subsurface test locations, pDTL-02.

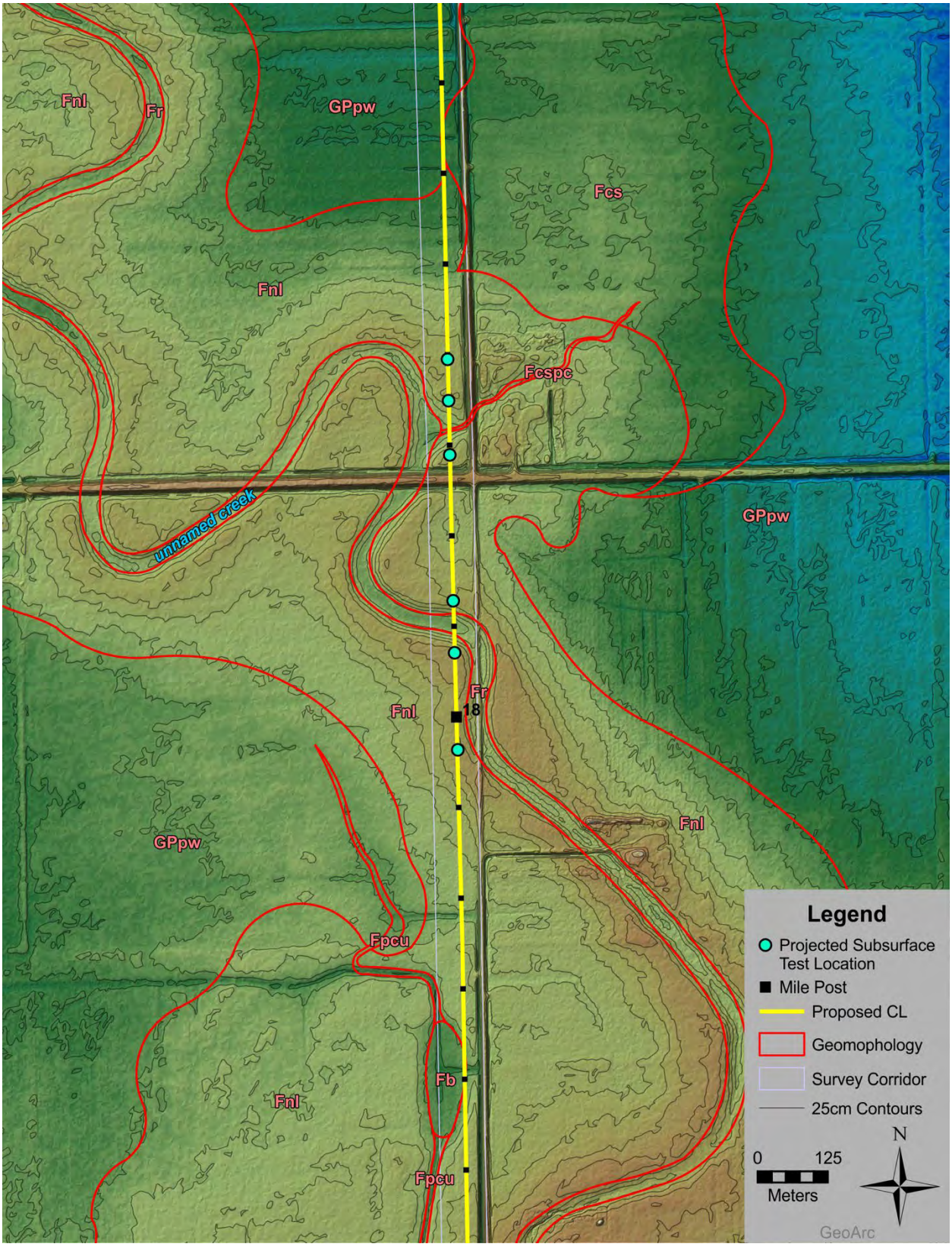

Figure 4. Geomorphology and projected subsurface test locations, pDTL-03.

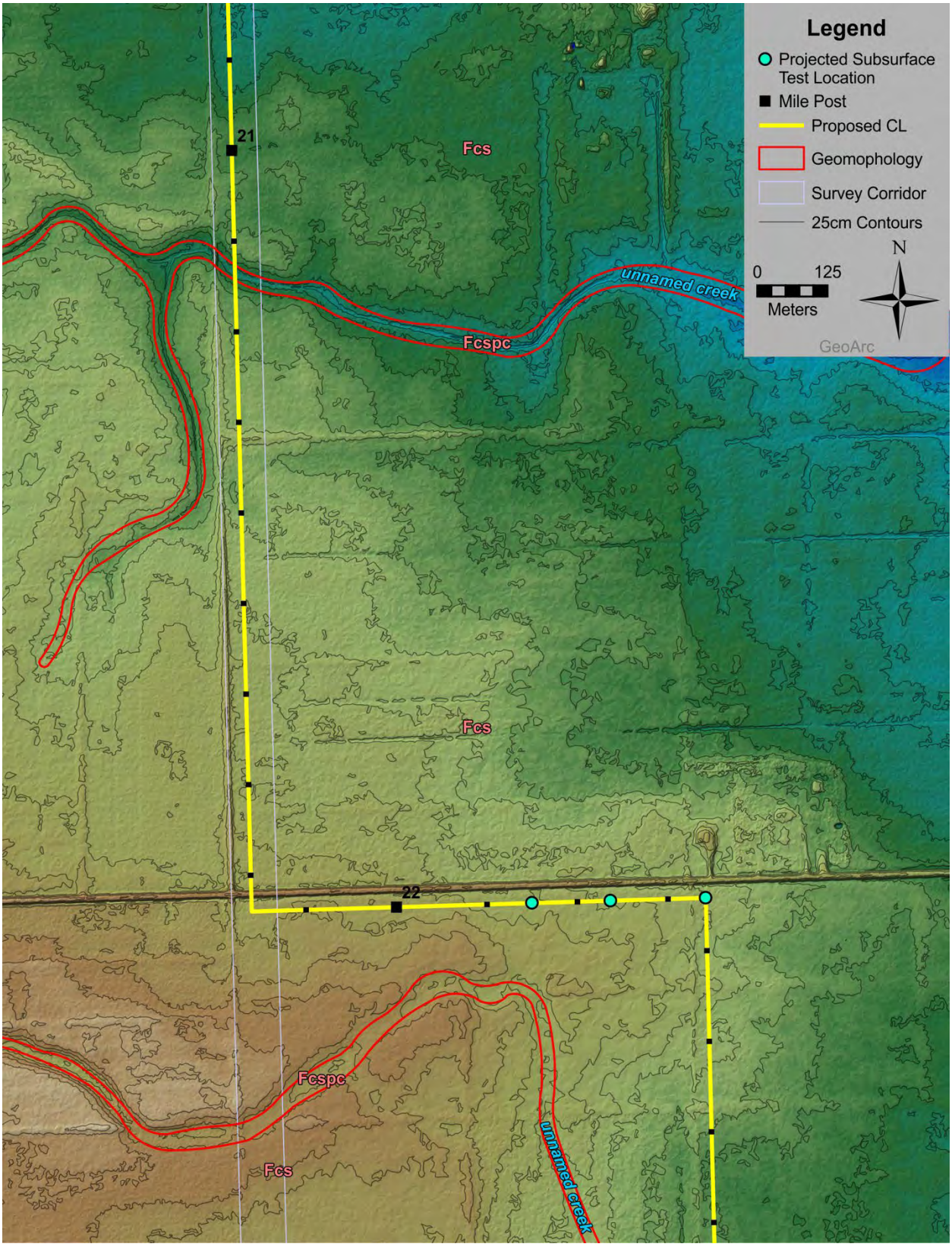

Figure 5. Geomorphology and projected subsurface test locations, pDTL-04.

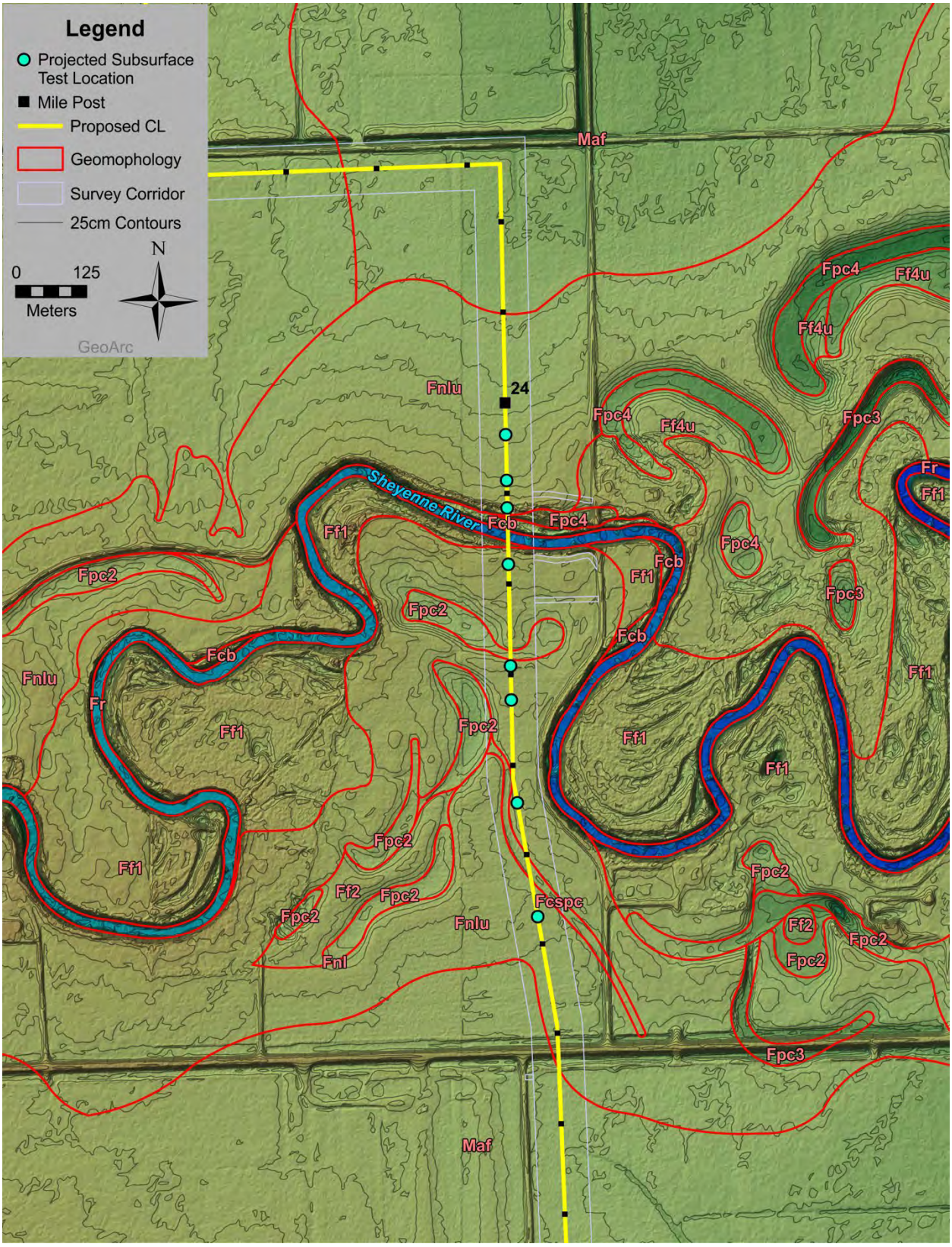

Figure 6. Geomorphology and projected subsurface test locations, pDTL-05.

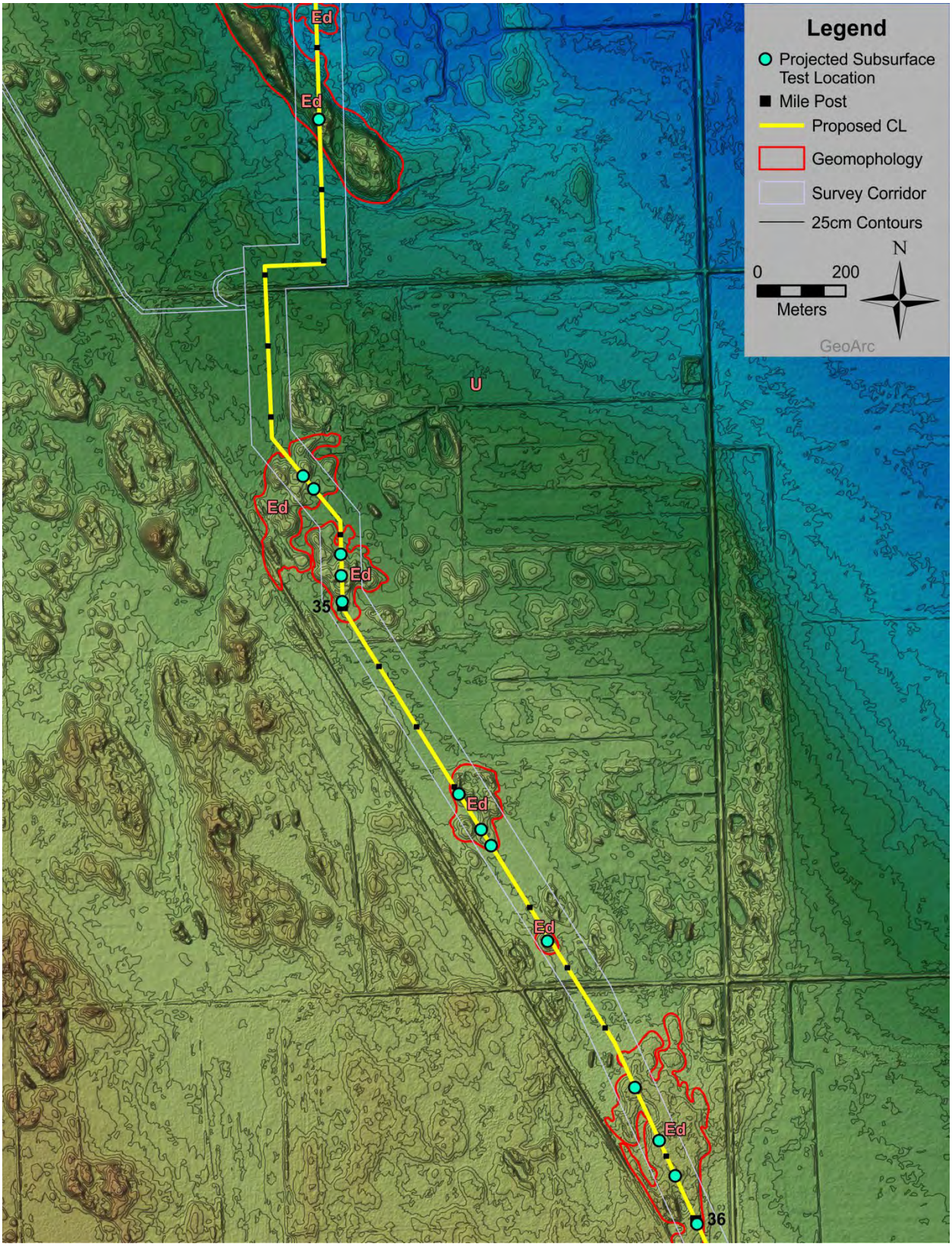

Figure 7. Geomorphology and projected subsurface test locations, pDTL-06.

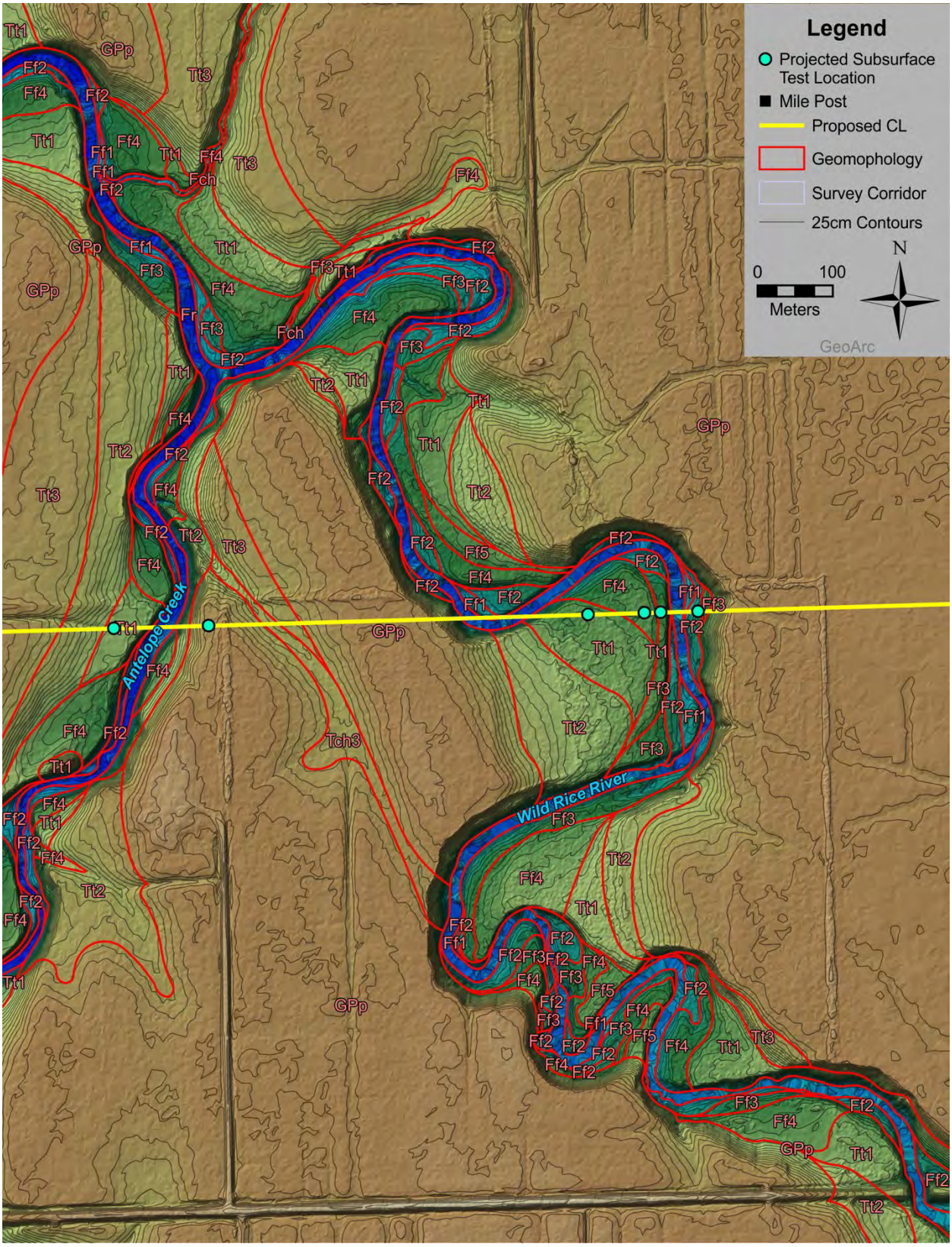

Figure 8. Geomorphology and projected subsurface test locations, pDTL-07.

PHASE 1 GEOMORPHOLOGICAL DESKTOP ASSESSMENT OF GEOLOGICAL POTENTIAL FOR BURIED PREHISTORIC CULTURAL DEPOSITS ALONG THE WAHPETON EXPANSION PIPELINE CORRIDOR, SOUTHEAST NORTH DAKOTA

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31 August 2022

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INTRODUCTION

Background

On behalf of their client WBI Energy Transmission, Inc. (WBI Energy), Environmental Resources Management (ERM) is performing a Phase 1 cultural resource survey of their Wahpeton Expansion Project (Project), a proposed pipeline corridor. WBI Energy proposes to construct a 97.3-km-long (60.5 mile-long) pipeline between an existing compressor station about 10.8 km (6.7 mi) west of the west side of Fargo, North Dakota, south-southeast to a delivery point about 5.7 km (3.5 mi) west of the Red River, the boundary between North Dakota and Minnesota (Figure 1). In terms of physiography, the Project crosses a section of the southwest end of the Glacial Lake Agassiz basin in Cass and Richland Counties, North Dakota (Figure 1).

North Dakota SHPO Guidelines Manual for Cultural Resource Inventory Projects (State of North Dakota, 2020) includes provisions for specialist studies as needed to conduct archaeological surveys in a thorough manner. ERM contracted GeoArc Research, Inc. (GeoArc) to conduct a Phase 1a desktop assessment of the geomorphology of the Project route specifically to assess the geological potential for deeply buried prehistoric cultural deposits along the Project. The purpose of the assessment is to evaluate near - surface geological contexts and, if present, identify for deep geoarchaeological testing specific locations that have a moderate to high geological potential for hosting buried intact cultural deposits of pre-Euroamerican settlement age that could be impacted by construction of the proposed Project.

General Physiography, Quaternary Geology and Geomorphology

The Project crosses very low relief landscapes within the southwestern part of the Glacial Lake Agassiz Plain (Figure 1). The Lake Agassiz Plain is a huge north-south oriented basin originally sculpted by the Des Moines Lobe of glacial ice that advanced southward through the project vicinity from the southwest margin of the Laurentide Ice Sheet. The Des Moines Lobe entered Iowa shortly before about 15,000 ^{14}Carbon years before present (^{14}C yrBP). At the maximum extent, the Des Moines Lobe reached central Iowa about 13,800 ^{14}C yrBP (Bettis et al., 1996). Multiple surging advances to progressively more northern positions into southwest Minnesota were each followed by stagnation and wastage (Kemmis, 1981; 1991). The Big Stone Moraine in southwest Minnesota was a local part of the continental drainage divide at the south end of the Lake Agassiz basin. At this position, the transition from glacial to glaciolacustrine environment occurred between about 12,140 and 11,800 ^{14}C yrBP, establishing the earliest manifestation of

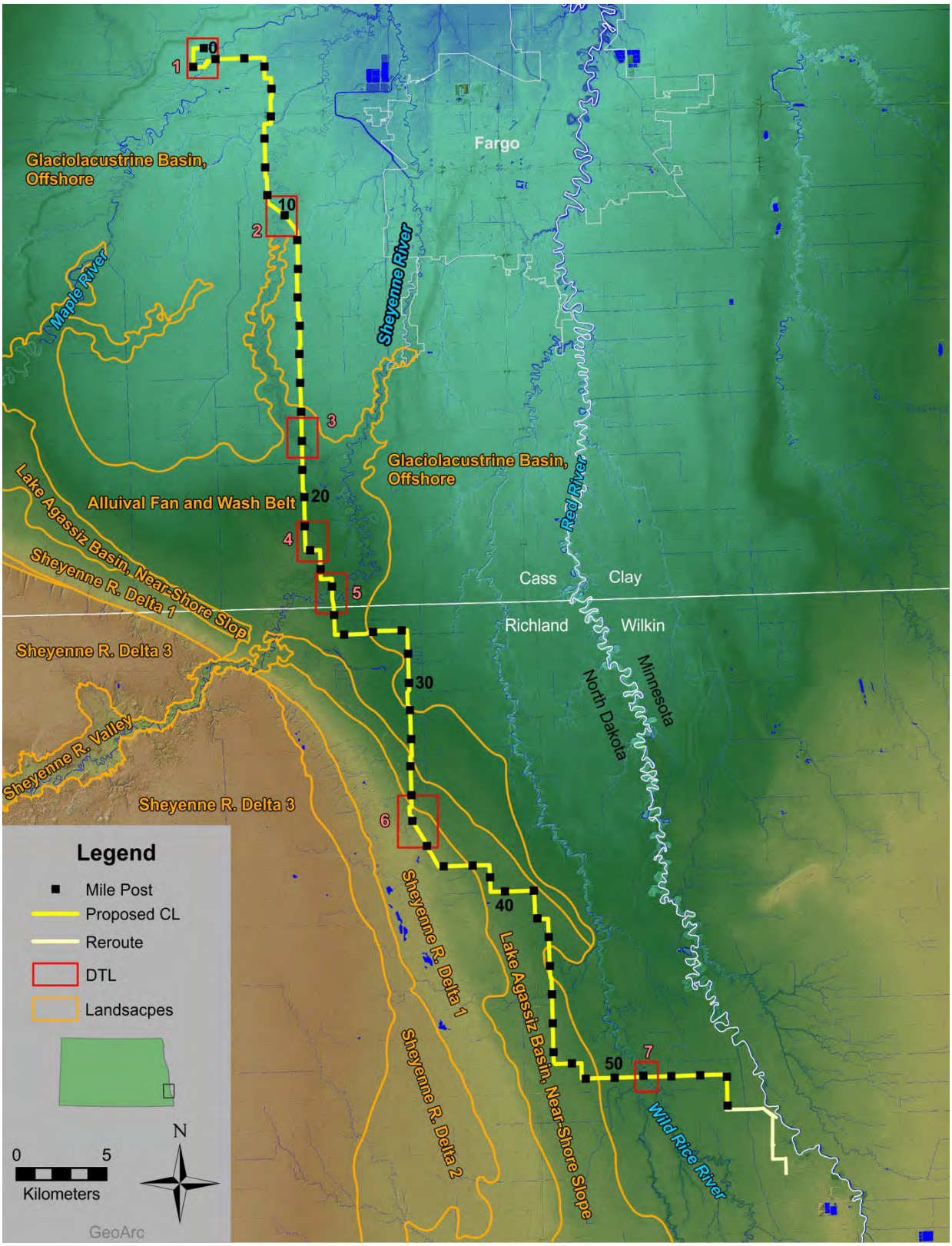

Figure 1. Project pipeline centerline, macro-geomorphology and potential deep test locations. (pDTLs) on the Lake Agassiz Glaciolacustrine Plain, on a color shaded relief digital elevation model, southeast North Dakota.

glacial Lake Agassiz in the basin (Clayton and Moran, 1982; Teller and Clayton, 1983; Lepper et al., 2007).

Morphology of the plain resulted from Glacial Lake Agassiz, an extremely large and deep pro-glacial lake that occupied the basin between about 11,800 and 9200 ^{14}C yrBP. Lake Agassiz was a massive inland lake during Paleoindian occupation of the continent. The latter age represents abandonment of the southern outlet (down the Minnesota River Valley) for lower outlets to the northeast for the final time (Fisher, 2005). Given the size of the basin, lacustrine depositional environments were dominated by nearshore shallow water and offshore deep-water conditions (Harris, 2007). More important to the archaeology of the basin were the more spatially discrete shoreline depositional environments marked by various forms of beach ridges, often with back-beach basins, and deltaic depositional environments where rivers and creeks entered the lake (Lepper et al, 2011).

During its existence, lake level fluctuated, sometimes rapidly and greatly, as it was controlled largely by opening and closing of northern and northeastern outlets as the ice front advanced or retreated and the region underwent isostatic rebound with retreat of glacial ice. Sill elevation at the southern outlet that at times routed lake water down the Minnesota River Valley was also a controlling factor during closure of lower more northerly outlets (Thorleifson, 1992; Fisher et al., 2008). The fluctuations in lake level through time resulted in spatial shifts in shorelines, depositional environments and depositional foci. Among the archaeologically significant results of this, in general to the basin, are multiple beach ridges across a range of elevations; very deeply buried alluvial deposits of the Poplar River Formation deposited during a period when Lake Agassiz was drained at least to the international border (Harris et al., 1995); river valley reaches with different ages; and, relict deltaic or fan deltaic distributary channels. Depositional environments with a high and / or moderate geological potential are represented within each of these groups of landforms.

During the prolonged very low stand of Lake Agassiz, higher parts of the basin were subaerially exposed. Rivers coursed down and incised the exposed lake plain. Alluvium of the Poplar River Formation deposited during the low stand is of appropriate age to host buried Paleoindian cultural deposits. Alluvial depositional environments at least in part would have been conducive to burial and preservation of any such cultural deposits. Subsequent transgression of the lake and lacustrine sedimentation has buried the Poplar River Formation, for the most part deeply below depths of concern in pipeline trenching.

Beach ridges and associated foreshore, slopes, and back-beach swales with or without intermittent drainageways occur in the shallow water facies part of the Lake Agassiz plain. In some landform positions, these environments have a high and/or moderate geological potential for hosting buried cultural deposits. Natural Resources Conservation Service (NRCS) mapping of the Hecla loamy fine sand with a recognized buried soil supports this potential. Although the beach ridge itself is often considered to fall on the low end of this spectrum, the Hecla series is sometimes mapped on the ridges as well as in back-beach basins. Entrainment and local redeposition of beach sand also can lead to burial of cultural deposits in this environment. Beach ridges were not recognized in the geomorphological assessment of the Project. However, it is possible that the margin of the Sheyenne River Delta (see below) could have been wave-modified.

During and following final drainage of Glacial Lake Agassiz, the Maple River and Sheyenne River deposited significant alluvial fans beyond the Sheyenne River Delta (Figure 1). Earliest increments of associated sediment assemblages may have accumulated in a fan-deltaic, or even deltaic environment. Paleomeander and active meander belts of main river courses, as well as relict potential distributary courses flanked by natural levees, deposited secondary fan lobes, often elongated, with some extending well beyond main fan limits. In addition to the fans and natural levees, crevasse splays and associated channels are common features. These alluvial deposits tend to have a greater silt content than the silty clay of the glaciolacustrine deposits. The contrast stands out on the main fan bodies, but the influence becomes less obvious with distance into the basin. Nevertheless, subtle changes in described soil textures can reflect the influence of post-lake alluvial contributions of silt into the upper parts of soil profiles in these more distal positions.

Farther into the basin, these and other valleys, such as that of the Wild Rice River, become progressively more deeply incised into the glaciolacustrine plain with distance from fan edges, although overall still relatively shallowly incised. Within these shallow valleys of both active and relict courses, creek and river channels are largely meandering; youngest channel belts, if present, are narrow and discontinuous; floodplains and terraces, if present, are subtly multi-story, with some indications (via NRCS mapped soil series) of one or more buried soils; and, natural levees diminish and give way to very thin overwash on the glaciolacustrine plain with distance from fan edges. Within adjacent sub-basins, mostly atrophied paleochannel courses are few.

Both ends of the Project cross the Lake Agassiz Basin where relief is extremely low in what was an offshore position (Figure 1). In between, as the Project corridor angles toward the southeast in Richland County, it just skirts the northeastern edge of a massive relict delta that resulted from potentially catastrophic deglacial discharge down the Sheyenne River Valley into Glacial Lake Agassiz. The highest, oldest and most expansive surface of the delta (Figure 1, Sheyenne R. Delta 3) is relatively level and of very low relief. The outer edge of the delta is characterized by a series of broad, shallow steps that descend gently to moderately sloping risers on the order of a couple of meters high and less toward the lake basin. Two of these, defined by some of the taller risers (Figure 1, Sheyenne R. Delta 2, 1), are mapped, but additional steps are present and unmapped. The Project corridor ascends and descends the lower of these surfaces between about MPs 34.2 and 37.8, respectively. They may have been modified by post-delta shoreline processes during certain higher stands or the final lowering of Lake Agassiz. The Project crosses this surface between about MP 34.5 and 36 where dunes occur discontinuously. The lowest surface above the glaciolacustrine basin, the near-shore slope, gently slopes to the east-northeast along the Project crossing.

Beyond the lower steps of the Sheyenne River Delta and near-shore slope of the basin in Richland County, to the southeast, the Project crosses at about MP 51 Antelope Creek immediately upvalley of its confluence with Wild Rice River (Figure 1). In this position, both meandering water courses and associated landforms are incised into the glaciolacustrine plain.

Geological Potential for Intact Buried Pre-Euroamerican Cultural Deposits

Given this landscape and its geological history and ages, buried, intact, prehistoric cultural deposits along the Project, if present, would likely be limited to alluvial sediment assemblages atop the glaciolacustrine plain that post-date final lake drainage. This would include within incised valley segments as well as atop the low relief plain itself. The sandy aeolian sediment assemblages that form scattered to few short continuous lines of low dunes on the eastern margin of the Sheyenne River Delta also are possible hosts to buried cultural deposits.

In the Holocene alluvial environment of the Sheyenne River, the greatest geological potential for intact burial and preservation of cultural deposits of pre-Euroamerican age is where the Project crosses natural levee, crevasse splay, alluvial fan, and floodplain and terrace overbank sediment assemblages, with or without terrace veneers. Within paleomeander belts, deposits of the point bar bar-top depositional environment also are of concern, whereas underlying point bar sand, if present, was deposited by traction currents in a subaqueous environment and are unlikely to contain intact buried cultural deposits. Similarly, the paleogeomorphic surface of the glaciolacustrine plain was buried beneath these sediment assemblages to a depth greater than the depth of shovel testing would be of concern, but not the underlying glaciolacustrine deposits.

Farther into the basin, where water courses such as the Maple River, Wild Rice River, and its tributary Antelope Creek are incised more deeply (yet still relatively shallowly) into the glaciolacustrine plain, there are sediment assemblages with similar geological potential. Water courses are more confined, and actively incising. As a result, floodplains and terraces with fine grain alluvial sediment assemblages usually occur at multiple levels, again with or without younger veneers. Natural levees, however, are very limited or absent and crevasse splays are absent.

METHODS

Desktop Assessment of Geological Potential

The desktop assessment of the Project for the geological potential for buried pre-Euroamerican contact cultural deposits consists of several steps at different levels of examination. Initially, a literature review was conducted for relevant information about the landscape setting, age and late Pleistocene and Holocene history of landscape evolution, that together have a foremost bearing on the geological potential.

GIS layers obtained and/or developed and utilized in the assessment are listed in Table 1. With these resources for reference, location of the Project corridor was systematically examined and evaluated for type and distribution of landscapes and landforms, likely underlying materials, and apparent soil-geomorphic relationships to the extent possible with the generalized NRCS soil mapping, ultimately to interpret likely depositional environments and their extents. Versions of color shaded relief digital elevation models (DEMs) served as proxies for interpreting glaciolacustrine basin landforms of intermediate to fine scale, and LiDAR-derived DEMs and 0.25 m contours provided more detail to interpret landforms at pDTL locations. All DEM background imagery utilize a vertical exaggeration of 3x. Notes were entered into a log and pegged to centerline milepost intervals (MPs) (Appendix A).

Table 1. Project GIS layers developed or acquired for and utilized in evaluation of geological potential.

Layer	Date	Comments
Cass and Richland County Soil Maps	various	Two shape files, from USDA NRCS SSURGO program.
Potential Deep Test Location (pDTL) ratio polygons	2021	Shape file developed for Project.
Detailed landform geomorphology maps for DTLs	2021	Shape file developed for Project; based on interpretations from LiDAR-derived DEMS and contour lines, and aerial imagery.
Landscape geomorphology	2021	Shape file developed for Project; based on interpretations from LiDAR-derived DEMS and contour lines, and NED 3 m relief & hydrology.
Project route and reroute center lines, mileposts, and archaeological survey corridors	2021, 2022	Three groups of shape files provided by ERM for original route and two reroutes. (Mileposts not provided for latest reroute.)
NED 30-cm contours	2021	Shape file developed for Project; based on NED 3 m relief.
LiDAR 25-cm contours	2021	Shape file developed for Project covering pDTLs; based on LiDAR point cloud data
North Dakota Counties 1:24,000 topographic maps	2021 various	ND DOT DRG mosaic covering the extent of the Project and adjacent areas; developed for the Project; based on USGS Digital Raster Graphics of 7.5' quadrangles.
LiDAR color shaded relief DEMs	2021	Five shaded relief color DEMs; based on LiDAR point cloud data.
Black and white aerial imagery mosaics		Five orthorectified and georeferenced DOQ mosaic image files developed from USGS NAPP black and white imagery.
Color shaded relief digital elevation model	2021	Image file developed for Project; based on National Elevation Dataset (NED) 1/3 arc-second and 1/9 arc-second.
Color shaded relief digital elevation model	2021	Image file developed for Project; based on SRTM 60 m relief.
Two color shaded relief digital elevation models	2021	Two image files developed for Project; based on 3DEP10m relief and hydrology
Color aerial imagery	2018	USDA NAIP color imagery.

As part of the evaluation, official NRCS soil information was entered into a spreadsheet for easy reference, profile comparison and likely genetic grouping. Their spatial distributions were examined relative to the different landforms of the glaciolacustrine plain in the GIS along the Project and beyond. Mapped soils were also examined particularly for any noted buried soils and other clues pertaining to landscape evolution and depositional environments. In general, NRCS descriptions of soil series can be important for textural information, and thus potentially provide some general clues to underlying landform sediment assemblages, as well as the thinking at the time of original mapping about the soil parent material origin. They are, however, not a reliable basis for identifying or describing the project area landforms, stratigraphy or detailed sedimentology. The original NRCS soil mapping was conducted for reasons and at scales far different from the specific and detailed needs of archaeologists and geoarchaeologists. Aerial photo map bases utilized for mapping at the time were rarely orthorectified or georeferenced, so positioning of intended boundaries must be considered generalized at best. For example, in pDTLs for this project, NRCS mapping of river channels are consistently shifted to the east of the actual river channel location. The aforementioned differences need to be respected; nothing beyond NRCS soil series texture, other lab data, and horizonation at the series type location should be taken at face value for archaeological or geoarchaeological assessment.

RESULTS

Lake Agassiz Glaciolacustrine Plain

Except for alluvial courses, narrow valleys, basin margin alluvial fans and compression ridges, the glaciolacustrine plain in the Project area is nearly featureless along the Project route (Figure 1; Appendix A). The plain does have some local basins in places that exhibit relief on the order of up to 20-30 centimeters. Alluvial fan and crevasse splay limits locally in part define limits of such basins. Sediment assemblages underlying the general plain consist of glaciolacustrine silty clay and silty clay loam.

Mapped soils on the plain where unmodified by alluvial activity are described as having formed in silty clay and silty clay loam glaciolacustrine sediments. Fargo silty clay is the most commonly mapped soil series, but Hegne, Kindred, Bearden and Lindaas are also mapped on the plain (Appendix A). Isolated intermittent water courses and atrophied low-order paleochannels are sometimes mapped with the Dovray silty clay. In subtle depressional areas, A horizons of some of these series can be over-thickened by up to about 30%, or on the order of about seven centimeters. Compression ridges often are mapped with the Beardon silty clay loam.

This glaciolacustrine sediment body represents a depositional environment highly favorable for the burial and preservation of any discarded artifacts. However, while these deposits have the potential to host significant artifacts, such as canoes, these would be extremely rare. Historically, such finds have been encountered only through happenstance. Thus, no pDTLs covering the glaciolacustrine depositional environment were defined for more detailed assessment.

Alluvial Valleys, Related Overwash and Soil Geomorphology

Following final drainage of Lake Agassiz, rivers and creeks that fed into the lake now make their way across the glaciolacustrine plain, with waters ultimately joining the Red River to flow northward into Canada. These water courses locally include the Maple, Sheyenne and Wild Rice Rivers, and Antelope Creek. The proposed Project crosses these streams, some relict courses of these streams, as well a few unnamed creeks (Figure 1).

Alluvial landforms recorded in detailed geomorphic mapping of these streams and related features where the Project crosses them reflect that a range of alluvial depositional environments are represented (Table 2). Among them, natural levee, crevasse splay, alluvial fan, floodplain and terrace (and any associated veneers) are of particular interest because they have components of their sediment assemblages that were deposited by settlement from suspension, overland sheetflood and other low-energy depositional processes conducive to burial and preservation of cultural deposits.

NRCS-mapped soils only crudely reflect the differentiation of alluvial landforms of water courses on, or very slightly cut into, the plain, from the glaciolacustrine basin beyond, whereas somewhat more deeply incised valleys make such distinctions more obvious. Overly and Bearden series, with silty clay loam and silt loam textures that reflect a greater silt content than the underlying glaciolacustrine sediment, are often associated with proximal and medial natural levee positions and thin overwash onto the plain. The Wahpeton silty clay to silty clay loam is mapped on floodplains and terraces, with silt content tending to be higher in entrenched and less basinward positions of streams. This soil is significant in that it can have at least two buried soils within the upper 1.5 m (5.0 ft). In some cases, the lower, or lone, buried soil may represent the original glaciolacustrine plane.

Soil textures have a greater silt content on the Sheyenne River alluvial fan, and the channel belts that cross it. Along the relict paleomeander belt, Overly-Bearden silt loams are generally mapped on proximal to medial natural levees on the medial and distal fan, and along crevasse splay paleochannels on the medial fan. Distal natural levee flanks, as well as some crevasse splay lobes, with silty clay loam textures, are mapped with Kindred-Bearden and Fargo series. Other, presumably thinner, crevasse splay lobes are mapped with the Fargo-Hegne, or Fargo, silty clay series.

On the proximal alluvial fan, where there is semblance of a valley inset into the fan, proximal to medial natural levees are mapped with the LaDelle silty clay loam, and more discontinuously in proximal positions, Fairdale silt loam series. In more distal positions, thin crevasse splays and the fan surface are mapped with Fargo silty clay loam and silty clay series. The LaDelle series has a buried soil at its type location at a depth of 0.9-1.1 m (2.9-3.6 ft). The Fairdale series also has a buried soil, but the depth at the series type location is deeper, at 1.2-1.7 m (4.0-5.6 ft), than the buried soil found within the LaDelle series. Incidentally, depths of buried soils can vary greatly from those at the type location, and it is likely that at least some of the Fairdale mapping is in sediment of post-Euroamerican settlement age. In these cases, the buried soil likely is the pre-Euroamerican settlement soil. Within the Sheyenne River valley on the proximal fan, mapped soils of the floodplain that do not discriminate the array of landforms present are mostly the LaDelle and Fairdale series.

Table 2. Summary of geomorphology map units in the vicinity of subsurface testing.

Landscapes	Landform Label [1]	Landform Description
Floodplain		
	Fr	river or creek channel
	Fb	flood basin
	Fcb	channel belt
	Fch	small channel or paleochannel; often inherited
	Fnl	natural levee
	Fnlu	Natural levee, undifferentiated
	Fcs	crevasse splay
	Fcspc	crevasse splay paleochannel
	Ff1	floodplain, youngest
	Ff2	floodplain, next-to-youngest
	Ff3	floodplain, second next-to-youngest
	Ff4	floodplain, third next-to-youngest
	Ff4u	Floodplain, third next-to-youngest undiff.
	Ff5	floodplain, forth next-to-youngest
	Fpc2	paleochannel, next-to-youngest
	Fpc3	paleochannel, second next-to-youngest
	Fpc4	paleochannel, third next-to-youngest
	Fpcu	paleochannel, undifferentiated
Terrace		
	Tt1	terrace, youngest
	Tt2	terrace, next-to-youngest
	Tt3	terrace, second next-to-youngest
Valley Margin		
	Maf	alluvial or fluvial fan (Sheyenne R.)
Glaciolacustrine Plain		
	GPp	plain
	GPpw	plain, with overwash veneer
	GPr	compression ridge
Aeolian		
	Ed	aeolian dune

1. Capital letter refers to landscape. lower case letters following a capital letter refer to landforms. Numbers and following lower case letter, if present, reflect relative age relationships internal to each DTL only. Numbers increase and letters progress with increasing relative age.

On the proximal alluvial fan, where there is semblance of a valley inset into the fan, proximal to medial natural levees are mapped with the LaDelle silty clay loam, and more discontinuously in proximal positions, Fairdale silt loam series. In more distal positions, thin crevasse splays and the fan surface are mapped with Fargo silty clay loam and silty clay series. The LaDelle series has a buried soil at its type location at a depth of 0.9-1.1 m (2.9-3.6 ft). The Fairdale series also has a buried soil, but the depth at the series type location is deeper, at 1.2-1.7 m (4.0-5.6 ft), than the buried soil found within the LaDelle series. Incidentally, depths of buried soils can vary greatly from those at the type location, and it is likely that at least some of the Fairdale mapping is in sediment of post-Euroamerican settlement age. In these cases, the buried soil likely is the pre-Euroamerican settlement soil. Within the Sheyenne River valley on the proximal fan, mapped soils

of the floodplain that do not discriminate the array of landforms present are mostly the LaDelle and Fairdale series.

To the southeast, well beyond the Sheyenne River alluvial fan, where the Project crosses valleys incised into the glaciofluvial plain, rivers and creeks are meandering, with multiple (subtle) floodplain and terraces levels. The highest terraces are mapped with the same soil series as the surrounding offshore glaciolacustrine plain, suggesting they are terraces cut into the glaciolacustrine sediments with little, if any alluvial mantle. Inset into the higher terrace levels, however, floodplain levels and lower terrace levels are mapped with the Fairdale silt loam and LaDelle silty clay loam series. Buried soils are likely present at highly variable depths.

Alluvial Depositional Environment Potential Deep Test Locations

Seven potential deep test locations (pDTLs) were identified where the Project crosses an area interpreted to have a moderate to high geological potential for hosting buried cultural deposits, and thus targeted for further consideration (Figure 1). pDTLs are numbered from north to south-southeast. Six pDTLs have alluvial landform sediment assemblages, associated with one of the rivers or creeks that post-date final drainage of Lake Agassiz, that are likely to have untested components deeper than the depth of shovel testing. The water course crossings, however, vary in character depending on position within the glaciolacustrine basin landscape. The seventh pDTL is a location with aeolian dunes. The pDTL figures that follow have DEM bases, upon which geomorphic mapping was conducted, that have a vertical exaggeration of 3x. For the most part then, some of the mapped distinctions as viewed on the landscape are very subtle.

The northwestern-most pDTL-01 is located over the Maple River where it is slightly incised into an offshore part of the glaciolacustrine plain (Figure 1). It is situated about 30.0 km (18.6 mi) as the crow flies northeast of the head of its related alluvial fan at the northeastern limit of the main level (3) of the Sheyenne River Delta. Furthermore, ERM documented substantial archaeological deposits at prehistoric site 32CS4676 less than 225 meters to the north from pDTL-01 within a bend of the Maple River.

pDTL-02 and -03 are located over a paleomeander belt of the Sheyenne River which the Project crosses in two locations (Figure 1). The paleomeander belt most likely represents a former course of the Sheyenne River. Alternatively, it could represent a substantial relict distributary of the Sheyenne River alluvial fan. An unnamed creek that originates within the upper reach of the meandering paleochannel currently occupies this former course. pDTL-2 and -03 are about 22.9 km (14.2 mi) and 10.5 km (6.5 mi), respectively, north of where the Sheyenne River fan abuts the near-shore slope of the Lake Agassiz basin margin. This places pDTL-02 well beyond the alluvial fan limits, and pDTL-03 on the distal fan position.

To the south, pDTL-04 covers what is mapped as the eastern flank of a massive relict crevasse splay of the Sheyenne River in the medial alluvial fan position (Figure 1). It is located about 5.2 km (3.2 mi) north of the Sheyenne River Delta front. pDTL-05 overlies the active Sheyenne River meander belt where parts of at least four related paleomeander belts flank the active meander belt, which through time visually exhibit first decreases, then increases, in meander wavelength and amplitude. This location on the proximal fan is about 4.0 km (2.5 mi) northeast of the near-shore slope.

pDTL-06 covers parts of the lowest level of the Sheyenne River Delta (1) and a small part of the near-shore slope of the Lake Agassiz basin where there is field of discontinuous aeolian dunes (Figure 1).

pDTL-07 lies about 32 km (19.9 mi) to the south-southeast of pDTL-05, and only about 2.7 km (1.7 mi) east of the Lake Agassiz Basin near-shore slope margin (Figure 1). Here, the Project crosses both the Wild Rice River and its tributary, Antelope Creek, just above their confluence. In this location, the stream valleys are incised into the offshore glaciolacustrine plain landscape.

pDTL-01

In this position the, the Maple River (Fr) exhibits a meandering pattern where it flows within a narrow channel belt (Fcb) inset only slightly into the glaciolacustrine plain (GPp) (Figure 2). It flows between two semi-parallel compression ridges (GPr), each captured in opposing corners of the pDTL. Relatively small, discontinuous remnants of two floodplain levels (Ff1, Ff2) are preserved within meander bends of the river. The lowest (Ff1) floodplain level is inset into the glaciofluvial plain on the order of about 1.0 m (3.3 ft). The next higher alluvial surface is mapped as a low terrace (Tt1); discontinuous remnants typically larger than the floodplain remnants are preserved on the insides of meander arcs and abut the glaciofluvial plain where they are inset on the order of 0.5 m (1.6 ft).

The Project crosses the Maple River heading eastward where the river is nearly against the western valley wall (Figure 2). A sliver of the lowest floodplain (Ff1) lies between the river cutbank and the western valley wall. Soil mapping suggests the possibility of a thin (< 0.5 m [1.6 ft]) veneer of overwash on the plain to the immediate west only. East of the river, the Project ascends to cross a high floodplain (Ff2) remnant. Based on NRCS soil mapping of the Wahpeton silty clay loam soil series, there could be a buried soil in the associated Ff2 sediment assemblage. The Project then ascends slightly more to a terrace (Tt1) remnant that apparently has been cut into the glaciolacustrine clay before heading onto the glaciolacustrine plain.

pDTL-02

The paleomeander channel (Fr) of the Sheyenne River at this location (Figure 3), inherited by an unnamed creek, exhibits a large sinuosity with cut-off paleomeanders (Fpcu), all flanked with natural levees (Fnl) that rise on the order of 1.3-1.5 m (4.3-4.9 ft) above the glaciolacustrine plain (GPpw). Several localized minor flood basins (Fb) occur within the natural levees as a result of the relationships of the main channel to older cutoff meander levees. Only the main paleomeander channel (Fr) is inset into the plain, and then only on the order of 0.3 m (1.0 ft). There is only one small segment of floodplain (Ff1) on the inside of one meander (Figure 3); it is likely related to activity of the inheritor stream. Essentially the glaciolacustrine plain functioned as the main floodplain when the Sheyenne River occupied the channel.

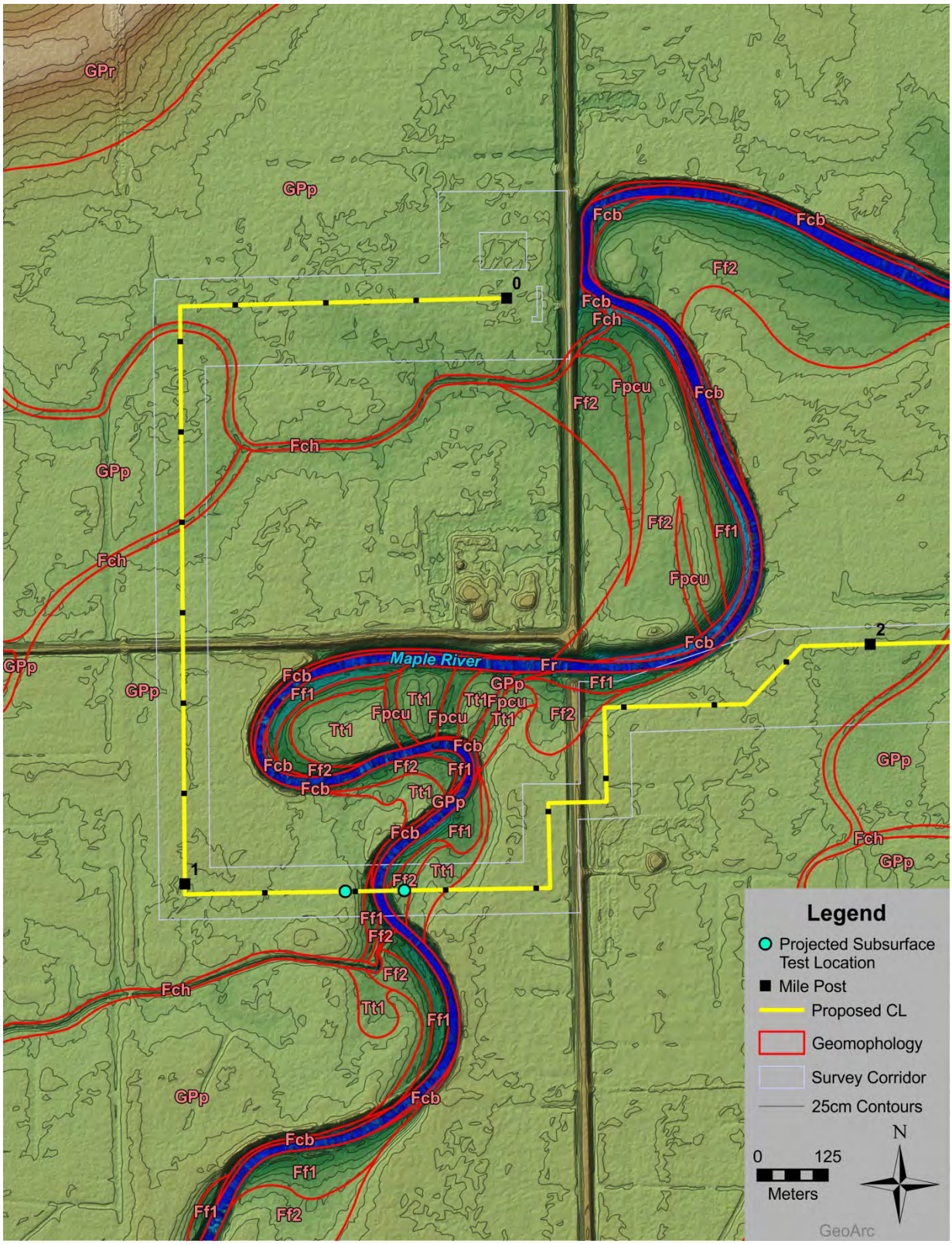

Figure 2. Project pipeline centerline, work corridor and geomorphology at the Maple River Valley crossing (pDTL-01), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

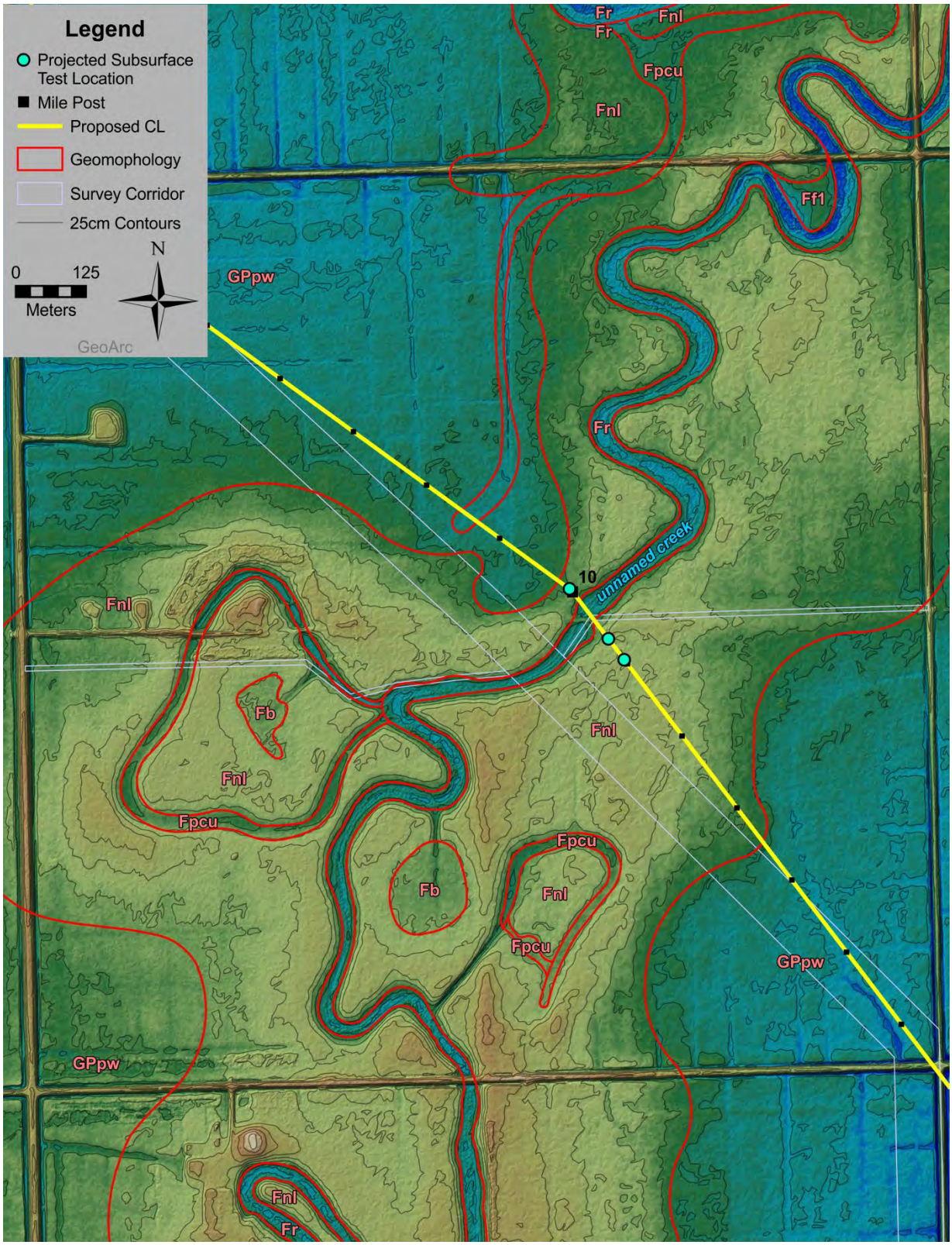

Figure 3. Project pipeline centerline, work corridor and geomorphology at Sheyenne River paleochannel belt crossing 1 (pDTL-02), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

The Project crosses the paleomeander channel (Fr) on the NW-SE diagonal where the northwest flanking levee is relatively narrow and less than 0.9 m (3.0 ft) thick. The southeast flanking levee is considerably broader, but with only a slightly greater thickness range (1.2 m [3.9 ft]). Its breadth is comparatively augmented because an older course of the Sheyenne River deposited the southeastern-most two-thirds or more of the levee at this location. Overly – Bearden silt loams are mapped on the thicker and younger parts of the natural levee, whereas the Fargo series is mapped where it has a silty clay loam texture in the more distal position where presumably it has a somewhat older base.

pDTL-03

As at the previous pDTL-02, pDTL-03 has a similar paleomeander channel (Fr) with a set of flanking natural levees (Fnl) that are deposited on the glaciolacustrine plain (GPpw) (Figure 4). Levees rise above the plain on the order of up to 1.5 m (4.9 ft). A floodplain is lacking between the levees as the plain must have served that function. East of the channel, a crevasse splay paleochannel channel (Fcspc) leads eastward through the natural levee (Fnl) to a crevasse splay (Fcs), also deposited on the plain. In the southwestern part of pDTL-03, there is a low, broad natural levee west of the natural levee adjacent to the channel. An atrophied paleochannel (Fpcu), with a single elongated smaller basin (Fb), likely part of the paleochannel, lies between the two natural levees.

The Project crosses this pDTL north to south, running along a considerable length of first the eastern levee where it is relatively thick, then along the western natural levee where it is thick, then thins considerable, and finally thickens again toward the southern limit of the pDTL (Figure 4). Overly-Bearden soils are mapped on the main part of the levees, with the Fargo series, both silty clay loam and silty clay, on more distal, thinner parts of the levee.

pDTL-04

In the medial alluvial fan position, pDTL-04 encompasses two narrow relict paleochannels (Figure 5). The southern, more prominent, of the two is interpreted as a massive crevasse splay (Fcs) and associated paleochannel(s) (Fcspc). Given their setting on the fan, however, it could represent a failed attempt at Sheyenne River avulsion. In either case, the paleochannel (Fcspc) lies atop a linear rise that it deposited, with slopes descending at first away from the paleochannel, and then with distance from the source, in the direction of paleochannel orientation. Minimally, the rise upon which the paleochannel runs is 2.5 m (8.2 ft) above the glaciolacustrine plain. Some of this thickness at depth may represent the underlying alluvial fan sediment assemblage. The northern paleochannel is probably older, and seemingly coalesces two crevasse splay paleochannels into one. Beyond the DTL to the east, this paleochannel joined a Sheyenne River paleochannel east of the pDTL that flowed northward.

The Project enters pDTL-04 from the north, crosses the northern paleochannel (Fcspc), angles due eastward far enough to avoid the southern paleochannel (Fcspc), then turns to continue southward. In so doing, it avoids some areas of the thickest combined crevasse splay and underlying alluvial fan sediment assemblages, although throughout pDTL-04, the sediment cover atop the glaciolacustrine plain is likely thicker than the depth of shovel testing. At its thickest point where crossed, located at the eastern end of the west-east leg, the crevasse splay (Fcs, plus alluvial fan),

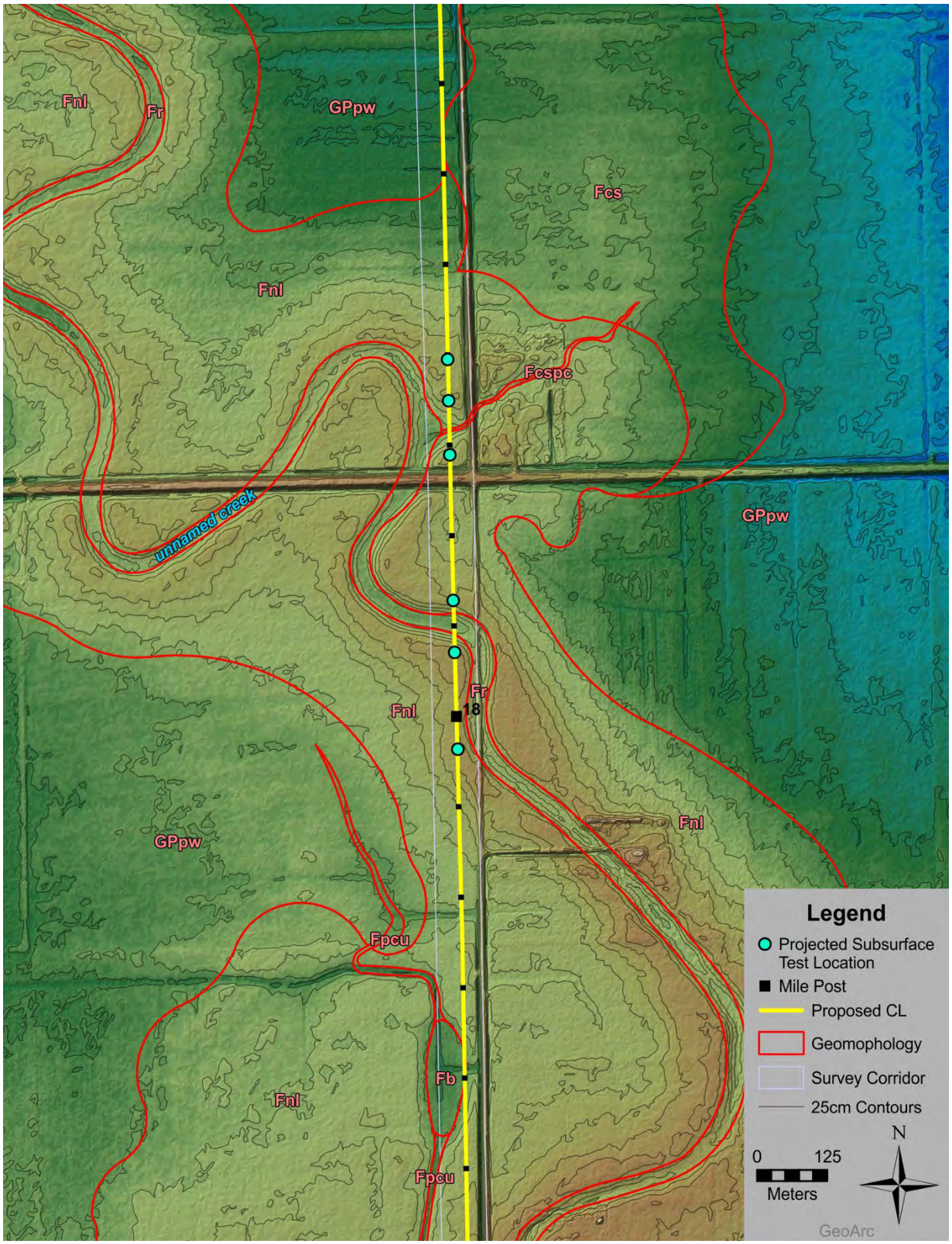

Figure 4. Project pipeline centerline, work corridor and geomorphology at Sheyenne River paleochannel belt crossing 2 (pDTL-03), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

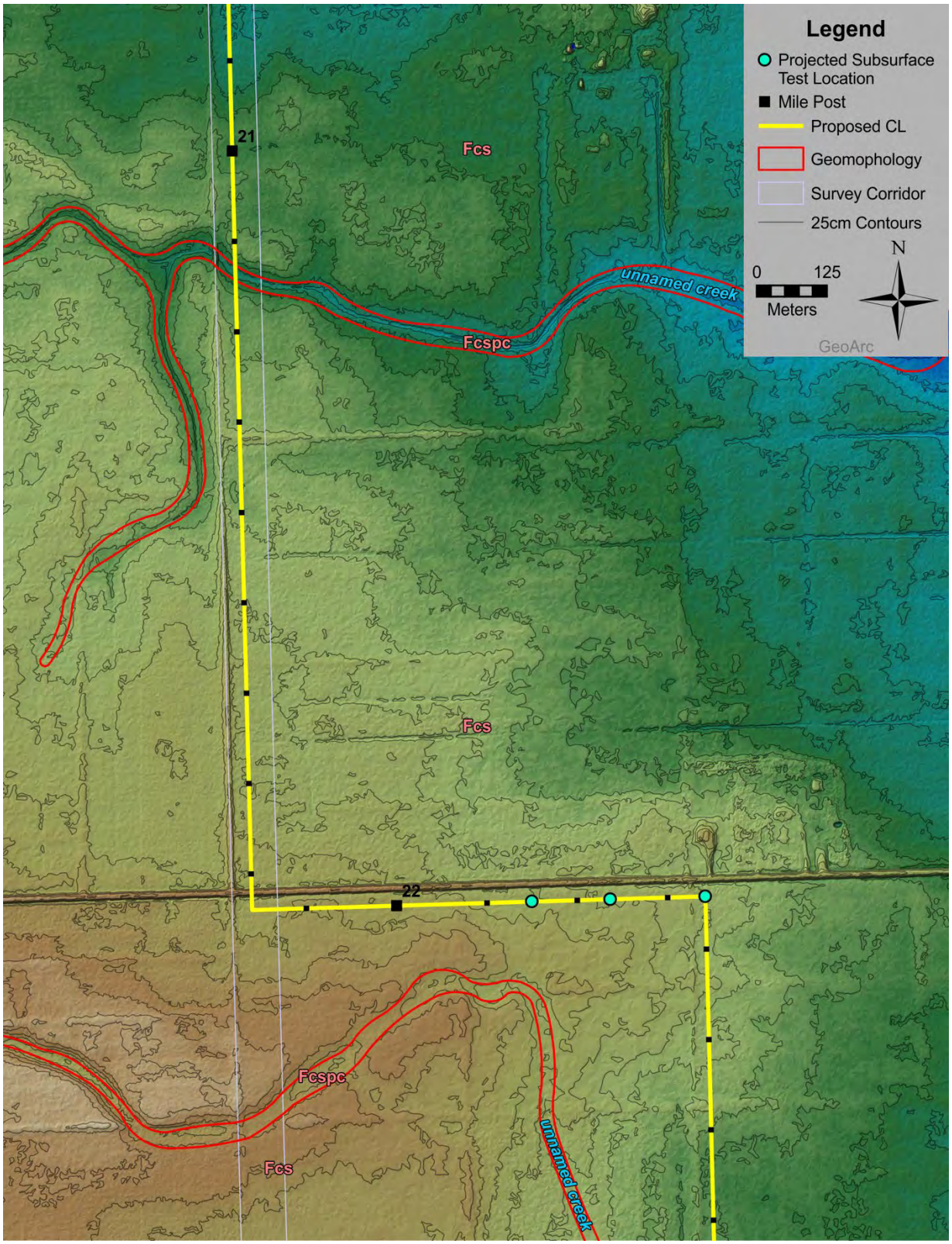

Figure 5. Project pipeline centerline, work corridor and geomorphology at crossings of crevasse splays of Sheyenne River paleochannel (pDTL-04), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

is minimally at least 1.5-1.8 m (4.9-5.9 ft) thick. In this location, mapped soils are the Overly-Bearden silt loams.

pDTL-05

pDTL-05 is where the Project crosses the modern Sheyenne River (Fr) and associated meander belts (Figure 6). In this proximal fan position, the channel is cut into its underlying fan (Maf) about 3.2 m (10.5 ft), but the nearby alluvial fan surface is about 2.2 m (7.2 ft) below the crest of a very low natural levee (Fnlu). Furthermore, there is less than about 0.7 m (2.3 ft) difference between the youngest floodplain level (Ff1) and the crests of the natural levee (Fnlu) immediately adjacent to the meander belts. Also, there is less than about 0.7 m (2.3 ft) difference among the various floodplain segments (Ff1, Ff2, Ff4). Effectively, this has been an aggrading system. The most recent and active channel belt (Fcb) consists of few very narrow segments within pDTL-05, but the youngest floodplain (Ff1) exhibits a youthful morphology with hints of underlying point bar ridge and swale morphology. Cutoff and partially infilled paleomeanders of at least three different paleochannel systems (Fpc2, Fpc3 and Fpc4) are common.

The Project enters pDTL-05 from the north to cross part of the crevasse splay upon which it left pDTL-04 to the north (Figure 6). It jogs to the east, then to the south where it crosses the Sheyenne River alluvial fan (Maf) and ascends the low natural levee north of the paleomeander belts. After crossing the active channel, the Project crosses various segments of low natural levees associated with a number of the abandoned paleochannel segments within the paleomeander belts. It then crosses a narrow crevasse splay paleochannel (with low natural levees) before continuing southward across the Sheyenne River fan.

pDTL-07

On the offshore glaciolacustrine plain (GPp) at pDTL-07, the Wild Rice River and its tributary, Antelope Creek, meander within valleys that incise the plain on the order of 4.0 m (13.1 ft), with channels (Fr) inset another 1.0 m (3.3 ft) or so (Figure 7). The Wild Rice River exhibits a moderately large sinuosity while Antelope Creek has a relatively moderate sinuosity. Because of the meandering, incised valley widths below terrace levels vary greatly. Five floodplain levels are mapped, and the youngest three occur in both valleys, but the oldest two are only mapped within the Wild Rice River valley. The lowest floodplain remnants (Ff1), which might also be considered as part of a narrow channel belt, rise on the order of 0.5-0.8 m (1.6-2.6 ft) above the channels. They are few in number and this low floodplain is highly discontinuous. Far more numerous but still discontinuous, remnants of next older low floodplain (Ff2) primarily occur on the insides of meanders, but there are a small number that occur on the outsides of meander bends as well. While still discontinuous, they are present within far more meander bends than not. They rise about 1.8 m (5.9 ft) above the creek channel. Remnants of the intermediate floodplain (Ff3) are limited to the Wild Rice River valley where they occur almost exclusively within the meander bends, thus discontinuously, usually as a relatively narrow bench cut into the next higher floodplain level. They rise on the order of 2.8 m (9.2 ft) above the channel. Relatively major areas within the meander bends are occupied with the high floodplain (Ff4). Remnants of this surface slope generally toward the water course. In general, they rise about 3.3 m (10.8 ft) and more above the channel. In the central to southern half of the Wild Rice River Valley only, there are three remnants of a still slightly higher floodplain (Ff5). These also slope very gently toward the creek.

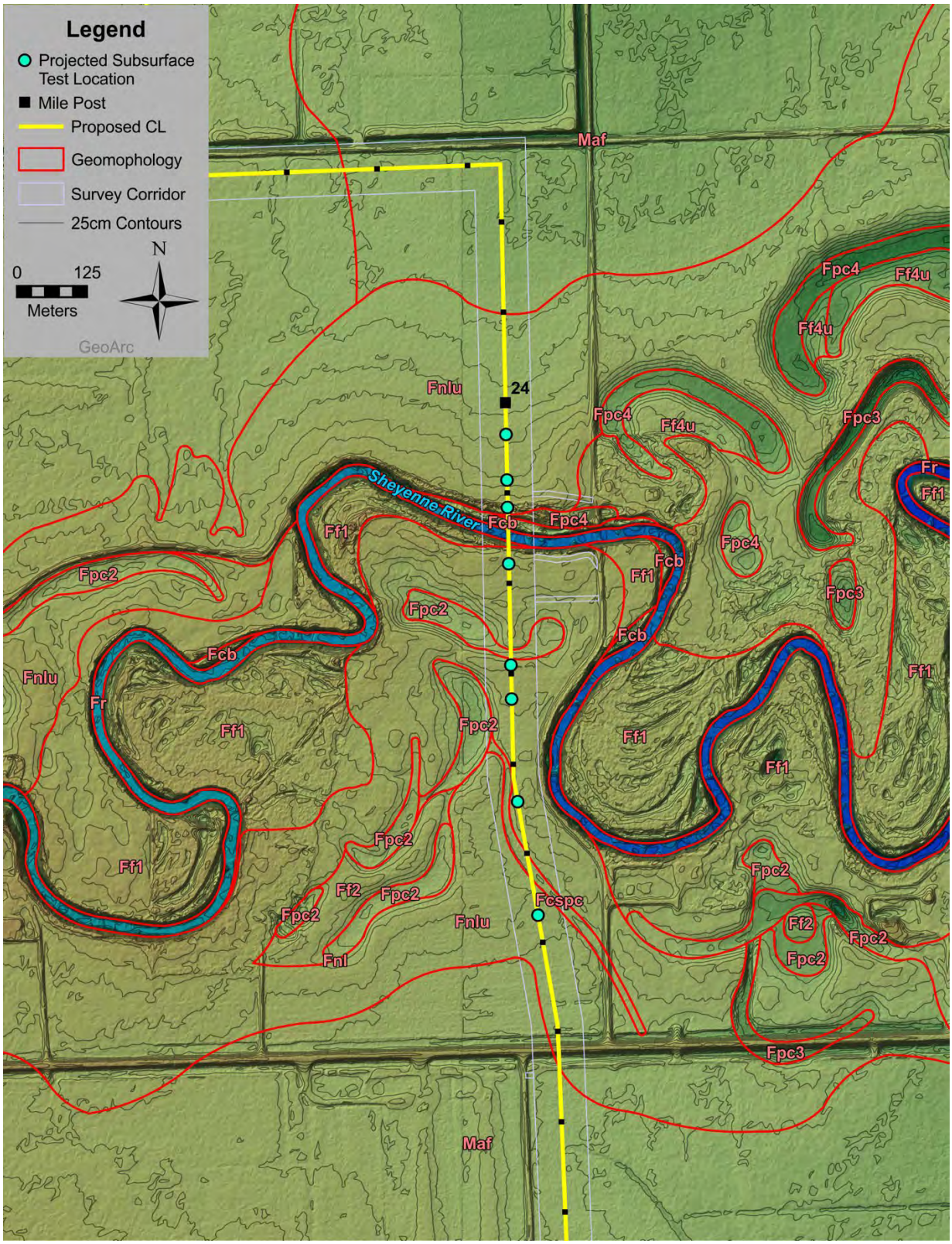

Figure 6. Project pipeline centerline, work corridor and geomorphology at Sheyenne River channel belt crossing (pDTL-05), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

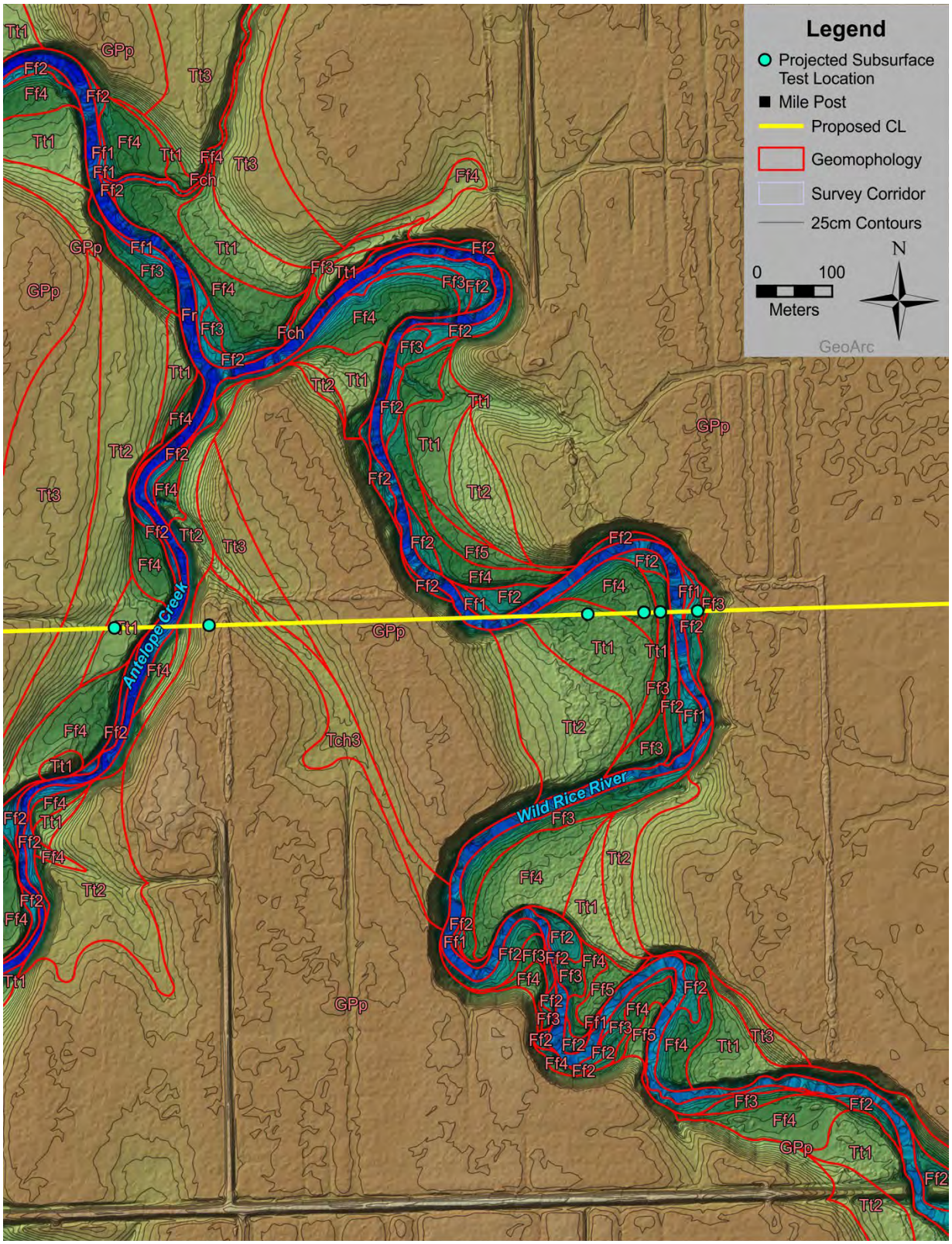

Figure 7. Project pipeline centerline, work corridor and geomorphology at Antelope Creek and Wild Rice River valley crossings (pDTL-07), on a LiDAR-based color shaded relief digital elevation model with 0.25 m contours.

Three terraces were mapped, with remnants of each terrace level preserved in both valleys (Figure 7). The low terrace (Tt1) is a major surface within the central to back parts of the area within meander bends. It is usually very gently sloping, but can approach a moderate slope when close to a steep slope developed in the glaciolacustrine plain sediment assemblage. The intermediate terrace (Tt2) is usually a moderately to somewhat steeply sloping surface where it most commonly fronts and abuts steep valley wall slopes developed in the glaciolacustrine plain sediment assemblage at the backs of the inside of meander bends. In two instances, Tt2 remnants directly front Tt3 terrace remnants. The high terrace remnants (Tt3) form very gently sloping benches that are shallowly cut into the glaciolacustrine plain (GPp) on the order of about 0.3-0.6 m (1.0-2.0 ft). In the area just above the confluence of the two valleys, there is a Wild Rice River paleochannel (Tch3) associated with one of these few high terrace remnants.

At pDTL-07, the Project approaches Antelope Creek Valley from the west and descends into it while crossing remnants of all three terrace levels (Tt1, Tt2, Tt3; Figure 7). On the other side of the creek, it ascends a relatively steep slope to the glaciolacustrine plain (GPp) where it forms a relatively narrow (300 m [980 ft]-wide) interfluve, diagonally bisected by a narrow and early paleochannel of the Wild Rice River (Tch3). The Project descends a steep slope into the Wild Rice River Valley where it immediately crosses the river on either side of a meander bend while just traversing the river-edge of the youngest floodplain (Ff1) within the bend. On the east side of the river, the Project ascends and crosses the inside of the next, much broader, meander upstream. Within this bend, the Project descends in a stepped manner from the low (Tt1) terrace, to the high (Ff4), then intermediate (Ff3) floodplain before crossing the river a third time at pDTL-07 (Figure 7). East of the river, the Project crosses the three youngest floodplain sequences, where the youngest (Ff1) and second-next-to youngest (Ff3) are extremely narrow, before ascending a steep slope out of the valley and back onto the glaciolacustrine plain (GPp).

APPENDIX A

LOG OF LANDSCAPES, LANDFORMS AND NRCS MAPPED SOILS ALONG THE WAHPETON EXPANSION PROJECT

Landscape / Landform	Mile Post Range	Mapped NRCS Soil Series [1]
Lake Agassiz Glaciolacustrine Plain		
Glaciolacustrine Plain, Offshore		
plain (GPp)	0.00 – 1.21	Fargo sicl; Fargo sic
floodplain (Ff1)	1.21 – 1.23	Wahpeton sic
Maple River (Fr)	1.23 – 1.24	water
plain (GPp)	1.24 – 2.08	Fargo sic
atrophied *Maple River* paleochannel (Fch)	2.08 – 2.09	Fargo sic
plain (GPp)	2.09 – 2.71	Hegne-Fargo sicl; Fargo sic;
compression ridge	2.71 – 2.88	Beardon sicl
plain	2.88 – 3.83	Fargo-Hegne sicl; Fargo sic; Bearden-Kindred sicl
intermittent water course in atrophied paleochannel	3.83 – 3.87	Bearden-Kindred sicl
plain	3.87 – 4.86	Bearden-Lindaas sicl; Fargo-Hegne sic
atrophied paleochannel	4.86 – 4.96	Dovray sic
plain	4.96 – 6.62	Bearden sicl; Fargo sicl, sic; Fargo-Hegne sic
intermittent water course in atrophied paleochannel	6.62 – 6.64	Dovray sic
plain	6.64 – 8.78	Fargo-Hegne sic; Fargo sic
paleomeander (2x) and relict natural levee (<0.6 m)	8.78 – 9.03	Overly-Bearden sil
plain (GPp)	9.03 – 9.98	Fargo sic
natural levee (<1.0 m) (Fnl)	9.98 – 10.01	Fargo sic; Overly-Bearden sil
unnamed low order watercourse in paleochannel (Fr)	10.01 – 10.04	Dovray sic
natural levee (<1.0 m) (Fnl)	10.04 – 10.35	Overly-Bearden sil; Fargo-Hegne sic; Fargo sicl
plain (GPp)	10.35 – 16.78	Fargo sicl, sic; Fargo-Hegne sic
Alluvial Fan and Wash Belt		
plain, with overwash veneer (GPpw), and possibly distal crevasse splay	16.78 – 17.23	Fargo sic; Hegne-Fargo sicl

plain, with overwash veneer (GPpw)	17.23 – 17.39	Kindred-Bearden sicl
natural levee (Fnl)	17.39 – 17.68	Kindred-Bearden sicl; Fargo sicl; Overly-Bearden sil
crevasse splay paleochannel (Fcspc)	17.68 – 17.69	Overly-Bearden sil
natural levee (Fnl)	17.69 – 17.89	Overly-Bearden sil
water course in atrophied paleochannel (Fr)	17.89 – 17.91	Overly-Bearden sil
natural levee (Fnl)	17.891– 18.83	Fargo sicl, sic; Fargo-Hegne sic

1. sic=silty clay; sicl=silty clay loam; sil=silt loam; scl=sandy clay loam; fsl=fine sandy loam; lfs=loamy fine sand; fs=fine sand

Landscape / Landform	Mile Post Range	Mapped NRCS Soil Series [1]
medial alluvial fan, undifferentiated	18.83 – 21.12	Fargo sicl, sic; Fargo-Hegne sic; Bearden-Kindred sicl; Kindred-Bearden sicl; Bearden sicl; Fargo sicl
undifferentiated relict crevasse splay paleochannel	21.12 – 21.14	Bearden sicl
crevasse splay	21.14 – 22.05	Hegne-Fargo sicl; Fargo sic; Kindred-Bearden sicl; Overly-Bearden sil
crevasse splay natural levee	22.05 – 22.53	Overly-Bearden sil
crevasse splay	22.53 – 22.68	Overly-Bearden sil
crevasse splay natural levee	22.68 – 23.10	Overly-Bearden sil; Fargo-Ryan thick solum
crevasse splay channel belt, distal	23.10 – 23.17	Fargo-Ryansic thick solum
crevasse splay	23.17 – 23.56	Fargo-Ryan sic thick solum
Sheyenne River alluvial fan (Maf)	23.56 – 23.90	Fargo-Ryan sic thick solum; Fargo-Ryan sic
Sheyenne River natural levee (Fnlu)	23.90 – 24.13	Fargo sicl (distal); LaDelle sicl (medial); Fairdale sil (proximal)
Sheyenne River (Fr), channel belt (Fcb), and floodplain (Ff1)	24.30 – 24.15	Fairdale sil - Fluvaquents
Sheyenne River natural levee (Fnlu)	24.15 – 24.27	Fairdale sil; LaDelle sicl
Sheyenne River paleochannel (Fpc2)	24.27 – 24.28	LaDelle sicl
Sheyenne River natural levee (Fnlu)	24.28 – 24.50	LaDelle sicl; Fairdale sil; Fargo sicl, sic
crevasse splay paleochannel (Fcspc)	24.50 – 24.53	Fargo sicl
Sheyenne River / crevasse splay natural levee (Fnlu)	24.53 – 24.71	Fargo sicl; sic
Cass / Richland County line	24.71	
Sheyenne River / crevasse splay natural levee (Fnlu)	24.71 – 24.73	Fargo sic
medial to distal alluvial fan, (Maf)	24.73 – 26.84	Fargo sic
Glaciolacustrine Plain, Offshore		
plain	26.84 – 30.98	Fargo sic

Alluvial Fan and Wash Belt		
distal to proximal slope	30.98 – 32.64	Fargo sicl, sic; Bearden sil; Overly sicl; Aberdeen-Ryan sicl
Glaciolacustrine Plain, Near-Shore Slope		
	32.64 – 34.35	Overly sicl; Hilaire-Espelie lfs; Galchutt-Wheatville sil; Fargo sic; Aberdeen fsl; Aylmer-Thiefriver – Serden complex

1. sic=silty clay; sicl=silty clay loam; sil=silt loam; scl=sandy clay loam; fsl=fine sandy loam; lfs=loamy fine sand; fs=fine sand

Landscape / Landform	**Mile Post Range**	**Mapped NRCS Soil Series [1]**
Sheyenne River Delta 1		
	34.35 – 37.90	Aberdeen fsl; Tiffany loam; Hilaire-Espelie lfs; Aylmer-Bantry fs; Thiefriver fsl; Maddock-Hilaire-Espelie lfs; Perella loam; Mantador-Delamere-Elmville fsl; Wheatville sil; Galchutt sil; Galchutt-Wheatville sil; Aberdeen-Galchutt-Fargo complex
Glaciolacustrine Plain, Near-Shore Slope		
	37.90 – 43.33	Aberdeen-Galchutt-Fargo complex; Bearden sil; Fargo-Enloe complex; Wheatville-Mantador-Delamere sil; Mantador-Delamere-Elmville loam; Ryan-Fargo sic; Wheatville sil
Glaciolacustrine Plain, Offshore		
plain	43.33 – 44.32	Ryan-Fargo sic; Aberdeen-Galchutt-Fargo complex; Fargo-Enloe complex
Glaciolacustrine Plain, Near-Shore Slope		
near-shore slope	44.32 – 44.94	Fargo-Enloe complex; Aberdeen-Galchutt-Fargo complex; Aberdeen-Ryan sicl
Pitcairn Creek	44.94 – 44.96	Overly-Nutley scl
near-shore slope	44.96 – 49.43	Overly sicl; Bearden sil; Aberdeen-Galchutt-Fargo complex; Gardena sil; Mantador-Delamere-Elmville

		loams; Galchutt-Wheatville sil; Fargo-Enloe complex
Glaciolacustrine Plain, Offshore		
	49.43 – 50.73	Aberdeen-Galchutt-Fargo complex; Fargo-Ryan sic, thick solum

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Landscape / Landform	**Mile Post Range [2]**	**Mapped NRCS Soil Series [1]**
terrace flat (Tt3)	50.73 – 50.77	Fargo sic
terrace slope (Tt2&Tt3 slope)	50.77 – 50.83	Nutly-Fargo sic
high floodplain (Ff4)	50.83 – 50.85	LaDelle sicl
intermediate floodplain (Ff2)	50.85 – 50.86	Cashel - Fluvaquents
Antelope Creek	50.86 – 50.87	water
terrace slope and flat (Tt2)	50.87 – 50.89	Cashel – Fluvaquents (unlikely)
high paleochannel, undifferentiated	50.89 – 50.91	Fargo-Ryan sic, thick solum
terrace flat (Tt3)	50.91 – 50.94	Fargo sic
plain (GPp); valley wall scarp	50.94 – 51.05	Fargo sic; Cashel – Fluvaquents
Wild Rice River	51.05 – 51.06	Water
intermediate floodplain (Ff2)	51.06 – 51.07	Cashel-Fluvaquents
high floodplain (Ff4)	51.07 – 51.08	Wahpeton sic
high floodplain (Ff5)	51.08 – 51.11	Wahpeton sic
low terrace (Tt1)	51.11 – 51.12	Wahpeton sic
intermediate terrace (Tt2)	51.12 – 51.14	Wahpeton sic
plain (GPp)	51.14 – 51.47	Fargo sic; Fargo-Ryan sic, thick solum
plain (GPp), w/ few s-n oriented narrow paleochannels	51.47 – 54.22	Ryan-Fargo sic; Fargo sic; Dovray sic (local paleochannel, swale segments); Fargo-Ryan sic, thick solum; Fargo-Enloe complex (local)
distal crevasse splay	54.22 – 55.75	Fargo-Ryan sic, thick solum
plain (GPp)	55.75 – 56.67	Ryan-Fargo sic
plain (GPp) and upper valley sideslope	56.67 – 56.97	Fargo-Ryan sic, thick solum, Nutley-Fargo sic (upper valley slope and immediately adjacent plain)
low terrace (Tt1) and terrace scarp	56.97 – 56.99	Nutley-Fargo sic; Cashel-fluvaquents (terrace scarp)
Wild Rice River	56.99 – 57.01	Water

plain (GPp)	57.06 – 57.48	Nutley-Fargo sic (upper valley slope), Fargo-Ryan sic, thick solum
plain (GPp)	57.06 – 57.48	Nutley-Fargo sic (upper valley slope), Fargo-Ryan sic, thick solum
floodplain (Ff4)	57.48 – 57.53	Nutley-Fargo sic
floodplain (Ff3)	57.53 – 57.54	Wahpeton sic
floodplain (Ff3)	57.01 – 57.02	Cashel-fluvaquents (terrace scarp); Wahpeton sic (floodplain flat)
floodplain (Ff4)	57.02 – 57.06	Wahpeton sic

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2. Mileposts after 50.73 not precise due to two reroutes lacking mileposts.

Landscape / Landform	Mile Post Range [2]	Mapped NRCS Soil Series [1]
floodplain (Ff2)	57.54 – 57.56	Cashel-fluvaquents
Wild Rice River	57.56 – 57.57	Water
floodplain (Ff3)	57.57 – 57.58	Cashel-fluvaquents
plain (GPp), with ephemeral drainageway	57.58 – 57.91	Fargo sic; Fargo-Nutley sic (ephemeral drainage)
plain	57.91 – 58.52	Fargo sic; Fargo-Ryan sic, thick solum
low natural levee	58.52 – 58.63	Fargo sic
intermittent water course in atrophied paleochannel	58.63 – 58.64	Fargo sic
low natural levee	58.64 – 58.74	Fargo sic
plain	58.74 – 60.56	Fargo-Enloe complex sic; Fargo sic; Antler-Mustinka complex; Clearwater-Reis sic, loamy substratum; Doran cl

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2. Mileposts after 50.73 not precise due to two reroutes lacking mileposts.