Harmony Solar Project

Appendix G

2023 Class I Cultural Resources Inventory

TETRA TECH

MEMO

To:	Melissa Schmit, National Grid Renewables
From:	Adam Holven and Grant Kvendru, Tetra Tech, Inc.
Date:	August 25, 2023
Subject:	Class I Cultural Resources Inventory for the Proposed Harmony Solar Project in Cass County, North Dakota

National Grid Renewables (NG Renewables) proposes to develop the proposed Harmony Solar Project (the Project) on an approximately 1,662-acre site located approximately 4 miles northwest of Mapleton in Cass County, North Dakota (the Project Area) (Attachment A, Figure 1). Class I and Class III Cultural Resource Inventories for the Project were previously completed by Area M Consulting (Area M) in 2016. The results of Area M's Class I and Class III Cultural Resources Inventory Report (Area M Report) failed to identify and cultural resources within the Project Area and concluded that the Project would have no adverse effects to cultural resources (Knudsen et al. 2016). The Area M Report was submitted to the State Historical Society of North Dakota (SHSND) for review in 2017. The SHSND's response, dated September 8, 2017, found the report acceptable and stated the Project had made a good faith effort to identify and avoid impacts to significant sites, provided the Project remains as described in the Class I and Class III Cultural Resource Inventory report (Attachment B). On February 26, 2019, the North Dakota Public Utilities Commission (NDPSC) released its "Findings of Fact, Conclusions of Law and Order" for the Project's siting application, certifying the approval of the Project's siting application.

NG Renewables has requested that Tetra Tech, Inc. (Tetra Tech) complete a cultural resources review of the Project. The purpose of this technical memorandum is to present the results of this cultural resources review, which entailed completing an updated Class I Cultural Resources Inventory (Literature Search), to determine if cultural resources may be within the Project Area and whether additional cultural resources survey within the Project Area may be necessary.

METHODS

Tetra Tech conducted an environmental review of the Project Area, reviewing landforms, soils, and hydrology within the Project Area to determine the archaeological potential of the Project Area and the potential for deeply buried archaeological deposits to be present.

Tetra Tech conducted a file search at the SHSND's offices in Bismarck, North Dakota on July 18, 2023, to obtain previously documented cultural resource information within the Project Area plus a 0.5-mile buffer (i.e., the Study Area). This included a review of cultural resource site forms, tribal resources, and previously completed survey reports. The purpose of this file search was to

- determine the presence of archaeological and architectural resources within the Study Area, and
- make appropriate recommendations for siting the Project's facilities based on the resources' National Register of Historic Places (NRHP) status.

Tetra Tech also conducted a review of available historical maps, aerial photographs, and North Dakota history to determine if Euro-American or Native American cultural resources not previously identified in the SHSND files may

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be present within the Project Area (Table 1). As part of this review, Tetra Tech reviewed available historical documentation to determine the locations of former farmsteads that have been present within the Project Area.

Table 1. Reviewed Historical Maps, Aerial Photographs, and County History

Type	Year	Reference
Plat	1870	U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) General Land Office (GLO) Plat obtained from the North Dakota Department of Water Resources (NDDWR)
Plat	1893	D.W. Ensign & Co.
Plat	1906	R.L. Polk & Co.
Plat	1951	Thomas O. Nelson Co.
7.5-minute Topographic Quadrangle	1961	U.S. Geological Survey (USGS)
Aerial Photographs	1941, 1962	NDDWR North Dakota Map & Aerial Photograph Dissemination Service
Aerial Photograph	1990	Google Earth Pro
North Dakota History	2017	*History of North Dakota* by Elwyn B. Robinson

Finally, Tetra Tech reviewed previous consultation and information provided to the Project by state agencies, including the SHSND and the NDPSC. Tetra Tech reviewed this information to determine if, based on current information, state agency consultation would require additional cultural resources work prior to Project development.

ENVIRONMENTAL INFORMATION

Landforms

The Project Area is within the Red River Valley of the Central Lowlands physiographic region in eastern North Dakota (Bluemle 2000). The Red River Valley is characterized by a flat plain that that was once the bed of Glacial Lake Agassiz (Bluemle 2000; North Dakota Game and Fish Department 2019). Most of the region is covered by silt and clay deposits; beach ridges scattered throughout the valley mark the former shoreline of Glacial Lake Agassiz are various points in time.

Based on a review of the 1961 Casselton, North Dakota and 1961 Mapleton, North Dakota 7.5-minute Topographic Quadrangles, the Project Area is located on a flat plain adjacent to the Rush River and the Lower Branch Rush River (Attachment A, Figure 1). No significant stream terraces or benches associated with the rivers appear to be present within the Project Area and topography within the Project Area is relatively consistent throughout, gently sloping eastward.

Soils

The soils map units within the Project Area consist of the Bearden, Fargo, and Overly series and the Bearden-Kindred, Fargo-Hegne, Kindred-Bearden, and Overly-Bearden complexes (Table 2) (U.S. Department of Agriculture-Natural Resource Conservation Service [USDA-NRCS] 2023a). The parent materials for all soil map units within the Project Area are lacustrine sediments (USDA-NRCS 2023b). The majority of the soils within the Project Area belong to the Fargo series (31 percent), the Overly-Bearden complex (22 percent), or the Bearden-Kindred complex (19 percent). The potential for deeply buried cultural materials is low.

Table 2. Soil Map Units in the Project Area

Soil Map Unit	Description
Bearden series	Very deep, somewhat poorly drained soils formed in calcareous silt loam and silty clay loam lacustrine sediments on glacial lake plains
Fargo series	Very deep, very poorly and poorly drained soils formed in calcareous, clayey lacustrine sediments on glacial lake plains, floodplains, and gently sloping side slopes of streams within glacial lake plains.
Hegne series	Very deep, poorly drained soils formed in clayey calcareous lacustrine sediments on glacial lake plains.
Kindred series	Very deep, somewhat poorly drained soils formed in lacustrine sediments on low flats and concave swales on glacial lake plains.
Overly series	Very deep, well or moderately well drained soils formed in calcareous sediments on glacial lake plains and terraces on valley side slopes.
Bearden-Kindred complex	See individual soil series descriptions.
Fargo-Hegne complex	See individual soil series descriptions.
Kindred-Bearden complex	See individual soil series descriptions.
Overly-Bearden complex	See individual soil series descriptions.

Source: USDA-NRCS 2023b

Hydrology

Based on a review of the 1961 Casselton, North Dakota and 1961 Mapleton, North Dakota 7.5-minute Topographic Quadrangles, portions of the Lower Branch Rush River flow through the central portions of the Project Area. A channelized segment of the Rush River is present along the northern boundary of the Project Area. Based on a review of historical documents, portions of the Rush River were formerly present within the Project Area prior to channelization. Both rivers eventually flow into the Sheyenne River approximately 8 miles east of the Project

Area. The Sheyenne River and the Red River, located approximately 12 miles east of the Project Area, are currently the region's most significant sources of water. On a regional scale, the Project Area is within the Lower Sheyenne Watershed of the Red Subregion of the Souris-Red-Rainy Water Resource Region (USGS 2023).

RESULTS OF THE FILE SEARCH AT SHSND OFFICES

Previously Conducted Archaeological Investigations

The results of the file search identified three previously conducted cultural resource investigations within the Project Area (Table 3). One of these investigations was Area M Report (Knudsen et al. 2016; Manuscript No. 017262). The other two investigations were conducted for a proposed transmission line project (Sabatke 2008; Manuscript No. 010482) and an proposed rural water line project (Pace and Morrison 2022; Manuscript No. 019842). Through these three investigations, the entire Project Area has been previously surveyed. All three of these investigations failed to identify any cultural resources within the Project Area. Three additional investigations were identified as having been completed within the Study Area (Table 3).

Table 3. Cultural Resource Investigations Conducted Within the Study Area

Report	Author(s) and Year	Manuscript No.	Location
Class I Literature Search and Class III Intensive Archaeological Investigation of the CapX2020 Fargo to St. Cloud Project: Cass County, North Dakota	Bielakowski 2011	012800	Study Area
Class I Literature Search and Class III Intensive Archaeological Investigation of the CapX2020 Fargo to St. Cloud 345 kV Transmission Line Project, Cass County, North Dakota Addendum I	Doperalski 2013	013899	Study Area
Cass Rural Water Contract 2007-1 (effluent line): Class I and Class III Cultural Resource Inventory in Cass Co., North Dakota	Kinney 2007	010185	Study Area
Class I and Class III Cultural Resource Inventory of the Harmony Solar ND, LLC Solar Project, Cass County, North Dakota	Knudsen et al. 2016	017262	Project Area and Study Area
Cass Rural Water District, NDSP 2022 Pipeline Improvements: A Class III Cultural Resource Inventory in Cass County, North Dakota	Pace and Morrison 2022	019842	Project Area and Study Area

Report	Author(s) and Year	Manuscript No.	Location
Minnkota Power Cooperative, Inc: Pillsbury-Fargo Generation Outlet Project Class I Literature Search, Class II Reconnaissance Inventory and Class III Intensive Cultural Resources Inventory in Barnes and Cass Co., North Dakota	Sabatke 2008	010482	Project Area and Study Area

Previously Documented Cultural Resources

No previously documented archaeological sites were identified within the Project Area. However, one previously documented isolated find, Site 32CSX358, was identified within the Study Area approximately 0.2 mile south of the eastern portion of the Project Area. The site consists of a single chipped stone lithic flake and has been recommended not eligible for listing in the NRHP. No other cultural resources were identified within the Study Area.

HISTORICAL DOCUMENT REVIEW

Based on a general overview of regional North Dakota history, bonanza farms were historically present in the vicinity of the Project Area in Cass County (Robinson 2017; North Dakota State University Libraries 2023). Bonanza farms were very large farms generally managed and owned by companies that helped to pioneer the development of farm technologies, economics, and labor. Based on a review of available historical information, it does not appear that significant or potentially significant archaeological sites or historic sites are present within the Project Area (Robinson 2017).

Tetra Tech also reviewed plat maps, topographic quadrangles, and aerial photographs to identify any historic structures, railroads, roads, or trails that were or may currently be present within the Project Area. A review of the 1870 DOI BLM GLO plat for Sections 10, 11, 15 and 16 of Township 140 North, Range 51 West revealed no historic features were illustrated within the Project Area (NDDWR 2023a). Part of the Rush River was illustrated flowing through the northern portion of the Project Area. Another drainage was illustrated in the approximate current location of the Lower Branch Rush River, in the central portion of the Project Area. A wetland was illustrated in the northern portion of the Project Area.

A review of the 1893 D.W. Ensign & Co. plat book for Cass County revealed that the Project Area was located in Harmony Township. One farmstead was illustrated in the northern portion of the Project Area, in the northwest quarter of Section 10 on land owned by Jacob True. Section line roads were illustrated intersecting the Project Area. Waterways illustrated within the Project Area were similar to those illustrated on the 1870 plat. No other historic features were illustrated in the Project Area. A review of the 1906 R.L. Polk & Co. plat book for Cass County revealed no significant changes within the Project Area.

A review of the 1951 Thomas O. Nelson Co. plat book for Cass County revealed that the farmstead previously illustrated within the northwest quarter of Section 10 was no longer illustrated. No structures were illustrated within the Project Area. Portions of the Rush River were illustrated to have been channelized; a channelized segment of the river was illustrated along the northern boundary of the Project Area. A review of the 1961 Casselton, North Dakota and 1961 Mapleton, North Dakota 7.5-minute Topographic Quadrangles revealed no structures were illustrated within the Project Area (Attachment A, Figure 2). Additional channelization activities along the Rush River were illustrated in the northern portion of the Project Area; the river no longer flowed within the Project Area and its channelized extent was illustrated along the northern boundary of the Project Area.

Based on a review of the 1941 aerial photographs, the majority of the Project Area appeared to be used for agricultural purposes (NDDWR 2023b). No farmsteads were illustrated within the Project Area. Features that appeared to be associated with drain tile were observed within the Project Area. Drainages in the approximate locations of the Rush River and the Lower Branch Rush River were observed within the Project Area. Portions of the Rush River within the Project Area appeared to follow the rivers natural path; channelized portions of the river were present along the Project Area's northern boundary. Text written on the aerial photographs after the photographs were developed obscures some portions of the Project Area.

Based on a review of the 1962 aerial photograph, one structure was visible within the Project Area. The structure was observed in the northwest quarter of Section 10, in the approximate location of the farmstead illustrated on the 1893 and 1906 plats (NDDWR 2023b). No other structures were illustrated within the Project Area. The entire extent of the Rush River within the Project Area was observed to have been channelized; the channelized extent of the river was observed along the northern boundary of the Project Area.

Based on a review of the 1990 aerial photograph, no structures were observed within the Project Area (Google Earth Pro 2023). No other significant changes were observed.

REVIEW OF AGENCY CONSULTATION

The Area M Report determined that the Project would have no adverse effects on cultural resources. The SHSND determined the report demonstrated a good faith effort to identify and avoid impacts to significant sites provided the Project remains as described and mapped in the Area M report (Attachment B). Based on information provided by NG Renewables, the Project remains as described and mapped in the Area M report.

As part of the siting process for energy conversion and transmission facilities, the NDPSC must consider the effect a proposed project may have on historic and archaeological sites (North Dakota Century Code 49-22-09). The NDPSC provided comment regarding the Project's effects on historic and archaeological sites in its "Findings of Fact, Conclusions of Law and Order" for the Project's siting application. In this document, the NDPSC acknowledged that the Project Area had been surveyed for cultural resources, that the Area M report was submitted to the SHSND for review, and that the SHSND found the report acceptable provided the Project remains as described and mapped in the report.

As a condition of siting application approval, the NDPSC stipulated that the Project must prepare an unanticipated discoveries plan (UDP) prior to the beginning of construction. The UDP must outline steps the Project will take in

previously unrecorded cultural resources or human remains are encountered during construction. Area M completed a UDP for the Project in 2018 and NG Renewables has retained the UDP on file.

Per the document, the Project also agreed to certified requirements set forth by the NDPSC. These requirements included:

1. the approval of all cultural resource mitigation plans by the SHPO prior to the start of any fieldwork and construction activity in the area affected by the Project, and
2. an agreement that if any cultural resource, paleontological site, archaeological site, historical site, or grave site is discovered during construction, it must be marked, preserved, and protected from further disturbances until a professional examination can be made by the SHSND and a report of such examination is filed with the NDPSC.

Based on information provided by NG Renewables, the listed requirements were general, and no mitigation plans are anticipated for the Project at this time.

SUMMARY OF RESULTS AND RECOMMENDATIONS

Based on a review of environmental information, the Project Area is located within a flat plain associated with the former extent of Glacial Lake Agassiz. Based on the soils identified in the Project Area, deeply buried cultural materials are not likely present.

Based on the results of the file review, the entire Project Area has been previously surveyed and no previously documented cultural resources are located within the Project Area. Based on a review of historical documents, no historically significant events appear to have occurred within the Project Area. One former historic farmstead was identified within the Project Area. The farmstead was constructed between 1870 and 1893 and appears to have been abandoned by the early 1960s. By 1990, all structures present in the approximate location of the farmstead had been demolished. Based on preliminary site plans submitted to the NDPSC, the location of the farmstead will be avoided during Project development.

The Project Area remains as described in the Area M Report and the SHSND's determination that the report demonstrated a good faith effort to identify and avoid impacts to significant sites remains valid. The Project appears to abide by the conditions of the NDPSC's siting application approval.

The results of this Class I Cultural Resources Inventory corroborate with the findings of the Area M Report. No additional investigation of cultural resources is recommended.

ATTACHMENTS

Attachment A: Figures

Figure 1: Project Location

Attachment B: Agency Correspondence

REFERENCES

Bielakowski, A.
2011 *Class I Literature Search and Class III Intensive Archaeological Investigation of the CapX2020 Fargo to St. Cloud Project: Cass County, North Dakota*. Manuscript No. 012800. On file at the State Historical Society of North Dakota, Bismarck, North Dakota.

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2023b North Dakota Map & Aerial Photography Dissemination Service. Data download, https://aerial.dwr.nd.gov/, accessed July 24, 2023.

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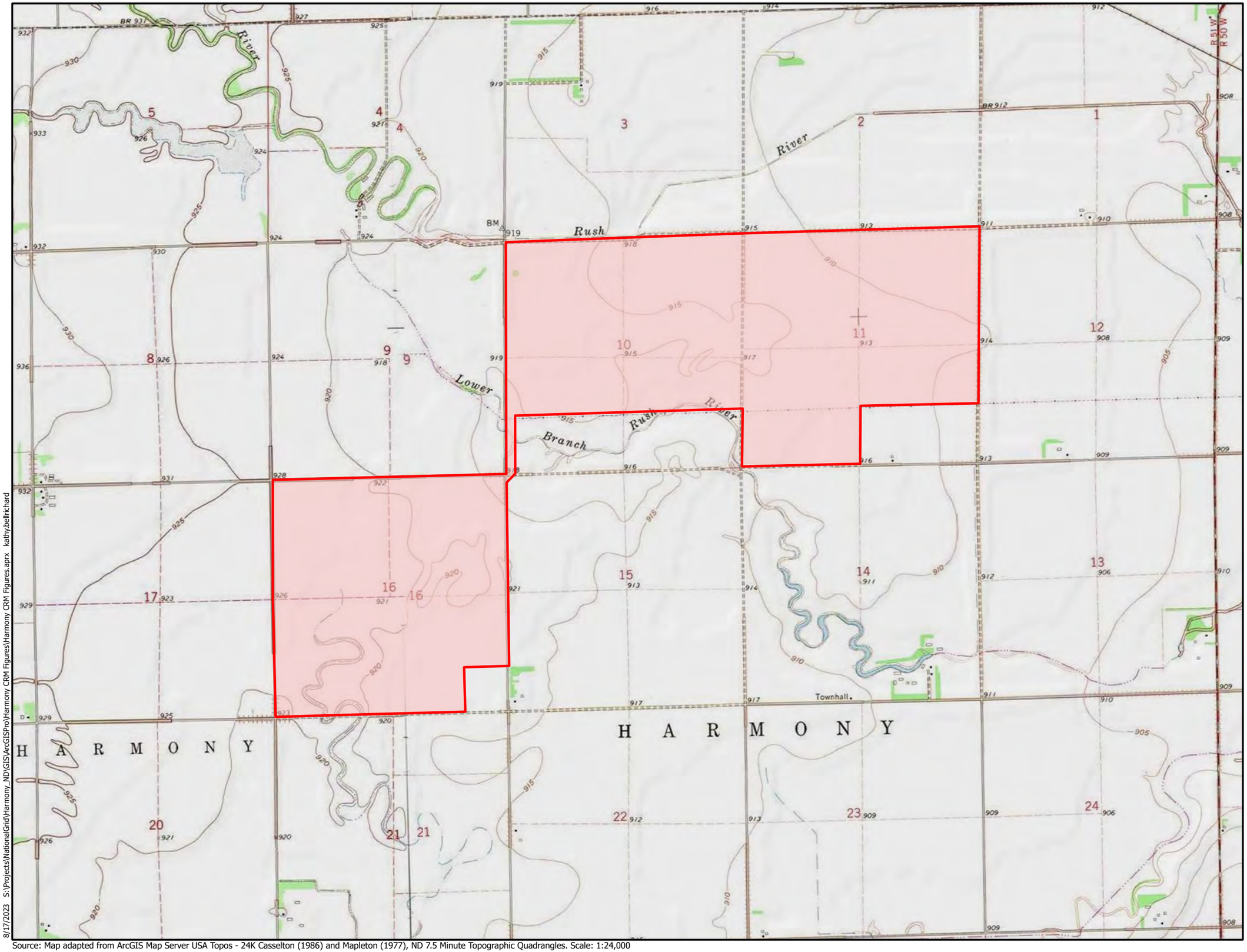
2023 Farms – Fargo History. Available online https://library.ndsu.edu/fargo-history/?q=content/farms, accessed July 26, 2023.

Pace, R. and J.G. Morrison

ATTACHMENT A. FIGURES



Project Area

0 0.25 0.5 Mile

Figure 1
Project Location

Harmony Solar
Cass County, North Dakota

TETRA TECH

Source: Map adapted from ArcGIS Map Server USA Topos - 24K Casselton (1986) and Mapleton (1977), ND 7.5 Minute Topographic Quadrangles. Scale: 1:24,000

8/17/2023 S:\Projects\NationalGrid\Harmony_ND\GIS\ArcGISPro\Harmony CRM Figures\Harmony CRM Figures.aprx kathy.bellrichard

ATTACHMENT B. AGENCY CORRESPONDENCE

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

September 28, 2017

Ms. Melissa Schmit
Senior Permitting Specialist
Harmony Solar
7650 Edinborough Way, Ste 725
Edina, MN 55435

ND SHPO Ref: 17-0373 PSC "Harmony Solar ND, LLC Class I and Class III Inventory in Cass County, North Dakota," in portions of [T140N R51W Sections 10, 11, 16]

Dear Ms. Schmit,

We reviewed ND SHPO Ref: 17-0373 PSC "Harmony Solar ND, LLC Class I and Class III Inventory in Cass County, North Dakota," and find the report acceptable. There has been a good faith effort to identify and avoid impacts to "Significant Sites," provided the project remains as described and mapped in this Area M report dated September & October 2016.

Thank you for the opportunity to review this project. If you have questions please contact either Paul Picha at ppicha@nd.gov or (701) 328-3574 or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Claudia J. Berg
Director, State Historical Society of North Dakota

2022 *Cass Rural Water District, NDSP 2022 Pipeline Improvements: A Class III Cultural Resource Inventory in Cass County, North Dakota*. Manuscript No. 019842. On file at the State Historical Society of North Dakota, Bismarck, North Dakota.

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