Appendix I

Archaeological and Historic Property Information

Appendix I-1

Literature Review Summary

In accordance with Minnesota Rules, part 7829.0500 and Minnesota Statutes Chapter 13, Northern Crescent Solar LLC has designated portions of Appendix I-1 – Phase IA Cultural Resource Literature Review as NONPUBLIC DATA – NOT FOR PUBLIC DISCLOSURE because it contains sensitive cultural resource location information. The Minnesota State Historic Preservation Office Manual for Archaeological Projects in Minnesota provides for restricted access to sensitive cultural resource location information.

Westwood

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September 2, 2021

Michelle Matthews, Senior Director of Development
GlidePath Development LLC
2147 University Avenue West, Suite 204
St. Paul, MN 55114

Re: Cultural Resources Literature Review for the Winnebago Solar and Storage Project
Faribault County, MN
File: R0027810.00

GlidePath Development LLC (GlidePath) contracted Westwood Professional Services, Inc. (Westwood) to conduct a cultural resources literature review to support development of the Winnebago Solar and Storage Project (Project). The cultural review will assist with Project design, as well as support anticipated permitting of the approximately 150 megawatt (MW) solar energy generation Project, associated 50 MW battery storage facility and related facilities. The literature review examined documentary resources, including historic maps, archaeological site files, historic structure inventories, and previous cultural resource survey reports.

The Project Area is approximately 1,311 acres in Faribault County, Minnesota. Approximately 8,330 acres were reviewed as part of the literature review study area, including a one-mile buffer from the Project Area (**Table 1**).

TABLE 1: SECTIONS CONTAINING PROJECT AREA AND/OR ONE-MILE BUFFER

Township	Range	Sections in Project Area	Sections in Buffer
103	27	7, 18	5-8, 17-20
103	28	11, 12, 13	1-3, 10-15, 23, 24

The background research and literature review consisted of examining files maintained by the Office of the State Archaeologist (OSA) and the Minnesota State Historic Preservation Office (SHPO). Review of information from these offices included an examination of site maps, archaeological site forms, burial files, historic structure inventories, and survey reports. The purpose of this review was to create an inventory of previously recorded cultural resources, including archaeological sites and historic architectural resources in the study area. The background research and literature review would identify previous cultural resource investigations along with levels of disturbance and potential for sites within the Project Area or buffer.

Literature Review

On July 28, 2021, Westwood Cultural Resource Manager, Ryan Grohnke, requested a database search from the Minnesota SHPO. Additionally, he reviewed the Minnesota state archaeological site files available via the online Portal maintained by the MN Office of the State Archaeologist (OSA) to obtain a list of previously recorded archaeological sites and historic structures located within the proposed Project Area.

Due to precautions required by the Minnesota Governor's Stay Safe MN orders in response to the COVID-19 pandemic, in person review at SHPO and OSA was not allowed. This limited Westwood's ability to review previous survey reports and other materials housed on-site at these locations. Westwood Architectural Historian, Sara Nelson, assisted in reviewing information from staff at the SHPO offices.

The Project Area is located in Minnesota Archaeological Region 2s – Prairie Lake (South). Sites of earlier prehistoric periods in this region are generally located on islands and peninsulas of lakes, with some villages near major rivers. Winter villages would be located in the wooded areas of large river valleys. Temporary campsites could be found on rivers and around lakes. Late prehistoric large village sites may be found on the terraces of the Minnesota and Blue Earth rivers, with some campsites on islands and peninsulas of lakes (Gibbon et al. 2002).

Previous Cultural Resources Investigations

Westwood was unable to review previous reports housed at SHPO or OSA due to restrictions associated with the COVID pandemic.

Archaeological Sites

No previously recorded archaeological sites have been identified within the Project Area. Thirteen previously recorded archaeological sites are within one mile of the Project (**Table 2, Exhibit 1**). Most of the archaeological sites have been recommended or determined not eligible for listing in the National Register of Historic Places (NRHP) with two sites being unevaluated for NRHP eligibility.

TABLE 2: PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

Site No.	Site Name	Site Type	NRHP Status
21FA0046	NA	Artifact Scatter	Recommended Not Eligible
21FA0050	NA	Artifact Scatter	Unevaluated
21FA0105	Golly	Lithic Scatter	Not Eligible
21FA0106	Ott	Lithic Scatter	Not Eligible
21FA0107	Perry	Lithic Scatter	Not Eligible
21FA0108	Poverty Acres	Lithic Scatter	Not Eligible
21FA0109	Riverside Country Club	Lithic Scatter	Not Eligible

Site No.	Site Name	Site Type	NRHP Status
21FA0114	Hill Findspot	Lithic Scatter	Unevaluated
21FA0143	NA	Single Artifact	Not Eligible
21FA0144	NA	Single Artifact	Not Eligible
21FA0145	NA	Single Artifact	Not Eligible
21FA0146	NA	Single Artifact	Not Eligible
21FA0147	Morse	Artifact Scatter	Not Eligible

Key: Site No. = site designation applied by Office of the State Archaeologist; Site Name = unofficial site name as listed on site form; Site Type = brief description of site as designated on site form; NRHP Status = Eligibility or listing status in the National Register of Historic Places.

Historic/Architectural Resources

No historic/architectural resources have been previously inventoried within the Project Area. Four resources have been previously inventoried within the one-mile buffer (**Table 3, Exhibit 1**). None of the resources have been evaluated for listing in the NRHP; not all SHPO inventory forms could be located to verify previous recommendations of eligibility.

[NONPUBLIC DATA BEGINS HERE...

TABLE 3: PREVIOUSLY RECORDED HISTORIC/ARCHITECTURAL RESOURCES

[redacted]

Key: Inventory No. = designation applied by SHPO; Name = unofficial name or resource type as listed on inventory form; Address = location as listed on inventory form, verified in GIS if possible; NRHP Status = eligibility or listing status in the NRHP; Project/Buffer = location within in Project Area or one-mile buffer.

Other Sources

An Illustrated Historical Atlas of the State of Minnesota (Andreas 1874) shows a schoolhouse in the [redacted] but its specific location cannot be determined (**Exhibit 1**). A road is indicated approximately along the western boundary of the Project Area in about the same location as the current Highway 169.

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Historic Trygg Maps (1969) developed from the original township land surveys indicate the Project Area consisted primarily of prairie with several small marshes. The following maps and atlases were also examined:

- 1913 Atlas and Farmers Directory of Faribault County, Webb Publishing Co;
- 1920 Plat Book and Livestock Breeders' Guide of Faribault County, The Fairmont Map Company;
- 1929 Atlas and Farmers Directory of Faribault County, Webb Publishing Company; and
- 1955 Atlas of Faribault County, Thomas O. Nelson Co.

These maps show a farmstead in the Project Area which is still extant today.

A review of 1938 and 1954 historic aerial photographs indicate the Project Area was predominantly cultivated agricultural land. A road was shown running northwest to southeast in sections 12 and 13 of Township 103, Range 28. The former location of this road can still be seen in current aerial photography. One farmstead was observed in the historic aerial photographs; this farmstead is extant today.

Recommendations

A review of the existing cultural resource data indicates that there are no previously documented archaeological sites or inventoried historic/architectural resources within the proposed Project Area. Thirteen archaeological sites and four historic/architectural resources have been inventoried within a one-mile buffer of the Project Area. No previously inventoried historic resources within one mile of the Project Area are listed in the NRHP.

As the Project is located on uplands located between the Blue Earth River and Rice Lake, the area is of moderate to high potential for unrecorded archaeological resources with the highest potential closer to the water sources. Westwood recommends a Phase I Archaeological Reconnaissance Survey of areas of proposed ground disturbance associated with the Project.

The Project will be permitted by the Minnesota Public Utilities Commission (PUC) under the Power Plant Siting Act under Minnesota Statutes, Chapter 216E and Minnesota Rules, Chapter 7850. The PUC may require consideration of the Project's effects upon cultural resources including the completion of cultural field surveys, and/or consultation with the SHPO.

If the Project is deemed a federal undertaking (e.g., requires a federal permit, license, or approval; is located on federally owned or managed land; or receives federal financial assistance), the scope of required cultural resource investigations would be determined by the functioning lead federal agency in cooperation with the SHPO and pertinent Tribal Historic Preservation Offices (THPO), as defined in Section 106 of the National Historic Preservation Act of 1966 (as amended) (NHPA).

Please contact me at ryan.grohnke@westwoodps.com or 952.906.7403 if you have any questions.
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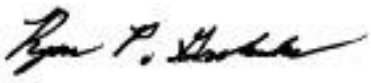
Sincerely,

WESTWOOD PROFESSIONAL SERVICES, INC.



Ryan P. Grohnke
Cultural Resources Manager

Attachment Exhibit 1 Winnebago Solar and Storage Project – Cultural Resources

References

Andreas, A.T.
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Gibbon, Guy E., Craig M. Johnson, and Elizabeth Hobbs
2002 "Chapter 3: Minnesota's Environment and Native American Culture History." *Mn/Model Final Report Phases 1-3*, Minnesota Department of Transportation. SHPO Reference #95-4098.
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1969 Composite Maps of U.S. Land Surveyors' Original Plats and Field Notes. Trygg Land Office, Ely, Minnesota.

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Appendix I-2

A Report for Phase I Archaeological Survey

In accordance with Minnesota Rules, part 7829.0500 and Minnesota Statutes Chapter 13, Northern Crescent Solar LLC has designated portions of Appendix I-2 – Phase I Archaeological Survey as NONPUBLIC DATA – NOT FOR PUBLIC DISCLOSURE because it contains sensitive cultural resource location information. The Minnesota State Historic Preservation Office Manual for Archaeological Projects in Minnesota provides for restricted access to sensitive cultural resource location information.

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July 25, 2022

State Historic Preservation Office
203 Administration Building
50 Sherburne Ave
St. Paul, MN 55155

Re: Phase I Archaeological Survey Winnebago Solar and Storage Project
File R0027810.00
SHPO Number: 2022-0452

Attached with this letter is the Phase I Archaeological Survey of the Winnebago Solar and Storage Project, Faribault County, Minnesota. This survey was conducted to describe the effects of the Project on archaeological resources as part of the site permit process under the Power Plant Siting Act administered by the Public Utilities Commission (PUC). No federal involvement is anticipated. The request for review is being submitted electronically on July 25, 2022. If requested, a hard copy will be provided.

Work is being performed on behalf of Winnebago Solar and Storage LLC. Chuck Beisner is the primary contact and can be reached at cbeisner@Glidepath.net or 612-701-4855.

The Project is located on approximately 1,207 acres south and southeast of the City of Winnebago. Due to design changes a total of 1,293 acres were surveyed in sections 7 and 8 of Township 103N, Range 27W; and sections 11, 12, and 13 of Township 103N, Range 28W. Mapping of the survey area is provided in the report. The proposed solar Project will cause ground disturbance from the installation of solar arrays, collection cables, access roads and associated infrastructure.

The attached report details the field methods and results of the archaeological investigations. Survey was performed on 1,293 acres in December 2021 and June 2022. No archaeological resources were identified. Additionally, no NRHP or State listed historic structures are located in the Project area or a one-mile buffer.

Please contact me at 612-209-3352 or ryan.grohnke@westwoodps.com if you have any questions.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES

Ryan P. Grohnke
Cultural Resources Manager

A REPORT FOR PHASE I ARCHAEOLOGICAL SURVEY

Winnebago Solar and Storage Project

Faribault County, Minnesota

JULY 22, 2022

PREPARED FOR:
Winnebago Solar and Storage LLC
2147 University Avenue West, Suite 204
St. Paul, MN 55114

PREPARED BY:
Westwood

Westwood

Phase I Archaeological Survey

Winnebago Solar and Storage Project

Faribault County, Minnesota

Prepared For:
Winnebago Solar and Storage LLC
2147 University Avenue West, Suite 204
St. Paul, MN 55114

Prepared By:
Rigden Glaab
Sara J. Nelson
Ryan Steeves
Ryan Grohnke
Westwood Professional Services, Inc.
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343

Project Number: R0027810.00
Date: July 22, 2022

Abstract

Winnebago Solar and Storage LLC contracted Westwood Professional Services, Inc. (Westwood) of Minnetonka, Minnesota to conduct a Phase I Archeological Survey in December 2021 for the proposed Winnebago Solar and Storage Project (Project) in Faribault County, Minnesota. The Project will be comprised of 150-megawatt (MW) solar energy generation facilities, a 50 MW battery energy storage system (BESS) facility, and related facilities. The Project is being conducted at a state-level review due to anticipated requirements of the Minnesota Public Utilities Commission (MPUC) as part of the Site Permit Application process as required under the Power Plant Siting Act (Minnesota Statutes Chapter 216E). The overall Project Area encompasses approximately 1,207 acres in Faribault County.

The Preliminary Development Area is commensurate with the portions within the Project Area where ground-disturbing Project facilities are proposed to be constructed and operated. The Area of Potential Effects (APE) for this Phase I archaeological pedestrian survey and report consists of an original (December 2021) and an updated (January 2022) Preliminary Development Area. A total of 1,293 acres were surveyed due to design changes. See **Exhibit 1** for the locations of the original and additional Preliminary Development Areas (APE) and the current Project Area.

Prior to conducting the fieldwork, Westwood Cultural Resources Manager Ryan Grohnke examined files maintained by the Office of the State Archaeologist (OSA) and the Minnesota State Historic Preservation Office (SHPO) on July 28, 2021. No previously recorded resources are present in the Project APE (Preliminary Development Area). The one-mile buffer encompasses 8,155 acres surrounding the Project Area.

Fieldwork was carried out by Westwood Principal Investigator Rigden Glaab and Archaeological Technicians Brian Joby Hunt, Ryan Steeves, Lindsay Schwartzkopf, Daniel Schneider, and Sara J. Nelson between December 1 and 3, 2021. Additions to the APE were reviewed by Ryan Grohnke and Sara Nelson on June 8 and 9, 2022. Mr. Glaab meets the Secretary of the Interior's Professional Standards for Archaeology, as stipulated in 36 CFR Part 61, and served as Principal Investigator for the Project. Ground surface visibility (GSV) across the entire Project APE was 95%+ at both times of survey, which provided optimal conditions for pedestrian survey as field method.

No archaeological resources were identified within the Project APE by Westwood archaeologists during the Phase I Survey and no further work is recommended for the Project at this time. No National Register of Historic Places or State listed historic resources will be impacted by the Project.

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Appendices

1.0 Introduction

Winnebago Solar and Storage LLC (Winnebago) contracted Westwood Professional Services, Inc. (Westwood) of Minnetonka, Minnesota, to perform a Phase I Archeological Survey in December 2021 for the proposed Winnebago Solar and Storage Project (Project) in Faribault County, Minnesota. The Project will consist of 150 MW solar energy generation facilities, a 50 MW BESS facility, and other related facilities. The Project is being completed to meet anticipated requirements of the Minnesota Public Utilities Commission (MPUC) as part of the Site Permit Application process as required under the Power Plant Siting Act (Minnesota Statutes Chapter 216E). The planned overall Project Area encompasses approximately 1,207 acres in Faribault County (**Exhibit 1**).

The Preliminary Development Area is the area within the Project Area in which ground-disturbing Project facilities would be constructed and operated. The Preliminary Development Area comprises the Project Area of Potential Effect (APE) for the purposes of this Report and formed the inventory area used by Westwood archaeologists during the associated Phase I archaeological pedestrian survey. See **Exhibit 1** for the locations of the Preliminary Development Areas (APE). The Preliminary Development Area originally was 1,075 acres in December 2021. Following revisions to design, an 85-acre portion of the Preliminary Development Area was removed from the Project Area, but an additional 218 acres was added in other areas.

The Project is located south and southeast of the City of Winnebago in Faribault County, Minnesota. The PLS locations of the Project are listed in **Table 1** below.

Table 1: Sections Containing Project Area and/or One-Mile Buffer

Township	Range	Sections Containing Project Area	Sections Containing One-Mile Buffer (Original Phase 1A Literature Review)
103	27	7, 18	5–8, 17–20
103	28	11, 12, 13	1–3, 10–15, 23, 24

The Minnesota SHPO requires that archaeological investigations be conducted by a qualified archaeologist who meets the Secretary of the Interior's qualifications as outlined in 36 C.F.R. 61. The Minnesota SHPO also outlines standards and guidelines for conducting work in the state. Rigden Glaab of Westwood meets the Secretary of Interior's Professional Standards for Archaeology, as stipulated in 36 C.F.R. Part 61, and served as Principal Investigator for the archaeological survey. Fieldwork and review were supported by Westwood Cultural Resources Manager Ryan Grohnke, and archaeologists Brian Joby Hunt, Ryan Steeves, Lindsay Schwartzkopf, Daniel Schneider, and Sara J. Nelson.

2.0 Scope of Work

A Phase I Archaeological Survey was conducted to determine whether any undocumented, significant archaeological resources are present within the proposed Project's APE and to define vertical and horizontal boundaries of identified sites. If new sites are identified, investigators assess proposed construction impacts and provide recommendations on avoidance or additional work. The APE for this Project is any location where ground disturbance could occur within the Preliminary Development Areas. The Preliminary Development Area originally was 1,075 acres

in December 2021. Following revisions to design, an 85-acre portion of the Preliminary Development Area was removed from the Project Area, but an additional 218 acres was added in other areas. A total of 1,293 acres was surveyed due to changes in the Project design (**Exhibit 1**).

3.0 Survey Methods

Project survey methods included background research, a literature review, and field investigations in the form of pedestrian survey. Environmental background and historic contexts were used to assess site probability and determine site types most likely to be encountered in the area.

The background research and literature review involved detailed file review in the online Portal maintained by the OSA and a request for data and files from the Minnesota SHPO, specifically examining site maps, archaeological site forms, burial files, and survey reports. Other sources investigated included the Historic Andreas Atlas, Trygg Maps, and county histories and plat books. The background research and literature review identified previous cultural resource investigations and previously recorded archaeological sites, along with levels of disturbance and potential for sites within the Project APE (Preliminary Development Area).

Fieldwork consisted of pedestrian visual ground surface survey, completed in 15-meter interval transects throughout the proposed Project APE. Investigation of the Project APE was completed between December 1 and 3, 2021 and June 8 and 9, 2022. Most effective visual inspection is conducted on ground surfaces, such as cultivated fields exhibiting exposed soils. Generally, pedestrian survey is utilized in areas where surface visibility is greater than 25%. Significant slopes, wetlands, and obviously heavily disturbed areas may be excluded from survey.

4.0 Results of Background Investigations

4.1 Environmental Background

The Project is located in a sparsely populated agricultural region in south-central Minnesota in Faribault County, approximately 120 miles southwest of Minneapolis and St. Paul metropolitan area and approximately two miles south-southeast of the City of Winnebago on the east side of U.S. Highway 169 (**Exhibit 1**). Faribault County's 722 square miles are primarily agricultural, with the Project Area being almost entirely agricultural land. Ground surface visibility (GSV) ranged from 65% to 95%.

4.1.1 Landscape

The Project is located in the Des Moines Lobe ecoregion of the Western Corn Belt Plains with Lake Wilson meeting at the convergence of the Des Moines Lobe and the Loess Prairies. The Western Corn Belt Plains is noted to possess high agricultural productivity due to its fertile mesic soils, temperate climate, and adequate precipitation during the growing season. The Des Moines Lobe extends from southern Minnesota into north-central Iowa, and with this region being covered by the Des Moines Lobe of the Wisconsin glaciation. The northern two-thirds of the ecoregion is bisected by the Minnesota River, from northwest to southeast, and its floodplain that is trenched into the glacial till along much of its length before the river turns northeast at Mankato. Much of the eastern border is formed by moraines from both the Des Moines Lobe glaciation and earlier stages of glaciation, with the Kiester Moraine on the eastern border of the

county. The bedrock that underlies Faribault County is part of a sequence of Late Cambrian to Middle Ordovician sedimentary rock, comprised of sandstone, shale, and carbonates. The southeastern three-fourths of Faribault County is comprised of limestone beneath glacial drift. Limestone gives way to progressively older shales, sandstones, and dolomites. The largest part of the ecoregion is in till plain and ground moraine (Quade and Rongstad 1991: CEC 2021).

4.1.2 Flora

Prior to European settlement in the region, grasses would have dominated a Prairie Grassland Biome. Frequent fires would have kept woody vegetation in check, with fire-tolerant trees, such as cottonwoods (*Populus spp)*, elms (*Ulmus spp*), ashes (*Fraxinus spp*), and willows (*Salix spp*). The modern landscape does not reflect that of pre-European peoples, as less than 1 percent of this prairie landscape remains, making it functionally extinct. Modern trees are planted as windbreaks around farmsteads and along fencerows to prevent soil erosion, with a mixture of native and non-native plants. Modern native plants may include, big bluestem (*Andropogon gerardii*), blazing star (*Liatris spicata*), purple prairie clover (*Dalea purpurea*), prairie dropseed (*Sporobolus heterolepis*), leadplant (*Amorpha canescens*) (Wilken et al. 2011).

4.1.3 Fauna

The agricultural landscape of the Western Corn Belt limits the wildlife that may reside within the region. Modern native mammals may include White tail deer Odocoileus virginianus, pocket gopher (Family Geomyidae), American badger (*Taxidea taxus)*, raccoon (*Procyon lotor*), coyote (*Canis latrans*), and Virginia opossum *(Didelphis virginiana*). Birds may include Canada goose (*Branta canadensis*), red-tailed hawk (*Buteo jamaicensis*), barn owl (*Tyto alba*), wild turkey (*Meleagris gallopavo*), greater prairie chicken (*Tympanuchus cupido)*, and upland sandpiper *(Bartramia longicauda*). Reptiles and amphibians may include great plains toad (*Anaxyrus cognatus)*, American toad (*Anaxyrus americanus*), and snapping turtle (Chelydra serpentina). Waterways are predominantly channelized intermittent and perennial streams. Streams and some natural lakes provide habitat for a variety of species like walleye (*Sander vitreus*), bluegill (*Lepomis macrochirus*), northern pike (*Esox lucius*), sunfish (Family *Centrachidae*), and others (MnDNR, 2021; Wilken et al. 2011).

4.1.4 Soils

The soils in Faribault County formed during the Quaternary Period and are noted to be diverse in composition. The soils range from highly organic Histosols to very young mineral soils, such as Entisols. Glacial drift of the Wisconsin age forms the uppermost geologic unit in Faribault County. Glacial till sediments cover 46% of the county, while glacial lacustrine deposits cover 45% of the county. The remainder is comprised of glacial outwash deposits. Lying beneath the Glacial Drift is Sioux Quartzite Bedrock. Prairie soils are noted to possess a dark color and high nutrient content, which cover much of the southern and western part of the state. Soils tend to be gently sloping, with a black silty clay loam to black clay loam with ranging depths of 20–30 cm throughout the county. Underlying materials typically consist of yellowish-brown clay loam to dark yellow-black clay loams reaching a depth of approximately 150 cm (Matzdorf 1994; CEC 2021).

4.1.5 Geology

Cretaceous-age sediments and Sioux Quartzite make up the bedrock surface of the drift mantled Coteau des Prairies. Metamorphic and igneous crystalline Precambrian rocks underlie the Sioux

Quartzite and Cretaceous rocks. Tongue River Silica (TRS) is noted as culturally abundant in western Iowa and Minnesota. Naturally occurring Tongue River cobbles are distributed generally in glacial graves throughout the region, often heat treated, they typically exhibit a red or maroon coloration in the archaeological record. However, natural color ranges from red ochre to yellowish brown, with a grey variation occurring in North Dakota. Tongue River Silica is not found naturally in southwest Minnesota and would have been traded or carried into the region by Indigenous peoples. TRS is derived from the Fort Union formation in the Dakotas, however, may be carried downstream into Iowa along the Missouri River (Anderson 1978; Quade and Rongstad 1991).

Knife River flint (KRF) is also present in the region and was utilized by Native Americans. Its source is likely attributed to glacial cobbles or gravels. The Pipestone Quarry Site (21PP2) located 110 miles west-northwest of the Project was visited by the artist George Catlin in 1836. The pipestone quarries in southwestern Minnesota were extensively mined by Native American tribes for pipe manufacture. The raw material, catlinite, was eventually named after Catlin (Morrow et al. 2016: 34).

4.1.6 Geomorphology

Geomorphology of the Project is primarily comprised of a thick loess and glacial till cover over the Mesozoic and Paleozoic shale, sandstone, and limestone (Wilken et al. 2011). The greater ecoregion is bisected by the Minnesota River, from northwest to southeast, and its floodplain that is trenched into the glacial till along much of its length before the river turns northeast at Mankato. Much of the eastern border is formed by moraines from both the Des Moines Lobe glaciation and earlier stages of glaciation. The largest part of the ecoregion is in till plain and ground moraine. Faribault County is located within two major watersheds, the Blue Earth River Watershed and the Le Sueur River Watershed. These watersheds, along with the Watonwan River Watershed, form the Greater Blue Earth River Basin (Matzdorf 1994; Nagle et al. 2020, Wilken et al. 2011).

4.2 Cultural History

4.2.1 Prehistoric

In general, there are five major archaeological traditions in Minnesota that consist of the Paleoindian, Archaic, Woodland, Plains Village, and the later Mississippian, Oneota and Psinomani periods (Anfinson 1997; Arzigian 2008; Dobbs 1990; Gibbon 2012). These traditions represent varying degrees of cultural adaptations to changing environmental conditions, endemic population growth, and the movement of Native American groups in the past. The following cultural context presents an interpretation of this history based on current archaeological research and broadly accepted models for precontact social lifeways.

The Project is situated in Minnesota Archaeological Region 2s (Prairie Lake [South]) (Gibbon et al. 2002). Gibbon et al. (2002) note that village sites of earlier prehistoric periods are typically located on islands, lake peninsulas, and major rivers. Archaeological sites can be expected during the early periods to be near glacial streams and rivers. In this context, winter villages occur in wooded areas of large river valleys, while temporary campsites are identified along minor rivers and lakes. The Minnesota and Blue Earth rivers near the Project are a locus Late Prehistoric activity in the region with numerous village site examples documented atop significant terraces (Gibbon et al. 2002). Woodland period camps follow a similar pattern across

the landscape but are limited to temporary or special use activities. Euroamerican settlements start along riverine areas and later expand to follow surveyed divisions in subsequent townships.

The cultural history presented below focuses on the archaeology of the Prairie Lake Region (PLR), specifically across southwest Minnesota. This encompasses Faribault County where the Project is located. Archaeological phases will be discussed as they pertain to research on cultural changes influenced by environmental and social variables. Ceramic, lithic, and groundstone technologies are also included as material markers of these transitions.

4.2.1.1 Paleoindian Period (13,000 to 9,000 Before Present [B.P.])

The Paleoindian Period represents the earliest evidence of human occupation in Minnesota, typically separated into the Early Paleoindian (13,000–12,500 B.P.) and Late Paleoindian (12,500–9,000 B.P.) periods (Frison 1998). Spear technology is important during this timeframe, as opposed to an emphasis on atlatl and bow and arrow lithic technology seen during later periods. This reflects a subsistence strategy focused on large game hunting and high mobility. However, Gibbon (2012: 37) suggests foraging behavior may have been broader spectrum, as evidenced by the long temporal overlap of eastern Archaic and Paleoindian traditions in Minnesota. Paleoindian settlement and mobility patterns constitute a major discussion point in archaeological research.

Paleoindian archaeology in Minnesota mirrors the initial expansion of *Homo sapien sapiens* during the height of the Eurasian Upper Paleolithic periods into North America (Gilligan 2010: 16). The focal point of this migration is hypothesized to have occurred in a region termed Beringia, which extends from the Verkhoyansk Mountains in Siberian Russia to the edge of the now extinct Laurentide glacial ice sheet in western Canada (Hoffecker and Elias 2007). Traditionally, the shallow waters of the Bering Sea are argued to have served as the principal access point into the Americas when sea levels were reduced due to extensive glaciation that occurred during the Pleistocene Epoch (2.588 million to 12,000 B.P.).

The proposition that the Bering land bridge may have served as passageway for early human migrations was first suggested by the Spanish Missionary Fray Jose de Acosta in A.D. 1590 (Hoffecker and Elias 2007: 2). Although Spain had not yet explored these waters, de Acosta thought it was the only logical explanation for how Indigenous populations would have come to the Americas. Eric Hultén (1937) later coined the term “Beringia” to describe the Quaternary ecology of this unique region. The designation Beringia is named for the famous Danish explorer Vitus Bering, who, by way of Russian contract, was the first European to sail the strait in 1728.

The area associated with the bridge is termed the Bering-Chukchi Platform, which extends 1600 km from the Arctic Ocean to the eastern Aleutians (Hoffecker and Elias 2007: 5). Although the majority of this region is flat, the topography is punctuated by a few small islands, such as St. Lawrence Island and Wrangle Island. The majority of the shelf lies beneath less than 100 m of water and drops to 30 m near the Chukotka Peninsula, Russia. Over the 2.6-million-year course of the Quaternary Period, 100 Marine Isotope Stages (MIS [Oxygen 16/18 ratios]) have been documented, which show the repeated exposure and inundation of the land bridge constituting 50 glacial/interglacial oscillations (2007: 7–8). Initial human migrations into North America appear to be associated with the cold-snap brought on by the Younger Dryas (12,900–11,700 B.P.), which effectively lowered sea-levels by 50 m exposing the platform.

The archaeological record for humans expanding into North America is manifested at both interior and coastal sites. Wygal et al. (2022) recently reported on osseous technology dating to

13,600–13,300 cal B.P. from the Holzman Site along Shaw Creek in interior Alaska. These mammoth ivory rods are the oldest confirmed bone tools in the Americas. Early interior sites include that of Swan Point, Broken Mammoth, and Healy Lake, Alaska, which suggest population movements between the Laurentide and Cordilleran ice sheets between 13,000–11,000 B.P. (Holmes 2001; Cook 1996; Yesner 2001). Concurrently, a rapid coastal migration is also indicated at several South American localities, such as Monte Verde, which demonstrate potential evidence for groups moving by boat down the Pacific shoreline at approximately 15,000 B.P. (Dillehay 1989; Dixon 1999; Fladmark 1979).

Genetic work with mtDNA haplogroups in the Americas and Asia appears to confirm the archaeological evidence, showing simultaneous coastal/interior population movement occurring between 18,700 and 14,200 B.P. (O'Rourke 2009; Perego et al. 2009). Alternatively, although followed by much criticism, Bradley and Stanford (2004) suggest that the progenitors of Clovis, and perhaps other groups, were the product of Atlantic migrations associated with peoples of the Solutrean cultures in France. Current genetic evidence refutes this claim; however, the issue does highlight an important debate in Alaskan archaeology (O'Rourke 2009; Perego et al. 2009).

The Pleistocene history of Minnesota is long and complex with most of the state and surrounding regions being covered in glaciers between 18,000 B.P. and 11,000 B.P. (Manz 2019: 23). Glaciers did not fully recede until approximately 10,000 years ago, where only the southwestern and southeastern parts of the state remained unglaciated. A dominant feature following deglaciation was Glacial Lake Agassiz. This overlapped the northwest portion of the state and formed during the retreat of the Des Moines Lobe, which principally drained to the south via Glacial River Warren (Gibbon 2012: 38). As Lake Agassiz further retreated north, the modern Red River of the North began to form flowing towards the Hudson Bay. In terms of human occupation potential, the southern part of the state is likely the highest probability area to encounter archaeological sites, as it was unglaciated (Gibbon 2012: Map 2.1). Elk, mammoth, and extinct forms of bison (e.g., *Bison antiquus*) may have been hunted by Pleistocene Native Americans of this time frame in Minnesota; however, other resources were probably equally important.

Waguespack (2007: 69–70) highlights evidence for early migrations into North America that indicate hunter and gatherers may have been generalized foragers, as opposed to explicitly large game predators. Historically, the first evidence for the Paleoindian Period comes from New Mexico where archaeologists uncovered fluted projectile points in association with extinct megafauna at sites, such as Blackwater Draw (Cook 1927; Figgins 1927). These important early finds quickly placed the antiquity of humans on the mid-continent of North America at the end of the Late Pleistocene (Howard 1936). Much of the debate generated by these discoveries overly focused on the role mega-fauna placed in the subsistence economy of Paleoindian hunter and gatherers. This pattern is different than many of the interior localities dating prior to 11,000 B.P. (e.g., the Village Lake Site at Healy Lake in Alaska [Cook 1969]), which exhibit a broad-spectrum diet. Bison and Wapiti appear to be the predominant large game that were hunted during this early period; however, birds and other small mammals were also exploited (Yesner 2001).

Analogous patterns have been observed outside of Minnesota, including eastern Great Basin sites, such as Bonneville Estates Rock Shelter, which demonstrate a broad-spectrum diet occurring between 13,100 and 12,000 B.P. (Goebel 2007; Graf 2007: 103). The archaeological record from this site suggests the prehistoric inhabitants were participating in a mixed foraging

and hunting strategy. The identification of this trend in the Great Basin has led to the suggestion that this early phase be called the "Paleoarchaic" instead of "Paleoindian" in recognition of the markedly different subsistence strategies that were similar to later archaic groups (Graf and Schmitt 2007; Willig 1988; Willig and Aikens 1988). Realistically, the debate about whether early Paleoindians were generalized foragers or large game specialists likely rests "on the relationship between what could have been hunted and what was actually taken" (Waguespack 2007: 70; Waguespack and Surovell 2003).

In contrast to these views, Kelly and Todd (1988) take the position that early populations of hunter and gatherers entering into the North American continent were heavily dependent on terrestrial fauna, as opposed to plant resources, since this was a more reliable food source. They argue that the strategies employed by these foragers were starkly different than that of modern hunter and gatherers, in that groups were not operating in seasonally restricted spaces. An optimal foraging analysis for procuring large game has been conducted by Byers and Ugan (2005). Specifically, they identified variables that may have deterred Paleoindians from focusing exclusively on mega-fauna, including the large number of individuals needed for processing, difficulty in procuring game, and distribution of game within different environmental patches. The authors conclude that the phenomena of exclusive large mammal hunting likely only occurred in a "narrow range" of places where game was abundant and processing time was low, such as in the Great Plains (2005: 1625). Minnesota and surrounding areas may have encompassed by this narrower range, as suggested by Kelly and Todd (1988).

Continuing with the issue of broad spectrum versus predominant large game hunting has been problematic to the debate of humans entering into the North American continent. Guthrie (1990) has supported the notion that humans could have easily followed the wide trails of proboscideans across the land bridge. Haynes (2001) reasons that modern African elephants can serve as an analogy for understanding how Pleistocene hunters may have interpreted herd characteristics. Such behavioral patterns include 1) the speed, direction, and health of an elephant herd based on the distribution/content of dung, and 2) the relative size of the animals based on the track width. Elephants create a series of fixed and habitually used trails that would have allowed initial colonizers into interior Alaska as a means to systematically explore the landscape. Conversely, Yesner (2001: 317) sees the process of colonization into interior Alaska as involving a "push-pull" factor, presenting evidence for the existence of proboscideans in Siberia up to 9,000 B.P. This suggests that hunters would have been encouraged to remain in western Beringia for a longer period of time to procure this higher ranked resource. Foragers may have only episodically crossed the land bridge as eastward movement began to develop as the principal subsistence cycle.

A theoretical trajectory of incipient occupation into novel landscapes has been proposed by Beaton (1993) to describe the initial colonization of Australia (also see Yesner 2001). His model breaks down human entry into two categories: transient explorers and estate settlers. Beaton suggests that the settlement pattern associated with transient explorers would be lineal, conforming principally to significant geographic features, such as mountains, rivers, etc. This type of occupation may be associated with the earliest sites in Minnesota, which could be situated along the margins of major river corridors (e.g., Glacial River Warren). High mobility and small populations are necessary with the transient model, since groups are entering into an unfamiliar landscape leading to potentially high extinction rates. In contrast, estate settlers inhabit new lands in a more radial fashion since there is a greater degree of familiarity with the resources present. Kelly and Todd (1988) argue that immigrant Paleoindians would have needed

to switch territories frequently due to unfamiliar landscapes. This would have been an adaptive method to adjust to resource stress by either switching territories or adjusting the types of foods being consumed. In reality, the Early and Late Paleoindian Periods in Minnesota likely represented a combination of these alternating mobility strategies.

4.2.1.2 Minnesota's Early Archaeological Record

Clovis culture is commonly regarded as the first evidence of human occupation in Minnesota during the Early Paleoindian period. Its signature implement, the Clovis projectile point, is made from high quality lithic materials and has a central channel flake that extends part way up the proximal shaft of the tool (Frison 1998). Folsom is another Early Paleoindian technology that temporally follows Clovis during the Early Paleoindian Period. The Folsom point and type site are named after the city of Folsom, New Mexico, where a Folsom projectile point was recovered with the ribcage of the now extinct species of bison, *Bison antiquus* (Dobbs 1990). Its projectile point is typically made from high quality materials as well, with the central channel flake extending the entire length of the implement to the distal tip (Hofman 1995).

Clovis and Folsom projectile points were used to hunt now-extinct forms of game, including *Bison antiquus* and mammoths. Evidence for Early Paleoindian occupation in Minnesota is limited to isolated finds of projectile points. Clovis isolated finds (N=30) have been found in central and southeastern Minnesota, while Folsom isolated finds (N=20) are documented in the western and southern parts of the state (OSA 2019).

Anfinson (1997: 34) suggests the reason southwest Minnesota has produced limited Clovis evidence could be attributed to Pleistocene reactivation episodes of Glacial River Warren in the Minnesota River trench. Riverine site encampments were favored among early foragers, but these locations are quickly destroyed during flooding or other channelization events. The archaeological record has simply not survived for this period or is buried beyond conventional excavation methods.

Morrow et al. (2016: 125 [Fig. 5.9]) identifies that Clovis technology is present in Murray County (~80 miles northwest from the Project) albeit in the form of isolated projectile points. An example from the Harris Darling Collection presents a heavily curated Clovis point made from an unidentified chert or chalcedony. The material, to this reader, appears slightly oxidized, which may be from heat treatment or naturally occurring fire. The morphology of Clovis projectile points in Minnesota may represent a lithic adaptation from similar types in Wisconsin (e.g., Gainey). Two additional Clovis points of Cedar Valley Chert are shown from the Gregg Nelson Collection, in Blue Earth County, the county directly north of the Project.

Morrow et al. (2016: 129 [Fig. 5.11]) show examples of Folsom technology from Faribault County. These consists of isolated projectile points that are made from an unidentified gray chert material (MBISP Artifact #12428 and Artifact #07201). Each point demonstrates Folsom patterns, such as the central flake, along with other characteristics including possible heat treatment to the barbs of MBISP Artifact #07201.

The Late Paleoindian Period in Minnesota is characterized by an unfluted variety of projectile points similar to earlier lanceolate forms associated with the Plano Cluster (Dobbs 1990). Alberta, Agate Basin, Eden, Hell Gap, and Scottsbluff are varieties of projectile points found during this time, which are often associated with bison kill sites. Late Paleoindian sites are significantly more common in Minnesota, with over 200 being recorded. Browns Valley Site in

western Minnesota and the Bradbury Brook Site in east-central Minnesota are important Late Paleoindian localities in the state (Morrow et al. 2016; OSA 2019).

The discussion will focus on the Browns Valley Site (21TR5) due to its proximity to the Project, and for the quality of Late Paleoindian data. The site is located next to the town of Browns Valley, Minnesota, and is 185 miles northwest of the Project in Traverse County. Browns Valley contains a possible Late Paleoindian burial dating to approximately 9,000 B.P. (Morrow et al. 2016: 125). Anfinson (1997: 32) previously discusses two radiocarbon assays from bone samples (9160 +-110 B.P. and 9049 +-82 B.P.) that demonstrate its antiquity as one of the oldest burials in North America. The site also contains a significant Plains Village component with circular fortifications (See Plains Village discussion below).

The grave consists of a male aged 35–39 in a U-shaped, red-ochre stained depression that was found with a possible lithic cache of six projectile points (Anfinson 1997: 30–32; Gibbon 2012: 56; Morrow et al. 2016: 157). Commonly called Browns Valley projectile points, this implement is lanceolate-shaped with convex margins and a ground concave base that can include basal thinning flakes onto the medial-proximal biface surface. The points found at the type site were made from KRF whose primary source area is western North Dakota. Smaller KRF cobbles can be found in regional glacial lag, often reduced by bipolar methods.

Browns Valley points are a unique Late Paleoindian tool type found in the PLR of southwest Minnesota and Faribault County. The distribution of these points broadly follows the western Mississippi River Valley from Minnesota to Mississippi (Morrow et al. 2016: 157). Locally, Browns Valley points have been found in Murray County surface collections, and other examples are present, though limited, from Aitkin and Pine counties in east-central Minnesota. The type site itself in Traverse County contains the most biface examples from a single collection (N=6).

Dalton Tradition (10,500–9,500 B.P.) implements are more common to the Central Mississippi Valley and represent a transitional lithic type (e.g., Dalton, Hi-Lo, and Quad points) from other Late Paleoindian tool forms (Buhta et al. 2017: 77; Morrow et al. 2016: 140). Dalton projectile points are a medium-to-large sized spear or dart that has a lanceolate/auriculate body, sometimes serrated, and often is proximally ground along its concave base. Many examples show evidence for beveling or resharpening on the margins of the projectile point. Flake tools, end scrapers, side scrapers, and gravers comprise implements found in Dalton assemblages.

Southern Dalton assemblages contain unique tools that include stone drills/awls, adzes, shaft abraders, and edge-abraded cobbles (CALS 2020). The proliferation of adzes in the archaeological record show that woodworking became an important activity (e.g., canoe production, structures). Cemeteries also start to occur as can be seen south of the Project at the Sloan Site in Green County, Arkansas (Morrow 2020). Approximately 28 to 30 people were buried with some including large ceremonial items called “Sloan Bifaces,” which mirror the form of Dalton points (Morse 1997). Overall, these trends in site patterning signal an increase in social complexity.

Expanding diet breadth in Dalton assemblages suggests that deer, waterfowl, fish, turkey, nuts, berries, and other small mammals (rabbits, squirrels, and raccoon) were likely targeted. Morrow et al. (2016: 140) note that from “one to six points have been found in Aitkin, Anoka, Brown, Clearwater, Freeborn, Fillmore, Goodhue, Hennepin, Houston, Itasca, Koochiching, Lac qui Parle, Meeker, Morrison, Ramsey, Rice, Roseau, and Wabasha Counties” in Minnesota. The Dalton Tradition is principally defined from excavations at The Twin Dalton Sites (23SL591 and

23SL766), Big Eddy Site (23CE426), and Graham Cave (23MT2) in Missouri (Chandler 2001; Martens 2010; O'Brien and Wood 1998). Evidence for Dalton in Faribault County is limited to isolated finds. Dalton points in Minnesota are often made from Burlington Chert, a material sourced farther south.

4.2.1.3 Archaic Period (9,000 to 3,000–2,500 B.P.)

Approximately 9,000 B.P., a new mode of subsistence strategy began to emerge in the archaeological record across North America (Emerson et al. 2011). The general pattern of this change is the replacement of lanceolate spear-points used during the Paleoindian period, and the adoption of atlatl technology with the presence of groundstone implements. Dalton lithic technologies may represent a technological transition (Buhta et al. 2017: 77). This represents a fundamental difference from earlier forager behavior with a diversification of economy that incorporated more plants into the diets of Native Americans. The Archaic Period in Minnesota began substantially later than other regions starting around 9,000 B.P., principally in the southeastern part of the state (Anfinson 1997; Gibbon 2012). Important Archaic innovations include the use of grooved mauls and axes, canine domestication, copper tools, and incipient horticulture. The Archaic Period in Minnesota is poorly known; however, it comprises its longest temporal frame of human occupation.

Xeric environmental conditions began around 9,000 B.P. with the spread of prairie grassland across most of southern and western Minnesota (Anfinson 1997). Many of the lakes created as a product of Pleistocene glaciation started to dry during this time, leading to a reduction in game (e.g., bison, fish, birds, etc.) dependent on these resources. These environmental transformations promoted a diversification in hunting strategies, which differed dramatically from the Paleoindian period.

Minnesota experienced a wide variety in changing environmental conditions based on its different ecotones across the state during this time. Consequently, the traditional models of Early, Middle, and Late Archaic found elsewhere in North American do not directly apply. These different environmental regimes necessitated a variety of adaptive strategies to successfully subsist. Archaeologists have defined these internal periods within the state as follows: Lake Forest Archaic, Shield Archaic, and Riverine Archaic, and Prairie Archaic (OSA 2022).

The temporal period known as the Lake Forest Archaic accompanies archaeological sites from about 7,950 B.P. in much of central and northern Minnesota (Anfinson 1997; Gibbon 2012). Prior to this period, most sites in this region would have mirrored those found in grasslands, whose economy focused on bison hunting. As a result, the Prairie Archaic pattern would have been prevalent during the earliest periods based on the similar environment. The expansion of woodlands during the mesic environments of the post-glacial thermal maximum led to a greater diversification of both plant and animal species. The Mississippi River corridor also served as a conduit for archaic groups from other regions, which ultimately influenced the potential spread of technologies and new lifeways into Minnesota. The site of Petaga Point in Kathio State Park is one of the best examples of the Lake Forest Archaic Period and contains evidence of Old Copper culture. This is approximately 200 miles north of the Project.

The Shield Archaic Period characterizes sites from far northeastern Minnesota, whose assemblages are the product of Native American adaptations found farther north in Canada (i.e., Canadian Shield). An important characteristic of Shield Archaic sites is the lack of groundstone tools and copper artifacts found. often associated with archaic groups elsewhere in Minnesota (Anfinson 1997; Gibbon 2012). Shield Archaic sites in Canada are typically found near lakes and

rivers where caribou and other migratory game may have crossed. Similar to other northern adapted populations, these groups may have utilized specialized technologies, such canoes, snowshoes, toboggans, bark and skin-covered shelters, bark containers, and efficient winter clothing. The Fowl Lake Site is an important Minnesota site near the Canadian border that exemplifies the archaeological record of this period.

The Riverine Archaic period is found at sites located along the lower Mississippi River and other drainages in southeastern Minnesota (Anfinson 1997; Gibbon 2012). The river valley bottomlands provided a rich and varied source of animals and plants that were exploited by Native American populations. Common riverine resources included aquatic tubers, fish, waterfowl, mussels, deer, elk, and bison may have been taken in the uplands. The fertile floodplains also provided suitable locations for horticulture where plants, such as squash and various early cultigens, were grown. The King Coulee Site in Wabasha County is one of the most complete archaic sites from this region and dates to between 3,450–2,450 B.P. A slate gorget, mussel shells, squash seeds, and stemmed projectile points were recovered during the excavations (OSA 2019). Wabasha County is approximately 100 miles northeast of the Project.

4.2.1.4 Prairie Archaic in Faribault County

The Prairie Archaic Period is found across the western and southern parts of Minnesota, representing an adaption to grassland environments. Key game hunted were bison; however, subsistence strategies became diversified resulting in a range of new technologies to process plant and hunt/trap varied animals. An important locality defining this time is the Itasca Bison Site (21CE1) in Clearwater County, Minnesota. The site dates between 8,520 and 7,790 B.P. and was possibly occupied over two separate stages (Widga 2014). Itasca yielded the remains of bison (N=16), but also contained another pattern for expanding diet breadth in separate species counts of mammals (N=17), birds (N=9), fish (N=7), and turtle (Buhta et al. 2017: 19). These counts have recently been questioned in terms of the degree of faunal diversity, currently suggesting a more limited number (cf. Widga 2014). The most common artifact forms were side-notched projectile points, knives, scrapers, choppers, grinding stones, hammerstones, and perforators. Other important localities from the Prairie Archaic Period include the Granite Falls Site, the Cherokee Sewer Site, and Canning Site. A later regional variation of the Prairie Archaic are the presence of copper tools in the northwestern part of the state, but few examples are in the southwestern areas (Anfinson 1997).

Buhta et al (2017: 16) identify three Archaic sites in Minnesota's Archaeological Region 1 (Southwest Riverine) and 182 Archaic sites in Region 2s (Prairie Lake [South]) (see Gibbon et al. 2002). Buhta et al. (2017: Figure 7) present a map with the plotted location of approximately six Archaic sites in Faribault County. The majority of the Archaic data specific to Faribault County is mainly limited to isolated projectile, so any inference must be drawn from regional examples.

This period represents a climax in pedestrian bison hunting across the PLR. Numerous variations of side-notched projectile technology exist in the Early Archaic including forms such as Graham Cave, Simonsen, Raddatz, Godar, Reigh, Osceola, Matanzas, and Oxbow forms. Morrow et al. (2016: 121) note that many points from the Archaic have variations similar to "two or three different types." The fundamental characteristic—side notching—is understood here to represent a broad lithic adaptation encompassing many Native American groups practicing similar subsistence strategies. From a global perspective, the human capacity for variation in projectile point style as an ethnic marker is one not just contained in flaking or metal work, but also in its associated accoutrement.

For example, Wiessner (1983) documented a broad range of projectile point characteristics among the !Kung, G/wi, !Xo, and Nharo of the Kalahari San in Botswana, Africa. Projectiles points for these foragers are unifying cultural symbols expressing individualism, language groups, poison delivery methods, folklore (eland mythology), and were exchange items connecting larger populations. In Minnesota, projectile point morphology should be cautiously used to identify specific cultural groups during a period with significant population movement and an unknown ethnographic context.

The Jeffers Petroglyph Site (21CO3) located 51 miles northwest of the Project contains various images of atlatls and projectile points pecked into an expansive red quartzite ridge in Cottonwood County (Buhta et al. 2017: 34). Images of atlatls, stemmed points, and tanged points indicate that some of the representations could be from the Archaic period (Anfinson 1997: 44). Lothson (1976) suggests the petroglyphs are associated with the practice of hunting magic, performance of sacred ceremonies, and documenting important events. Over 5,000 individual glyphs have been documented at Jeffers, which Lothson subdivided into five major classes including human, tool/weapon, Thunderbird, animal, and geometric forms. There is an absence of images depicting contact-period items, such as horses or guns, suggesting all of the petroglyphs pre-date A.D. 1750.

A key regional example of the Archaic transition close to southwestern Minnesota can be found 97 miles southwest of the Project near Cherokee, Iowa, along the Little Sioux River. Horizon II of the Cherokee Sewer Site (13CK405) contains a bison bone bed layer with an estimated 15–30 individuals suggesting a late winter kill site (Anfinson 1997: 38; Gibbon 2012: 75). The assemblage is also important for the diversity of other animal remains present including skunk and rabbit. Lithic artifacts were predominantly made from Tongue River silica consisting of projectile points, end scrapers, choppers, and burins. Bone tools were identified. This type site highlights the diversification of subsistence strategies being practiced during the Early Archaic.

The Granite Falls Bison Site (21YM47) is located approximately 110 miles northwest of the Project in Yellow Medicine County. It is a well-dated Early Archaic bison processing encampment (6390+-110 and 6840+-120 B.P.) with immature specimens suggesting late fall or early winter site occupation (Anfison 1997: 36). Tongue River silica is an important lithic material with artifacts including debitage, side-notched projectile points, and a large ovate biface. This site signals hunting complexity where it is hypothesized bison (*Bison occidentalis*) were driven into bedrock basins and trapped against the bedrock walls before being dispatched. Granite Falls Bison Site demonstrates some of the earliest regional evidence for emerging foraging economies in the Archaic.

A similar assemblage has been excavated at the Goodrich Site (21FA36) in Faribault County (Anfinson 1997: 36–37). Artifacts consisted of stone axes, mauls, scrapers, and bison bone indicative of a seasonal kill site. Parallels have been noted between these artifacts and those excavated at the Cherokee Sewer Site.

There is evidence for mortuary practices during the Prairie Archaic near the PLR. The Turin Site (31MN2) is located in western Iowa 150 miles southwest of the Project. This inhumation was identified in a gravel pit with four individuals buried flexed position including one covered in red ochre. Grave goods were comprised of an *Anculusa* shell bead necklace and side-notched projectile points (Anfinson 1997: 39).

4.2.1.5 Woodland Tradition (3,000 B.P. to 950 B.P.)

Substantial cultural changes began to occur in southwestern Minnesota approximately 3,000–2,500 years ago, with Native American adaptations mirroring broader trends across the southern and eastern United States (Arzigian 2008). This timeframe, known as the Woodland Period, is marked by the presence of burial mounds, pottery, bow and arrow technology (ca. 1,450 B.P.), and intensive plant cultivation. Archaeological settlement patterns show Native American groups beginning to aggregate into larger populations along lakes, rivers, and associated drainages. Woodland archaeological sites are often broken into one of a classic tripartite temporal division of Early (3,000–2,150 B.P.), Middle (2,150–1,450 B.P.), and Late Woodland (1,450–950 B.P.) Periods (Emerson et al. 2008).

Traditionally, variations in the Woodland Period across time and space are argued to derive from broader influences that shaped significant trends in cultural practices. These interaction spheres include the Adena (Early Woodland Period), Hopewell (Middle Woodland Period), and Mississippian (Late Woodland Period) Cultures (Anfinson 1997; Gibbon 2012). While these divisions work well for other regions of North America, they do not neatly apply to archaeological sites in southwestern Minnesota (Arzigian 2008).

Major Woodland complexes in the various regions of the state include Laurel, Brainerd, and Blackduck (northern Minnesota); Malmo, St. Croix, Onamia, and Kathio (central Minnesota); Fox Lake and Lake Benton (southwestern Minnesota); and La Moille, Howard Lake, Sorg, and Effigy Mound (southeastern Minnesota) (Arzigian 2008). Pottery is an important distinguishing characteristic of these complexes, which are commonly named for the associated type site where they were first discovered. Ceramic vessels range in form from globular to conoidal with shell or sand grit as temper, and designs across the body (e.g., net impressions, patterned incisions). Lithics during this timeframe shows a preference for smaller projectile points utilized principally in bow and arrow technology.

A hallmark characteristic of the Woodland Period in Minnesota is presence of burial mounds, of which 12,000 have been recorded in the state (OSA 2019). The areas surrounding Red Wing, Lake Minnetonka, and Mille Lacs Lake have the highest concentrations of burial mounds. Many of these structures have been destroyed due to historic and modern development.

The subsistence strategies of Woodland groups in Minnesota varied widely based on the type of resources available. Wild rice was central to groups living in the northeast quarter of the state, which was husked in excavated pits and parched in ceramic vessels (Arzigian 2008). Other resources hunted or gathered included deer, fish, and various plants, such as maple sap for sugar. Farther west, around the Red River Valley and southern Minnesota, bison continued to be important as they were in the Archaic Period (OSA 2019). The “Three Sisters” of squash, beans, and corn were grown in small garden plots, which were further supplemented with other resources (e.g., fish and aquatic mammals).

4.2.1.6 Archaic Transition and Woodland Period in Faribault County

In the Project Area, the environment became cooler and moister around 4,000 to 5,000 years ago leading to an expansion of woody vegetation and the movement of bison herds farther west (Buhta et. 2017: 14). Referred to as the Mountain Lake Phase (5,000–2,200 B.P.), this long period of time represents the terminus overlap of the Archaic and subsequent Woodland. Subsistence strategies formed a “lake-oriented habitation pattern” where archaeological sites are found commonly on lacustrine islands and peninsulas (Anfinson 1990; 1997: 42–47). Foragers procured a blend of upland and aquatic resources but were more tethered to the landscape than

previous periods. Lanceolate projectile points exist during this time frame with some similarities to Plano stemmed varieties. These are often of poorer quality in production made from local materials. There is little evidence of horticulture tools (e.g., groundstone) or ceramic use across the PLR during the Mountain Lake Phase. Some copper technology becomes evident, often restricted farther east.

The Mountain Lake Site (21CO1) is a type locality for this period located approximately 40 miles northwest of the Project in Cottonwood County, Minnesota (Anfinson 1997: 42–47; Holley and Michlovic 2013: 51). Located on an island in Mountain Lake, this site produced bison, muskrat, small mammals, fish, turtle, and waterfowl remains suggesting a diverse diet breadth (Anfinson 1997: 45). Other Mountain Lake Phase sites surrounding the Project include Pedersen (21LN2), Fox Lake (21MR2), Big Slough (21MU1), and Arthur (13DK27). The Hilde Site (39LK7) in the PLR of South Dakota has seven to 10 graves that consisted of 17–18 individuals in primary and secondary burials dating to the Mountain Lake Phase.

The first appearance of ceramics in southwestern Minnesota coincides with the Fox Lake Phase (2,220–1,250 B.P.), which continues with the trend of occupation occurring on or near lakes (Arzigian 2008: 63). Arzigian (2008: 63) identified 52 Fox Lake sites in the PLR as a general density estimate for the region. There is an absence of mounds in the PLR of the Fox Lake Phase, while mounds are common elsewhere throughout Minnesota. Conoidal and semi-conoidal ceramics with grit and shell temper were excavated at the Fox Lake Site (21MR2) near Sherburn, Minnesota, located approximately 30 miles southwest of the Project, along with a possible fire pit, scrapers, knives, projectile points, mano and two celts (Anfinson 1997: 47). Ceramics from this phase resemble other Early Woodland types defined in southeastern Minnesota, such as LaMoille Thick and those with Havana influences. Trailing and cordmarking in addition to bosses and wrapped stick impression are common design elements. Anfinson (1997: 56) notes that sand temper seems more common at Early Woodland sites and crushed rock is preferred during later periods. Fox Lake projectile points consist of stemmed, side-notched, corner-notched, and triangular unnotched commonly made from Tongue River silicate (Anfinson 1997: 66). It is possible smaller varieties of projectile points represent that incipient adoption of the bow and arrow in the region. Scrapers, knives, drills, flake tools, and choppers are also present.

Components of the Big Slough Site (21MU1) in Murray County are an important regional example of the Fox Lake Phase. This site produced bison, muskrat, dog/wolf, turtle, and bullhead, deer, beaver, badger, raccoon, skunk, gopher, duck, goose, crane, owl, northern pike, and mussels (Arzigian 2008: 69). Bone artifacts consisted of an awl, bone beads, worked mammal long bones, bison metapodial flesher, and a polished hawk humerus. Local chert, chalcedony, and silicified sediment common, but KRF and some obsidian are present. The Pedersen Site (21LN2) and Arthur Site (13DK27) are two other sites important for understanding the Fox Lake Phase in the PLR. The Alton Anderson Site (21WW4) 30 miles northwest of the Project is a possible Fox Lake burial site in Watonwan County, Minnesota. Thirty individuals were excavated in two discreet areas, a single burial event, comprised of young adults and children in flexed burials positions. Ochre and bone-stone tools were present including elk teeth.

After the Fox Lake Phase, Anfinson identifies the beginning of the Lake Benton Phase (1,250–750 B.P.) as representing the decline of Hopewell influence, a continuation of intensive pedestrian bison hunting, new ceramic forms, and the presence of bow and arrow technologies.

This corresponds to the Late Woodland elsewhere in Minnesota. Sites from the Lake Benton Phase are commonly located islands, peninsulas, or isthmuses, which may have served as protection from fires (Arzigian 2008: 75). The Pedersen Site (21LN2) is located on a peninsula 113 miles northwest of the Project in Lake Benton. This is a type site for the Lake Benton Phase in the region (Holley and Michlovic 2013: 47–49). Pedersen has produced samples with radiocarbon dates ranging from 705 +-80 B.P. to 1135 +-90 B.P. (Anfinson 1997: 85).

Burial mounds become more common in the PLR during the Lake Benton Phase consisting of circular and linear forms. Lithic technology is similar to Fox Lake with a continuation of smaller side-notched, unnotched triangular, and corner-notched projectile points made from local materials (Anfinson 1997: 80). Crushed rock is used as a temper in ceramics. Vessel forms are often sub-conoidal with flaring rims, vertical cordmarking, dentate impressions, and punctuate decorations. Anfinson (1997: 77) identifies that Lake Benton ceramics share similarities with those found in the St. Croix-Onamia area of Minnesota. Vessels tend to have thinner walls than in other periods.

4.2.1.7 Mississippian, Oneota, Plains Village, and Psinomani Traditions (750–950 B.P. to European Contact)

The Woodland Period ends throughout most of Minnesota around 950 B.P., with the exception of northern portions of the state (Arzigian 2008; Gibbon 2012). The dominant regional influence was the site of Cahokia in the American Bottom near the modern city of St. Louis, Missouri on the Mississippi River (Pauketat 2009). This influence is most clearly seen in archaeological sites near Red Wing, Minnesota, which contain Cahokian-style ceramics, large palisaded villages, and evidence of corn horticulture. The presence of square earthen mounds may reflect Cahokian socio-religious belief systems. In Minnesota, the manifestation of this interaction is called the Silvernale Phase (Gibbon 2012).

A widespread cultural complex called Oneota in Minnesota is concurrent with the regional influences of Cahokia, lasting from approximately 950 B.P. until the time of French contact (Gibbon 2012). These mobile groups shared Middle Mississippian traits that included corn horticulture and shell-tempered ceramics (e.g., globular vessels with high rims), but lacked permanent structures, such as burial mounds. Oneota is manifested in different types called Orr (southeastern Minnesota), Blue Earth (south-central Minnesota), and Ogechie (central Minnesota). Siouan languages were spoken at the time of French contact (OSA 2019).

Plains Village groups from the region of the Missouri River in the Dakotas began to interact with the Oneota in western Minnesota after 950 B.P. (Anfinson 1997; Ahler and Kay 2007). These groups hunted bison, practiced corn horticulture, and lived within earth-lodges protected within palisaded forts (e.g., Double Ditch Site in North Dakota). Globular shaped ceramic jars with crushed rock temper are a hallmark technology of this period.

Psinomani groups are believed to be the ancestors of the modern Dakota people, who lived in east central Minnesota (Gibbon 2012). The principal ceramic type associated with this group is Sandy Lake, whose form is more similar to a bowl rather than the globular jars of Oneota varieties. There is evidence of blended ceramic styles with Oneota Native Americans.

4.2.1.8 Late Precontact in Faribault County

Anfinson (1997: 90–112) utilizes Great Oasis, Cambria, Big Stone, and Blue Earth phases to characterize the likely palimpsest of cultural activity occurring in the PLR during the late precontact. (See also Holley and Michlovic 2013.) The Great Oasis Site (21MU2) is a type locality

in Faribault County near the Project. Ceramics from here often have trailed lines with numerous motif types including diamonds and triangles. Projectile points are small triangular notched and unnotched varieties. Other tools include end scrapers, end hoes, knives, drills, and choppers. Lithic items are commonly made from local materials, but KRF is present to some extent. Artifact use is diverse including awls, chisels, quill flatteners, shaft wrenches, antler-tine flaking tools, bison scapula hoes, pendants, shell beads, and dippers. Animals exploited were bison, dog/wolf, beaver, lynx, striped skunk, muskrat, raccoon, pocket gopher, red fox, mink, badger, white-tailed deer, fish, and birds. Great Oasis produced radiocarbon assays dating from 975 +-65 B.P. and 1050 +-60 B.P. Houses are not identified in the PLR, nor are there any fortifications. A key feature of many Great Oasis Phase sites is the presence of maize kernels, sunflowers and/or squash, general indicators of a horticultural system.

The Cambria Site (21BE2), type site for the Cambria Phase, is located northwest of Mankato (Anfinson 1997: 96) It has been previously suggested to be part of a Cahokia-based trade network operated through Red Wing, Minnesota (Johnson 1986). This exchange system included the movement of bison meat, hide, clothing, exotics, and horticultural products. It yielded radiocarbon dates from 815 +-125 B.P. and 775 +-130 B.P. Ceramics are often globular in form and grit-tempered with constricted necks, pronounced shoulders, and smooth surfaces. The diversity of artifact and faunal remains in similar to Great Oasis sites. Grinding technology is varied also consisting of grooved stone mauls, celts, hammer-stones, grinding stones, and slab abraders. Characteristics of Cambria settlement patterns include: 1) large villages on the Minnesota River; 2) small sites on lakes and interior rivers; 3) small villages near large villages; and 4) burial sites.

Small, fortified villages become more common in the PLR of the Big Stone Phase (Anfinson 1997: 104). These include examples like the Hartford Beach Site (39RO5), Shady Dell Site (21TR6), or the village component of the Browns Valley Site (21TR5), which contain artificial ditches and bastions. Hartford Beach is also protected by steep slopes and produced dates ranging from 830+-70 B.P. and 650 +-70. Most of the fortified sites close to the Project can be found near the borders of South Dakota, North Dakota, and Minnesota. KRF becomes more common as a lithic material type suggesting regional influences from the west, specifically in North Dakota. The variety of artifacts identified in Big Stone Phase sites can include corner-notched/triangular points, end side scrapers, drills, utilized flakes, grooved mauls, sandstone hoes, choppers, nutting stones; bone bison scapula hoes, metapodial flesher, and bone awls. Bison seems to be more important than horticultural production.

Overlapping the PLR, the Blue Earth Phase includes areas along the Little Sioux River in northwestern Iowa, the Blue Earth River in southcentral Minnesota, and the St. Croix-Mississippi rivers in southeast Minnesota and southwestern Wisconsin (Anfinson 1997: 112–114). Ceramics are typically shell-tempered and smooth surfaced. Sites in Faribault County are important for understanding this time period in the region. The Humphrey Site (21FA1) and Vosburg Site (21FA2) along Center Creek serve as key examples. Previously discussed sites such as Great Oasis (21MU2), Big Slough (21MU1), Pedersen (21LN2), and Mountain Lake (21CO1) all contain Blue Earth components.

Complete vessels found at these sites consist of round bottomed, globular jars with handles that may also be grit tempered. Vessel rim interiors are often decorated with tool impressions or trailed lines that may be present on the shoulders. Chevron designs, vertical lines, and circular nodes are other design elements seen in ceramics. Lithics and groundstone technologies consist

of unnotched projectile points, end scrapers, manos, abraders, and celts (Anfinson 1997: 112–117). Toolstone is made from fine gray chert, oolitic chert, white chert, and quartzite with less KRF use. Bone tools are scapula hoes, antler picks, awls, split beaver incisors, barbed harpoons, and bone tubes. Bison appear to be less prevalent, but other animal species are represented (e.g., beaver, elk). Horticulture is common with maize, beans, and sunflower forming cultigens. Anfinson (1997: 119) notes that many of the radiocarbon dates for this period fall between 950 B.P. and 440 B.P. The is little for European trade goods or burials in the Cambria Phase.

4.2.2 Contact Period and Post-Contact (A.D. 1650 to Present)

The Project is located in the northwest quadrant of Faribault County, which is set along the southern boundary of Minnesota. The Project is set in Prescott Township, but the westernmost portion is in Verona Township. It is southeast of the City of Winnebago, and north of the county seat Blue Earth.

4.2.2.1 White Exploration and Settlement of Minnesota Territory

The Wahpekute Dakota tribe occupied the area that became Faribault County when the first Europeans arrived. Dakota tribes "occupied a vast territory, including nearly all of Minnesota, the Dakotas and a region of country west of the Missouri the Rocky Mountains, and northward to the British Possessions." Each band "had their own separate territory, or hinting rounds, but their claims of territory were often indefinite and conflicting" (Kiester 1896, 30).

The Fur Trade in Minnesota involving Europeans and Native Americans first started in the early 1600s and marked the beginning of contact between these two populations. The historical implications of this interaction were felt in numerous ways both economically and with great social consequence (e.g., smallpox). Throughout this early period up until the 1850s, fur drove much of the European exploration of Minnesota leading to the establishment of American settlements, including the Fort Snelling military post in 1824 (Hansen 1918). In the first half of the nineteenth century, Ojibwe and Dakota Indian tribes in what would become Minnesota were coerced into signing several treaties that ceded vast swaths of their lands to the US government, including 100,000 acres of land at the confluence of the Mississippi and Minnesota rivers in 1805 and eventually "all their land east of the Mississippi" in 1837. Following these cessions, the territory was traversed and mapped by multiple expeditions for eventual settlement (MNHS nd).

There were several expeditions into the region. French explorers Marquette and Joliet were among the first Europeans to reach the headwaters of the Mississippi, entering Minnesota in 1673 (Kellogg 1917). Canadian-born Jean-Baptiste Faribault traversed the area in the early nineteenth century as an explorer and trader. He traded with Dakota at the Des Moines River to the west and later settled in Prairie du Chien, Wisconsin and established a trading post there. Faribault at least "once visited this region of country. It is stated in the history of Rice county, Minnesota, that he, 'in the spring of 1833, followed the Indians south, to their hunting grounds, located in the present county of Faribault" (Kiester 1866, 37). In 1836, French geographer Joseph Nicolas Nicollet (1786-1843) explored the Mississippi River to its source at Lake Itasca. With the "backing of the U.S. Army Corps of Topographical Engineers" he led expeditions in 1838 and 1839 "to explore the triangle of land bordered by Canada and the Mississippi and Missouri Rivers." His endeavors were also supported by the American Fur Company and private stakeholders. He produced topographical and hydrographical maps of the Upper Mississippi River Basin, as well as documented botanical and geological specimens throughout the region" (Smithsonian nd). Nicollet's maps were published in 1842; "he gave names to many lakes and

physical features or adopted those which were current," and area in which is now called Faribault County was labeled 'Sisseton Country' on his map (ibid).

The "whole of [southern] Minnesota" remained Indian territory and unsettled until the mid-1850s, but for many years before that, trappers operated in the area. The Minnesota Territory was created in 1849. The Treaty of Traverse des Sioux in 1851 resulted in the cession of 21 million acres of Sisseton and Wahpeton Dakota bands land to the US government. It included all of the land in southern and western Minnesota Territory and smaller portions in Iowa and South Dakota. Following this and the 1851 Treaty of Mendota between the United States and the Sioux tribes of Minnesota (Mdewakanton and Wahpekute), an influx of white settler-colonists to the Minnesota Territory forced Indians from their ancestral lands and confined to reservations.

4.2.2.2 Establishment and Development of Faribault County

Faribault County was founded in 1855 and organized as a territorial county in 1856. It was named after French trader and explorer, Jean-Baptiste Faribault. At the time, there were 82 residents in the county, 15 of whom lived in Blue Earth, which was named the county seat. Blue Earth was settled in 1855 at the confluence of the east and west branches of the Blue Earth River. It was platted in 1856 and organized in 1858. Postal service began in 1856, and the Chicago, St. Paul, Minneapolis, and Omaha railroad established a station there. It became a village in 1879 and was incorporated as a city in 1899.

The first permanent settler of Faribault County was Moses Sailor. Born in 1808 in the state of Ohio, he was occupied as a farmer. In 1832 he married and moved to Indiana. He moved his family to Chickasaw County, Iowa in 1854 but "finding that the country there had already been mainly taken up [and there] 'not being new enough to suit his pioneer tastes,' the following spring they moved further north into the Minnesota Territory. He claimed land and settled near the west branch of the Blue Earth River (Kiester 1896, 37-38). Upon establishing his homestead, Sailor began farming and planted corn and potatoes on a 5-acre plot. The "corn produced plenty of 'roasting ears,' and fodder sufficient for one horse and a dozen hogs during the succeeding winter." After "getting in his crop, he proceeded to erect a log house." For many years, the home "was once the headquarters of the county— the only hotel, or stopping place, in a vast region for some time — the first resort of newcomers — the scene of many a hospitable entertainment and of many a frontier dance and social gathering in the early days." From this homestead, Sailor traded tobacco, sugar, and pork with "many Indians, sometimes as many as two hundred, or three hundred, in a company." The "country was full of small bands of roving Indians, who were engaged in hunting and fishing and sometimes on the warpath, [but they] were always peaceable and well disposed towards him" (Kiester 1896, 40).

Following Minnesota's establishment as a territory and the treaties that removed Indians from their lands, the first wave of settlement to southern Minnesota began in 1856 and consisted mostly of "New England Yankees," American-born White people moving from eastern states, but nearly ceased within a year due to the financial Panic of 1857 (LOC nd). Additionally, the "winter of 1856–7 was almost the longest and hardest ever experienced in the Northwest" as the "snow and cold started early in November" and "spring did not come until the last of April" (Hughes 1857, 270). In March 1857, a Wahpekute band of Santee Sioux carried out the Spirit Lake Massacre in Iowa at Spirit Lake, Lake Okoboji and along the Des Moines River. Indian tribes were "already ill disposed toward the whites because of the appropriation of their lands" and following the "cold and hunger suffered [...] in such a winter," they sought retribution for a series of provocations and failed promises by the US government and local White settlers (ibid,

269). The massacre resulted in the deaths of more than 30 White people. The threat proved to be a short-lived deterrent for White people from settling in the region. As more areas were ceded from Indian control, tribes were forcibly removed from the lands. A month after Minnesota gained statehood in 1858, "a group of Dakota traveled to Washington, D.C. to discuss their reservation," but were ultimately "pressured to cede the lands on the north side of the Minnesota River." Following the U.S.-Dakota War of 1862, "the Dakota were forced to give up all their remaining land in Minnesota, and the U.S. government canceled all treaties made with them" and they were eventually forcefully exiled from the land onto reservations (MNHS nd).

In 1856, the first census of the county was conducted, and 689 residents were counted. It was "merely an enumeration of the inhabitants [and] no other statistics were taken. (Kiester 1896, 79). The 1860 census included the birthplace of residents, and most of the county's residents that year were American- or Canadian-born. Other than Minnesota, many people were born in New England on the east coast, as well as Illinois, Wisconsin, and Ohio. Of the foreign-born residents, most hailed from Prussia and other Germanic states, as well as Ireland and Norway (Keister 1896, 118). The 1860 Census recorded 1,335 people in the county, which ballooned to 9,940 by 1870. Its population reached was 13,016 in 1880; 16,708 by 1890; and 22,055 in 1900. Faribault County's population declined slightly to 19,949 in 1910 but grew from 20,998 in 1920 to its peak of 23,941 residents in 1940 (US Census).

In the 1940s, the onset of World War II increased the number of manufacturing jobs and other employment opportunities in larger cities, and many people began abandoning their farmsteads and small towns for opportunities in urban areas. Suburban developments in the second half of the twentieth century increased affordable, modern housing opportunities near urban centers. In each decade after World War II, Faribault County population decreased, falling to 23,685 in 1960. Its population fell below 20,000 before 1980, and there were fewer than 15,000 residents by 2010. As of 2020, Faribault County had a population of 13,921 people (US Census).

4.2.3 Architecture

The first homes of settlers were primitive. The first dwellings were tents, sod shanties, or crude structures, and most settlers established and harvested their farm's crops before constructing a permanent home. The sod shanties were later replaced by log cabins. Root cellars were a necessity and built in the same manner as the sod houses. Rudimentary small barns that housed livestock were "made by piling straw over a skeleton of saplings and logs. The better ones were covered or thatched by a covering of the wiry slough hay" (Forrest 1947, 25).

A year or so after their establishment, settlers typically constructed a new frame house. The sod structures were not readily adaptable to alterations to meet evolving needs, nor were they easily upgraded with plumbing and electrical systems. It soon became more practical to replace buildings than to maintain and repair the aging structures (WHS nd). Modern advancements in methods and production of materials made it faster and more affordable to construct a house than ever before. Most houses constructed between 1860 and 1920 were built using the balloon frame technique. This method was developed in the mid-19th century following the introduction of manufactured "uniform, dimensional lumber" in the 1850s. During this time, lumber and other mass-produced building materials became readily available and affordable. Nearly all houses constructed into the 1920s had balloon frame structures, and they were typically clad in wood lap siding or stucco. The balloon frame technique of construction fell out of favor in the 1920s when a "safer, faster, and cheaper" technique called platform framing was developed; it remains the standard wood framing method (ibid).

There were several contributing factors to the post-war building boom in America beyond providing housing for returning G.I.'s. Modern materials and technology that had been developed by the military was introduced to the public market. Wartime production plants and resources were redirected to create an ample variety of affordable, mass-produced building materials. Buildings that had been neglected due to financial instability and limited supply of building materials during the Great Depression and War could be repaired and updated. Original wood and stucco walls were obscured with a variety of modern cladding materials like aluminum, vinyl, asbestos, and manufactured wood. Wood sash windows were similarly replaced with modern frames; popular types were sash, casement, and sliding.

Technological advancements included the introduction of affordable, electrified appliances to the mass market. It became more advantageous to build a modern house than to retrofit an old house for modern appliances. Similarly, it was more advantageous to build new, larger farm structures to fit evolving needs. While their styles and building techniques vary, most of the late nineteenth and early twentieth century barns were constructed to shelter cattle and dairy cows or other varieties of livestock, and store feed in an overhead loft. Thanks to modern building materials and techniques, barns increased in scale, with larger footprints and tall roofs for expansive loft space. In the 1910s, barns were routinely built on concrete foundations, and in the by the 1920s, concrete blocks were used to construct basements and base walls (Noble and Wilhelm 2018). Apart from the barn, agricultural buildings are typically utilitarian in form and style, and devoid of ornamentation. The auxiliary structures serve various purposes in their support of farming activities. Pole barns are primitive in their construction and typically smaller in size and scale than barns. The rectangular-plan structure was built by hanging walls from timber posts that had been driven into the ground. They typically had dirt floors; shed, saltbox, or gable roofs; and one exposed side elevation. They served a variety of purposes, including sheltering livestock, storing feed or hay, or storing machinery and implements. After it was introduced in the mid-19th century, lumber began to be used in their construction.

During the building boom after World War II, new building materials were introduced to the public. Thin metal sheeting (aluminum, galvanized steel, and corrugated sheet metal) was frequently employed to re-clad pole barns and other farm buildings that had been neglected since before the Great Depression. The cladding provided some structural support to aging structures but obscured or replaced original elements like timber poles and weatherboard cladding. Alternatively, many pole barns were demolished and replaced with modern structures. Today, modern pole barn construction is implemented for a variety of uses beyond the farmstead, including for commercial and residential purposes. Because of its method of construction, many machine sheds meet the definition of a pole barn. Generally taller and larger than pole barns, machine sheds have generally functioned as garages and storage buildings since they were developed. Plows, implements, tractors, and other machinery used for raising livestock and cultivating crops have continually evolved since the late 19th century. In reaction to growing variety and physical size of modern machinery, machine sheds progressively increased in size and scale. They are typically rectangular-plan and have a gable roof. Vehicular entry bays typically have sliding doors may be set in the gable-end wall, sidewall, or both. The building form was standardized in the post-war building boom. Its pole or plank frame structure was built with dimensional lumber, and the walls and roofs were faced with modern metal cladding.

4.2.4 Farming and Trade

The 1860 Census recorded that there were 3,651 acres of improved land in Faribault County. Agricultural production "and its kindred industries" was originally, and has continued to be, "the leading and most important pursuit of the people of this county" (Kiester 1896, 103). Farmsteads contained a total of 159 horses, 285 milk cows, 198 working oxen, 317 other cattle, 46 sheep, and 579 swine. There were 260 people employed as farmers at the time; there were nineteen carpenters, seven schoolteachers, six blacksmiths, five lawyers, and three wagonmakers. There were two each of machinists, tailors, merchants, hotel keepers, and physicians, while there were one each of a minister, stage driver, silversmith, clerk, millwright, baker, cooper, gunsmith, trapper, and butcher (Kiester 1896, 118). Settlers did not find much initial success in raising crops to trade, not the least of which was because the trade network was limited without rail service. According to John Low, who first visited southern Minnesota in 1863 and settled in Murray County 1866, "We raised mostly wheat and oats and what little surplus we had was mostly taken up by the new settlers as they came in. In the winter we usually did some trapping which helped us out with what cash we needed for supplies." Farming operations were "rather crude" and what few pieces of machinery they had was typically handmade (Forrest 1947, 16-17).

Wheat was the most grown crop, followed by flax, potatoes, oats, and barley. The grain was cut, bound, and threshed by hand. When there was enough for sale, the product would be hauled north, either via riverways or trails, to Mankato. Small garden plots were cultivated for vegetables. The sod barns housed a small number of animals, kept for husbandry more than to profit from. The animals provided physical power in transportation and crop production, food for subsistence, and materials for fabrics. Most of the settlers arrived by wagon, pulled by a yoke of oxen or team of horses. Upon reaching their claim, new settlers "took the plow from the wagon, hitched the oxen to it and started breaking up the virgin sod." Cattle were not plentiful, nor were mules. The "old milk cow, when it was giving milk, was the foundation of the filled stomach. From her they got milk, cream, butter, cheese, and when a critter broke its leg, there was beef to eat. Many of the settlers had only one cow when they came, and when that cow was not giving milk, conditions were really serious" (Forrest 1947, 29). Sheep "were a necessity. They supplied wool for the clothing after it was carded, spun, and knitted. The pelts of the sheep were the only blankets many a family had during the winter months" (ibid 41).

Severe weather and hailstorms, prairie fires, and insect infestations were among the challenges the settlers faced in the 1870s. Between 1873 and 1877 the region suffered a series of grasshopper infestations that caused farmers to lose their entire crop. By 1877, many farmers were bankrupt. The improved agricultural conditions coincided with the arrival of the railroads, which increased the population in the region.

Much like building materials after the Civil War, modern farming implements and machinery had begun to be mass produced, increasing their affordability and availability. The large modern equipment required larger buildings to store them. In some cases, an old barn would be converted into a garage, but it was often just as practical to build a modern gabled machine shed with metal cladding and large sliding doors.

As the population began to decline after 1940 in Faribault County so did the number of farms. In the following decades, the number of farms decreased while their average size increased. Modern machinery and farming methods allowed for more efficient operations that required fewer people and animals to complete. In addition to "mechanization and technological

advances, improved livestock breeding, as well as the development of hybrid seeds, crop genetics, fertilizers and pesticides resulted in increased agricultural production" (Gaul 2017). Larger farms became more economically advantageous than family-run operations, and in time much of the land was owned and cultivated by commercial farming businesses. Agriculture remains the primary industry in the county.

4.2.5 Transportation

Indians established and utilized trails and waterways throughout the area long before the arrival of the white settlers. From Blue Earth, the Watonwan and Des Moines and Rivers connected to the west, while the Blue Earth and Minnesota River connected to the north and east, including the junction of the Mississippi and Minnesota Rivers, where Fort Snelling and Mendota were located. New trade posts were frequently established along these early transportation networks. Upon the American Fur Company's establishment of the southwestern-most trading post in Minnesota in 1833, "trade goods and furs were transported between [the Bear Lakes post] and Mendota over land and by canoes. Traders used a tiny stream, not shown on maps published by the Minnesota Geological Survey, and dry during dry seasons, which connected Tibbetts Lake at the Great Oasis with the headwaters of the Des Moines River" (Forrest 1933, 85). Travel to Mendota continued via the Des Moines, Watonwan, Blue Earth, and Minnesota Rivers. Grains were hauled by oxen- or horse-led wagon for trade.

Many trailways used by explorers and then settlers had been long-ago established by Indians. The routes were continually improved in the late nineteenth century. The American Fur Company and other commercial operations improved old while in other cases, government roads were established to provide direct routes between territorial forts and burgeoning cities (MHRSP 1941, 20). In the days "before the existence of railroads, state roads were deemed of great importance, being usually established between important points across two or more counties." In 1858, the State Legislature enacted several laws that authorized the construction of state roads that crossed through either Winnebago or Blue Earth. In many instances, "some of these roads, attracting and directing the course of travel and traffic, in natural and convenient channels, served to create the necessity for, and prove the practicability of certain great lines of railway, subsequently built, of which they were the frontrunners" (Kiester 1896, 84). The major trails that connected trade hubs and cities were among the first routes to become state roads in the nineteenth century, and later highways in the first half of the twentieth century.

Between 1854 and 1858, "twenty-seven railroads were incorporated in Minnesota Territory," but "most of them [were] speculative ventures that never laid track" (MIAC nd). The State Legislature passed an amendment that authorized $5 million "to aid in the land grant railroad companies, in the construction of their roads" (Kiester 1896, 86).

Settlement across southern Minnesota was greatly assisted by the introduction of railroads in the 1870s. The first line through Faribault County was the Southern

Minnesota (Chicago, Milwaukee, St. Paul and Pacific). It was built in 1870 between Albert Lea and Wells, the latter of which was platted "by a local railroad promoter and official" in anticipation of the railroad's arrival. Within a year, the line was extended to Winnebago. Delavan and Easton were also platted by Southern Minnesota promoters. In 1874, "the Minnesota Central (later a branch of the Southern Minnesota) connected Mankato to Wells via pre-existing Minnesota Lake" (Roth 1980, 3). The *Historic Resources of Faribault County* thematic context noted that "Blue Earth, the county seat, gained its first trackage in 1879 when

the St. Paul and Sioux City Railroad extended south from Lake Crystal to the Iowa border. Elmore was platted on this line in 1880." The towns of "Kiester, Bricelyn and Frost were all platted in 1899 by the Iowa and Minnesota Townsite Company when the Iowa, Minnesota and Northwestern (Chicago and Northwestern) was constructed through the southeastern townships. The last railroad to enter the county was the

Burlington, Cedar Rapids, and Northern (Chicago, Rock Island and Pacific) that extended north in 1900 from Iowa through the newly platted city of Walters (1900) and eastward to Albert Lea. The unincorporated villages of Huntley (1879) and Guckeen (1913) were platted late on their respective lines, and because of their proximity to larger centers never grew beyond the confines of a small village." Other communities that had been settled off of railroad lines "contained typically no more than a school, post office or store lost their commercial identities to the platted railroad communities" (Roth 1980, 3).

The Progressive Era, "defined by the period between the 1880s and the end of World War I," led to "greater government involvement in providing essential community services, including transportation and utilities, and increased funding of public works. Their efforts coincided with the development of the automobile and the telephone, both of which dramatically improved communication within and between communities" (Ganzel 2009, 8:1). Development and improvements of rural county routes and the popularization of the automobile helped create wider trade networks and facilitated ease of travel between them.

U.S. Highway 169 runs north along the western edge of the Project. The highway was extended into Minnesota from Iowa ca 1931 and paved by 1940. At present, the route U.S. Highway 169 enters Minnesota near Elmore as a two-lane, undivided highway. North of Blue Earth at Interstate 90, it expands to a four-lane, divided highway, then south of Winnebago reverts to its original two-lane size. Interstate 90 runs east-west across the southernmost part of the state and was originally the route of old U.S. Highway 16. Its development was authorized as part of the original interstate network, enacted by Congress in 1956. Construction was completed in 1978 when the east-building and west-building teams linked the route near its midsection near Blue Earth.

5.0 Literature Review

5.1 Previously Recorded Cultural Resources

A cultural resource literature review was undertaken prior to Westwood's Phase 1 pedestrian survey to identify known cultural resources documented in or within a 1-mile buffer of the Project Area boundary. On July 28, 2021, Westwood Cultural Resources Manager Ryan Grohnke and Architectural Historian Sara Nelson examined files maintained by the OSA and the Minnesota SHPO. Due to precautions required by the Minnesota Governor's Stay Safe MN orders placed in response to the COVID-19 pandemic, in person review at SHPO and OSA was not allowed. This limited Westwood's ability to review previous survey reports and other materials housed on-site at these locations. The online Portal managed by OSA was reviewed in May 2022 prior to the spring fieldwork to verify no new sites had been identified in the APE.

Review of information from these offices included an examination of site maps, archaeological site forms, burial files, historic structure inventories, and survey reports. The purpose of this review was to create an inventory of previously recorded cultural resources, including

archaeological sites and historic architectural resources in the study area. The background research and literature review would identify previous cultural resource investigations along with levels of disturbance and potential for sites within the Project Area and buffer. The review also included examining the National Register of Historic Places (NRHP) dataset, aerial photography, and historic mapping. Approximately, 8,155 acres were studied in the initial literature review, including an approximate one-mile buffer from the current Project Area (**Exhibit 1**; **Table 1**).

The literature review completed by Mr. Grohnke and Ms. Nelson did not identify any previously recorded archaeological sites or historic/architectural resources in the Project APE. Thirteen previously recorded archaeological sites are within one mile of the Project (**Table 2**; **Exhibit 1**[1]). Most of the archaeological sites have been recommended or determined not eligible for listing in the NRHP with two sites being unevaluated for NRHP eligibility. There are no previously recorded sites in the Project APE.

Table 2: Previously Recorded Archaeological Sites in One-Mile Buffer

Site No.	Site Name	Site Type	NRHP Status
21FA0046	NA	Artifact Scatter	Recommended Not Eligible
21FA0050	NA	Artifact Scatter	Unevaluated
21FA0105	Golly	Lithic Scatter	Not Eligible
21FA0106	Ott	Lithic Scatter	Not Eligible
21FA0107	Perry	Lithic Scatter	Not Eligible
21FA0108	Poverty Acres	Lithic Scatter	Not Eligible
21FA0109	Riverside Country Club	Lithic Scatter	Not Eligible
21FA0114	Hill Findspot	Lithic Scatter	Unevaluated
21FA0143	NA	Single Artifact	Not Eligible
21FA0144	NA	Single Artifact	Not Eligible
21FA0145	NA	Single Artifact	Not Eligible
21FA0146	NA	Single Artifact	Not Eligible
21FA0147	Morse	Artifact Scatter	Not Eligible

Key: Site No. = site designation applied by OSA; Site Name = unofficial site name as listed on site form; Site Type = brief description of site as designated on site form; NRHP Status = Eligibility or listing status in the NRHP.

No historic/architectural resources have been previously inventoried within the Project Area. Four resources have been previously inventoried within the one-mile buffer (**Table 3**, **Exhibit 1**). None of the resources have been evaluated for listing in the NRHP; not all SHPO inventory forms could be located to verify previous recommendations of eligibility.

[1] Note that archaeological sites are sensitive, and their locations are confidential. No previously recorded sites are located within or adjacent to the Project Area, and those located within the one-mile buffer are not depicted on **Exhibit 1**.

[NONPUBLIC DATA BEGINS HERE…

[redacted]

Key: Inventory No. = designation applied by SHPO; Name = unofficial name or resource type as listed on inventory form; Address = location as listed on inventory form, verified in GIS if possible; NRHP Status = eligibility or listing status in the NRHP; Project/Buffer = location within in Project Area or one-mile buffer.

5.2 Other Sources

An Illustrated Historical Atlas of the State of Minnesota (Andreas 1874) shows a schoolhouse in the [redacted] but its specific location cannot be determined (**Exhibit 1**). A road is indicated approximately along the western boundary of the Project Area in about the same location as the current Highway 169. …NONPUBLIC DATA ENDS HERE]

Historic Trygg Maps (1969) developed from the original township land surveys indicate the Project Area consisted primarily of prairie with several small marshes. The following maps and atlases were also examined:

- 1913 Atlas and Farmers Directory of Faribault County, Webb Publishing Co.
- 1920 Plat Book and Livestock Breeders' Guide of Faribault County, The Fairmont Map Company
- 1929 Atlas and Farmers Directory of Faribault County, Webb Publishing Company
- 1955 Atlas of Faribault County, Thomas O. Nelson Co.

These maps show a farmstead in the Project Area which is still extant today.

A review of 1938 and 1954 historic aerial photographs indicate the Project Area was predominantly cultivated agricultural land. A road was shown running northwest to southeast in sections 12 and 13 of Township 103, Range 28. The former location of this road can still be seen in current aerial photography. One farmstead was observed in the historic aerial photographs; this farmstead is extant today.

6.0 Field Investigations

6.1 Archaeology

Fieldwork for the Project was carried out between December 1 and 3, 2021. Minor changes to the Preliminary Development Area in January 2022 necessitated addition field investigations June 8 and 9, 2022. Field investigators utilized pedestrian survey to examine the APE. As indicated above, the APE is the entire 1,293 acres of the original and updated Preliminary Development Areas, which consisted of locations of proposed ground disturbance for construction and operation of the Project. Rigden Glaab of Westwood meets the Secretary of the Interior's Professional Standards for Archaeology, as stipulated in 36 CFR Part 61, and served as Principal

Investigator for the Project. The December 2021 fieldwork was performed by Principal Investigator Rigden Glaab, and Archaeological Technicians Brian Joby Hunt, Ryan Steeves, Lindsay Schwartzkopf, Daniel Schneider, and Sara J. Nelson. The June 2022 fieldwork was performed by Westwood Cultural Resources Manager Ryan Grohnke and Sara Nelson. GSV in the agricultural fields was conducive to pedestrian survey in all locations. Pedestrian survey was performed at approximate 15-meter intervals, which conforms to archaeological standards outlined by the OSA (OSA 2021).

Transect spacing varied in lower site probability areas where a landscape-based approach was more appropriate (e.g., wetlands). In these locations, the archaeologists would focus their inventory on any notable rises, ridges, or other elevated landforms. Transect spacing was maintained using layers in ArcGIS Collector showing a grid of north-south and east-west lines spaced at 15 meters. This allowed archaeologists to leave their line to inspect adjacent terrain while maintaining orientation and relative spacing in survey. Conditions in December were generally cold (30 °F–50 °F) with winds prevailing from the northwest. There was no snow in the Project Area. Conditions in June were mild (60 °F–80 °F).

The Blue Earth River is a major water source near the Project. The Project topography flows towards these features creating an undulating landscape with low ridges, coulees, and wetlands. The Project Area is principally used for agriculture with soy and corn being the main crops. In December fields were harvested at the time creating a GSV of 95%+. In June, crops were in early stage of eruption with a GSV of 85%+. The excellent visual coverage provided ideal survey conditions for the Project APE. Representative photographs of the Project Area can be viewed in **Appendix A**. *No cultural resources were identified during Westwood's Phase 1 archaeological pedestrian survey*.

7.0 Summary and Recommendations

No new or previously recorded archaeological, architectural, or historic sites were identified/reviewed during the course of the survey. No further field investigations are recommended on behalf of Winnebago Solar and Storage LLC associated with the original Project APE at this time.

The Preliminary Development Area was revised after the December 2021 pedestrian field survey was conducted. Additional field investigations were performed in June 2022. The entire Preliminary Development Area consisting of approximately 1,207 acres was surveyed in the two mobilizations (**Exhibit 1**). If construction plans are further revised to include areas outside of the updated Preliminary Development Area, those locations must also be examined for cultural resources.

Although an archaeological survey was completed, the possibility of unidentified resources remains. If unrecorded archaeological sites are discovered during construction, all ground-disturbing activities in the area should stop and archaeologists at Westwood should be contacted. Further, if human remains are encountered during construction activities, all ground disturbing activity must cease, and local law enforcement must be notified. *Minnesota Statute 307.08, the Private Cemeteries Act, prohibits the intentional disturbance of human burials.* An Unanticipated Discover Plan (UDP) has been created for the Project in the event human remains are identified.

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EXHIBIT 1:
Cultural Resources Survey Project Location

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APPENDIX A:
Project Overview
Photographs

Photo 1: Overview of Northwestern Project Area, Facing Southeast

Photo 2: Overview of Northwestern Project Area, Facing Northwest

Photo 3: Overview of Southwestern Project Area, Facing Northeast

Photo 4: Overview of Southwestern Project Area, Facing West

Photo 5: Overview of Central Project Area, Facing West

Photo 6: Overview of Central Project Area, Facing South

Photo 7: Overview of Northeastern Project Area, Facing South

Photo 8: Overview of Northeastern Project Area, Facing North

Photo 9: Overview of Southeastern Project Area, Facing West

Photo 10: Overview of Southeastern Project Area, Facing East

Photo 11: 2022 Update: Overview of Northwestern Project Area, Facing Southeast

Photo 12: 2022 Update: Overview of Northeastern Project Area, Facing South

Appendix I-3

SHPO Response Letters

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

August 23, 2022 **Via Email Only**

Ryan Grohnke
Westwood Professional Services
12701 Whitewater Dr, Suite 300
Minnetonka, MN 55343

RE: File No R0027810.00
Winnebago Solar and Storage Project
Faribault County
SHPO Number: 2022-0452

Dear Ryan Grohnke:

Thank you for continuing consultation on the above referenced project. Information received on July 25, 2022, has been reviewed pursuant to the responsibilities given the State Historic Preservation Office by the Minnesota Historic Sites Act (Minn. Stat. 138.666).

Winnebago Solar and Storage LLC is proposing to develop a 150 MW Solar Energy Facility (Project) on approximately 1,207 acres of land in Faribault County. The proposed project will include the installation of solar arrays, onsite electrical collection lines, access roads, and associated infrastructure.

We have reviewed the submitted cultural resources survey report: *A Report for Phase I Archaeological Survey, Winnebago Solar and Storage Project, Faribault County, Minnesota* (July 22, 2022) as prepared by Westwood. Based on the results of the survey, we conclude that there are **no properties** listed in the National or State Registers of Historic Places, and no known or suspected archaeological resources located in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact Kelly Gragg-Johnson, Environmental Review Program Specialist, at kelly.graggjohnson@state.mn.us.

Sincerely,

Sarah J. Beimers
Environmental Review Program Manager