AN ARCHAEOLOGICAL SURVEY OF DAKOTA COUNTY, MINNESOTA

Research Report by

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1. PROJECT SUMMARY

An archaeological survey was performed in Dakota County, Minnesota, over the course of the 2017 field season. Field work began on April 14 and concluded on November 2. Funding for the survey was provided to the Science Museum of Minnesota by the Minnesota Historical Society from funds from the Minnesota Clean Water, Land, and Legacy amendment. The purpose of the survey was to review the Precontact and Early Contact archaeological resources of Dakota County, to examine existing collections and known sites, and to conduct a field survey within the county with the objective of documenting additional Precontact and Early Contact sites in the county.

Dakota County is located within the Greater Metropolitan Area of the Twin Cities. The northern part of the county has been subject to extensive development due to the ever-expanding cities of Minneapolis and Saint Paul and their southern suburbs. Due in part to this urban development, the county already had 106 archaeological sites recorded before the start of field work for this survey. Most of these sites, especially the more rigorously studied of them, are located along the Minnesota and Mississippi river valleys that form the northern boundary of Dakota County. The southern two-thirds of the county, on the other hand, is dominated by sprawling farmland punctuated by small towns. This area, having not seen the same level of archaeological survey in the past, is where we focused our efforts.

Dakota County is defined by a landscape of rivers. It is located at the convergence of three major rivers at the northern and eastern edges of the county – both the Minnesota and the Saint Croix with the Mississippi River. A minor drainage, the Vermillion River, dominates the central part of the county and also enters the Mississippi Valley at the northeastern part of the county. The Cannon River cuts across the south of the county, defining part of its boundary with Goodhue County. Our approach to survey was to examine the patterns of settlement and land use within the Vermillion and Cannon watersheds in the southern two-thirds of the county.
The work of the survey involved surface reconnaissance of agricultural fields and transects of shovel test pits in high-potential unplowed areas. The survey also involved the examination of institutional and private collections. The primary institutional collections are found at the Science Museum of Minnesota (SMM) and the Minnesota Historical Society (MNHS). Collections of archaeological materials were also identified at the Dakota County Historical Society (DCHS), the Randolph Historical Society, and the Cannon Falls Historical Society. The Dakota County attribution of specimens from the latter organizations are questionable in some cases. Taken altogether, existing collections from the county paint a picture of the periodic, if not continuous, occupation of the county from the end of the last ice age some 14,000 years ago through all of the major archaeological periods defined for the state.

This survey located 32 new archaeological sites. Twenty-nine of these were identified through field survey. Two were identified from collections at the SMM. One was the find spot for a fluted lanceolate projectile point provided by a collector informant. All of the sites are Precontact, although two also have Historic components. Most of sites are lithic scatters and only two were found to contain pottery. MN-Model was consulted as a guide to high probability areas to target for survey. Areas of the county where MN-Model did not have data were also examined. Ultimately, our ability to survey was dictated by our ability to make contact with land owners and their willingness to allow access to their property. Twenty-two individuals provided access to their land. We also surveyed in three public parks – two Dakota County Parks and one managed by the City of Hastings.

The results of the survey show an unbalanced distribution of sites across the county, and, when taken together, patterns emerge. Most of the sites are located on major river or stream channels, although some are found on the larger lakes of western Dakota County (i.e., Chub Lake). Others are located within sheltered valleys in the central Dakota County moraine area. In contrast with sites along the Minnesota and Mississippi Rivers, such as those at Spring Lake, sites outside of these valleys give the impression of a region that was passed through for millennia with the major rivers and their confluences (including the Cannon with the Mississippi) drawing the most attention for long-term or intensive settlement. The results of the
survey should be useful to archaeologists who are working to characterize the long-term use of the areas around the confluence of major rivers in the upper Midwest. The results should also guide them toward additional researches in Dakota County. For the people of Minnesota, the Twin Cities, and Dakota County, this survey provides a summary and a more complete record of the Native past of the county and southeastern Minnesota.
2. ENVIRONMENTAL AND PALEOENVIRONMENTAL SETTING

Current Setting
The diverse landscape and water resources of Dakota County that made it attractive to indigenous peoples similarly made it attractive to colonizing Euro-Americans as well as to modern citizens, if perhaps for different reasons. The county is bordered by major rivers providing access to and from the west via the Minnesota River, the north via the St. Croix River, and both the north and south by the Mississippi River (Figure 2.1). Given Dakota County’s position among these major arteries and a diverse ecological setting, it is perhaps no surprise, then, that three of the state’s theoretical archaeological regions also converge within the county – the Central Lakes Deciduous Region (Zone 4) in the north of the county, the Prairie Lakes Region (Zone 2) in the west, and parts of both subzones of the Southeast Riverine Region (Zone 3) in the southeast (Figure 2.2). Anfinson (1990, 2005) defined these archaeological regions based on considerations of the natural landscape (i.e., major drainages, soils, and topography), ecological communities, and the distributions of known archaeological complexes. Today, the central sandy plain surrounding the Vermillion River is conducive to agriculture, whereas the hilly northern part of the county has been heavily urbanized (Figure 2.1; Figure 2.3). These two land covers dominate the county, with 53% being agricultural and 28% urban (Table 2.1; data referenced to Homer et al. 2015). The current climate is strongly continental, with warm humid summers and cold dry winters. The normal (1981-2010) mean annual temperature is 7.4°C; the mean normal seasonal temperatures range almost 30°, from -8.1°C in winter to 21.1°C summer (Table 2.2). The normal mean annual precipitation is 814 mm, with 40% falling in summer (JJA) and only 8% in winter (DJF).

Geological History and Hydrological Implications
Bedrock structure in combination with surficial glacial deposits have created this diverse landscape. The Paleozoic bedrock underlying glacial drift is dominated by Ordovician sandstone (St. Peter) and dolostone (Praire du Chien) (Figure 2.4; Mossler 1990). However, the most striking feature of the bedrock surface is the buried valley incised into the Cambrian Jordan and
St. Lawrence-Franconia formations in the northern and eastern parts of the county marking an abandoned channel of a major pre-glacial river (Bloomgren et al. 1990), a proto-Mississippi or proto-Minnesota river course. This bedrock valley and its buried tributary valleys must pre-date the last glacial advances because they are filled with drift and generally not aligned with modern stream courses. An exception in alignment is the middle portion of the Vermillion River, which found the underlying pre-glacial bedrock valley presumably because it remained incompletely filled despite nearly 100 m of outwash (Figure 2.1; Figure 2.4). Nonetheless, the lower Vermillion ignores the larger and more deeply buried valley to the east, crossing it at right angles and continuing on to Hastings and the present-day Mississippi.

These bedrock valleys filled with highly permeable glacial sands and gravels may have influenced native settlements by providing sites of focused groundwater discharge, namely, springs that would remain ice-free even during winter. A prime example of such focused groundwater discharge is where the large buried valley in the northeast part of the county intersects the Minnesota River valley to the north. Here, a large apron of calcareous fens wetlands is present within the current day Fort Snelling State Park (Figure 2.4). These fens are particularly indicative of strong groundwater discharge, which is required by their rare flora. On the east end of this buried valley, where it enters the Mississippi River valley, lies Lower Pool 2, now flooded by lock and dam 2 but still marking a naturally wide reach of the river. We hypothesize that this area also has year-round seeps and springs around its margin.

Glacial deposits (drift) cover most of the county and thus determine most of the existing landforms and soil parent materials (Figure 2.5; Hobbs, Aronow, and Patterson 1990). The Pleistocene Epoch (the Ice Ages) began about 2.6 million yrs ago (Gibbard, Head, and Walker 2010) with major pulses of glaciation at about 100,000-yr intervals (Hays, Imbrie, and Shackleton 1976), implying several dozen glacial stages. Some of these stages were extensive enough to cover all of Dakota County, leaving behind so-called old drift that remains exposed in the southeastern part of county. The age of these deposits is not well-determined but they pre-date the most recent glacial stage, the Wisconsinan glaciation, which began about 115,000 yr BP (end isotope stage 5e; Lisiecki and Raymo 2005; Dahl-Jensen et al. 2013). The Wisconsinan
stage ended about 11,700 cal yr BP* (Rasmussen et al. 2006), although the melting of remnant ice sheets still influenced events in Dakota County for over a thousand years after that date.

The Wisconsinan glaciation reached a maximum ice volume (the last glacial maximum) from about 26,500 to 20,000 cal yr BP (Clark et al. 2009). The moraines that occupy the hilly northern and western boundaries of Dakota County originated from tills deposited during this time. The St. Croix moraine along the northern edge of the county was built from sandy, red till (Figure 2.5, dark red) deposited at the terminus of the Superior lobe, ice that came from the basin now occupied by Lake Superior. Meltwaters from this lobe deposited sandy outwash (Figure 2.5, pink) in the central part of Dakota County beyond the ice margin. An ice lobe flowing from the west down the center of the current Minnesota River basin, originating out of Manitoba, abutted the western boundary of the county at about the same period, forming a moraine there, as well, of gray clayey till.

By 20,000 cal yr BP, global deglaciation had begun (Clark et al. 2009), and the ice front temporarily retreated back to perhaps central Minnesota for several thousand years (Patterson and Hobbs 1995). However, a relatively thin and fast-moving surge of ice from the west re-advanced down the Minnesota River basin, reaching all the way to present-day Des Moines, IA by 17,000 cal yr BP. This Des Moines lobe appears to have been a form of outlet glacier emanating from ice streams draining the spreading centers of the wasting Laurentide ice sheet (Patterson 1997). The ice lapped onto the existing moraine along the west border of Dakota County, adding additional till to the feature as well as outwash to the east, mixing with the earlier Superior outwash (Figure 2.5). Perhaps contemporaneous with the time of maximum extent, a sublobe diverged from its parent Des Moines lobe and overrode an earlier moraine to the northeast of Dakota County, reaching the present-day village of Grantsburg in western Wisconsin. The Grantsburg sublobe then lapped upon the earlier St. Croix moraine along the

* Ages younger than about 50,000 years ago are given here either as conventional radiocarbon years before present (14C yr BP) or as calibrated years before present (cal yr BP), where present is by convention 1950. Calibration to calendar ages was performed with CALIB 7.1 (Stuiver, Reimer, and Reimer 2017, http://calib.org/calib/). Accessed December 2017), based on the IntCal13 calibration curve (Reimer et al. 2013). Ages are rounded to nearest 100 yr for simplicity. Dates are given as BCE or CE.
northern boundary of Dakota County, depositing more till on the moraine and outwash southeast of its boundary, again mixing with the earlier Superior outwash (Figure 2.5).

The sandy outwash in the central part of Dakota County, in combination with sufficient precipitation, results in large rates of groundwater recharge, which in turn results in very steady and reliable groundwater-discharge driven baseflows in the Vermillion River. In fact, both the Vermillion River and Cannon River receive enough discharge of cool, clean groundwater so that segments of these rivers are currently state-designated trout streams. Such strong groundwater discharge would result in year-round availability of open water and thus would provide attractive resources for inhabitants.

By about 13,600 cal yr BP (11,700 \( ^{14} \text{C} \) yr BP), both the Des Moines and the Superior lobes had retreated north of the continental drainage divides and formed the large pro-glacial lakes Agassiz and Duluth, dammed to the north by ice and spilling over the divides to the south (Eyster-Smith, Wright, and Cushing 1991; Fisher 2003; Shay 1967; Wright 1972). Meltwaters from Lake Agassiz spilled south down River Warren (the course of the present-day Minnesota), and meltwaters from Lake Duluth likewise spilled down the St. Croix. Because these lakes trapped the sediment load from the melting ice, the waters of the rivers Warren and St. Croix were sediment-poor and thus highly erosive, quickly scouring glaciofluvial sediment from their valleys and leaving a series of terraces as remnants (Wright 1972). The flows down the St. Croix were apparently catastrophic at times (Hajic and Hudak 2005). During this time the deep, wide valley of the Minnesota River was excavated, and the bedrock valleys of the Mississippi and St. Croix were swept clean of sediment and perhaps cut into the bedrock itself in places. These erosive flows continued until about 10,600 cal yr BP, when ice retreated far enough to the north to allow drainage of the proglacial lakes to the north Atlantic, thus pirating the meltwater that fed River Warren and the St. Croix and reducing their flows and that of the Mississippi to a relative trickle.
The reduced flow in the Mississippi River at this time could no longer clear its channel of sediment delivered by tributaries, and by 10,400 cal yr BP (9,200 \(^{14}\)C yr BP) the sediment fan from the Chippewa River in western Wisconsin had dammed the Mississippi, thereby creating Lake Pepin (Wright 1972). At this time, Lake Pepin extended all the way north to St. Paul, and likely up the St. Croix valley as well, forming Lake St. Croix essentially contemporaneously. The once-scoured valley of the Mississippi, now a long riverine lake, began to fill with sediment again, this time from the delta that prograded into the lake at its head where the newly-formed Minnesota River (remnant of River Warren) delivered its sediment load. The prograding delta marched downstream, shortening the lake and creating a low-lying floodplain in its wake. By about 5,100 yr BP the delta had reached the confluence with the St. Croix River, thereby differentiating Lake St. Croix to the north from Lake Pepin to the south. This age was estimated by prorating the average rate of advancement of the prograding delta based its assumed starting point near downtown St. Paul and its current location at the head of Lake Pepin south of Red Wing, Minnesota. Table 2.3 documents these assumptions and gives dates for the delta location for several key sites along the Mississippi River.

The broad floodplain created in the Mississippi River valley behind the advancing delta would provide a distinctive habitat type relative to the rest of the county, especially for agriculture when it finally arrived. By the time the large Late Precontact settlements were growing corn on the deltaic floodplain of the Mississippi River at the Silvernale site (21GD003) and other villages near Red Wing just south of Dakota County, around 1050 to 1400 CE, there was over 80 km such potentially cultivatable floodplain reaching up to St. Paul at the northern tip of Dakota County. Archaeologists (e.g., Dobbs and Mooers 1991, Fleming 2009, Schirmer 2002) have hypothesized that the Red Wing area was attractive to indigenous peoples because the confluence of several rivers (the Mississippi, Cannon, and Trimble rivers) provided a “gateway” for native transportation, commerce, and aggregation. If so, the bluffs in Dakota County should likewise have been attractive for settlement, based on confluence of major rivers (Mississippi, Minnesota, and St. Croix rivers) coinciding with an expansive area of cultivatable floodplain. So, it is no surprise then, that the floodplains and terraces along the Minnesota and Mississippi Rivers at the north of Dakota County at places such as Spring Lake and Mendota hold the majority of multi-component Precontact archaeological sites known in the county.
Vegetation History

The late- and post-glacial vegetation and climate history is told through one of the earliest and most classic pollen diagrams created in Minnesota, that from Kirchner Marsh in central Dakota County (Figure 2.6), and described in Wright, Winter, and Patten (1963). The site was a lake throughout most of its history, until about 1,500 cal yrs BP, when it had filled in and become shallow enough to deposit peat dominated by sedge pollen. Located near the contact between moraine to the north and sandplain to the south, Kirchner Marsh recorded a mix of vegetation units, likely more forested on the moraine and more open on the sandplain. The late glacial vegetation (prior to 11,700 cal yrs BP) was spruce woodland with an ash component (Zones K and A). The post-glacial vegetation began with a short-lived pine-birch-elm woodland (Zone B), which gave way at about 11,000 cal yrs BP to an oak-elm woodland on the moraine with varying amounts of prairie elements occupying the sandplain for the long remainder of the Holocene (Zone C). Near the top of Zone C, pine makes a resurgence about the time the lake transitioned to marsh, but this appears to be a result of long-distance transport of pine pollen from farther north rather than establishment of pine locally (Wright, Winter, and Patten 1963). In any case the transition to marsh and dominance by sedge masks the details of the other pollen types. The core is truncated at the top and does not extend to the time of EuroAmerican settlement in the early 1800s.

Of particular interest regarding Native settlements is the potential impact of the Medieval Climate Anomaly (MCA; 950-1250 CE) and its transition to the Little Ice Age (LIA; 1400-1700 CE) (dates taken from Mann et al. 2009). Unfortunately, because of its coarse sampling resolution and truncated top, the Kirchner Marsh core sheds little light on either the MCA or LIA. The MCA correlates to the flourishing of Late Precontact settlements in the Red Wing area, about 35 km to the south of the St. Croix/Mississippi confluence, and the end of the MCA and onset of the LIA correlates with the spread of Oneota villages in and around the Red Wing, LaCrosse, Lower St. Croix, and Blue Earth valley areas. The MCA is commonly regarded as a period of significant warmth across broad areas of the Northern Hemisphere, perhaps in response to increased solar radiation coupled with a reduction of volcanic activity (MacDonald et al.
2008). Megadroughts during this period plagued the American Southwest but did not appear to extend to Minnesota and the Midwest in general (Cook et al. 2004; MacDonald et al. 2008). Gajewski (1987) found that the responses of the vegetation to the MCA in the pollen diagrams from seven sites located from Minnesota to Maine were not only subtle, but also different from site to site. Similarly, in 17 lakes from within the Big Woods region, Umbanhowar (2004) found increased variation (but not directional change) in charcoal, magnetics, and other proxies during the MCA. From these studies, we hypothesize that the MCA was a period of increased climatic variability, with vegetation response dependent on local conditions and chance timing of weather events. Finally, even though the MCA was a period of general warmth compared to the periods immediately before and after, it was not as warm as the present-day (1960 onwards) climate (Mann et al. 2009; Viau, Ladd, and Gajewski 2012).

The maps in Viau, Ladd, and Gajewski (2012) suggest that the climatic transition from MCA to LIA was rather small in the region of Dakota County. Nonetheless, the transition was sufficiently large to trigger the establishment of the Big Woods, where a fire-sensitive elm/maple/basswood forest succeeded oak woodland in a large contiguous region of eastern Minnesota to the south and west of the Twin Cities metro area, just to the west of Dakota County (Figure 2.7, inset map). Both McAndrews (1968) and Grimm (1983) place this vegetation shift at about 300 years ago, or 1650 CE, whereas Umbanhowar (2004) suggests the change was initiated earlier, near the end of the MCA at about 1250 CE. The cause of the vegetation change was a reduction in fire frequency, which was likely caused by a mesophication (dampening) of the climate that increased the size and stability of lakes and wetlands as fire breaks (Grimm 1984). In addition, it has been suggested that a proto-historic reduction in the local populations, who used fire as a habitat management tool, may also have reduced fire frequency in some parts of Minnesota (McAndrews 1968).

The late-Holocene (LIA) establishment of the Big Woods vegetation in and around Dakota County set the stage for the vegetation found at the time of EuroAmerican settlement, even though the Big Woods vegetation type occupied only a relatively small patch on the St. Croix moraine in the north part of the county (Figure 2.7). By far most of the vegetation in the county
had persisted since the mid-Holocene as either prairie (50%) on the sandy outwash in the central and southern part of the county or oak openings and barrens (29%) on the moraine edges or river valleys where topographic breaks may have reduced fire frequency (Figure 2.7). The inset map in Figure 2.7 shows that Dakota County was the northernmost extension of prairie in southeast Minnesota, surrounded by Big Woods to the west and oak openings to the north. The habitat diversity afforded by this large, distinctive patch of prairie surrounded by Big Woods vegetation and large river valleys with expansive areas of flood plain made Dakota County an attractive site for indigenous settlements.

Faunal remains

The Neotoma database shows four sites in Dakota County where either mammoth or mastodon remains have been found (Figure 2.8; Stauffer 1945). These are dated only approximately to sometime during the Wisconsinan stage (about 115,000 to 11,700 cal yr BP). Additionally, excavations at the Lee Mill Cave (21DK002) yielded an array of vertebrate bones from Precontact times (Taylor 1955). Similarly, an unstudied faunal assemblage exists from the Schaar Rockshelter site (21DK138, recorded during the present study) near the Lee Mill Cave site.
Figure 2.1. The geography of Dakota County, Minnesota, showing major drainages and urban areas.
Figure 2.2. Archaeological regions converging in Dakota County, Minnesota (Anfinson 1991, 2005).
Figure 2.3. Modern land-use in Dakota County, Minnesota.
Figure 2.4. Bedrock geology of Dakota County, Minnesota.
Figure 2.5. Glacial geology of Dakota County, Minnesota.
Figure 2.7. Presettlement vegetation of Dakota County, Minnesota.
Table 2.1. Land-use in Dakota County, Minnesota. Column 2 units are in acres.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban/Developed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developed, Open Space</td>
<td>162.3</td>
<td>10.7%</td>
</tr>
<tr>
<td>Developed, Low Intensity</td>
<td>130.0</td>
<td>8.6%</td>
</tr>
<tr>
<td>Developed, Medium Intensity</td>
<td>96.6</td>
<td>6.4%</td>
</tr>
<tr>
<td>Developed, High Intensity</td>
<td>33.4</td>
<td>2.2%</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td>804.6</td>
<td>53.0%</td>
</tr>
<tr>
<td>Cultivated Crops</td>
<td>680.7</td>
<td>44.9%</td>
</tr>
<tr>
<td>Hay/Pasture</td>
<td>123.9</td>
<td>8.2%</td>
</tr>
<tr>
<td><strong>Undeveloped Uplands</strong></td>
<td>190.1</td>
<td>12.5%</td>
</tr>
<tr>
<td>Deciduous Forest</td>
<td>114.4</td>
<td>7.5%</td>
</tr>
<tr>
<td>Evergreen Forest</td>
<td>4.0</td>
<td>0.3%</td>
</tr>
<tr>
<td>Mixed Forest</td>
<td>0.2</td>
<td>0.02%</td>
</tr>
<tr>
<td>Shrub/Scrub</td>
<td>10.1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Herbaceous</td>
<td>57.8</td>
<td>3.8%</td>
</tr>
<tr>
<td>Barren Land</td>
<td>3.6</td>
<td>0.2%</td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td>100.5</td>
<td>6.6%</td>
</tr>
<tr>
<td>Woody Wetlands</td>
<td>19.8</td>
<td>1.3%</td>
</tr>
<tr>
<td>Emergent Herbaceous Wetlands</td>
<td>19.7</td>
<td>1.3%</td>
</tr>
<tr>
<td>Open Water</td>
<td>60.9</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1517.6</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 2.2. Average modern rainfall and mean temperatures for Dakota County, Minnesota.

<table>
<thead>
<tr>
<th>Season</th>
<th>Temperature (deg C)</th>
<th>Precipitation (mm)</th>
<th>Precipitation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>7.4</td>
<td>215</td>
<td>26%</td>
</tr>
<tr>
<td>Summer</td>
<td>21.1</td>
<td>329</td>
<td>40%</td>
</tr>
<tr>
<td>Fall</td>
<td>8.7</td>
<td>201</td>
<td>25%</td>
</tr>
<tr>
<td>Winter</td>
<td>-8.1</td>
<td>69</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Annual</strong></td>
<td>7.4</td>
<td>814</td>
<td>100%</td>
</tr>
</tbody>
</table>

**NOTES:** All data averaged from four stations in or near Dakota County: Farmington 3 NW, Rosemount Research and Outreach Center, Hastings Dam 2, Red Wing Dam 3. Data from NCDC (2017).
Table 2.3. The infilling of Lake Pepin along the Mississippi River over the last 10,000 years from downtown Saint Paul to its current position at Red Wing.

<table>
<thead>
<tr>
<th>Location</th>
<th>Distance (km)</th>
<th>Age (cal yr BP)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Paul high bridge</td>
<td>0</td>
<td>10,356</td>
<td>8406 BCE</td>
</tr>
<tr>
<td>Lock &amp; Dam 2</td>
<td>36.5</td>
<td>5,746</td>
<td>3796 BCE</td>
</tr>
<tr>
<td>St. Croix River mouth</td>
<td>42</td>
<td>5,052</td>
<td>3102 BCE</td>
</tr>
<tr>
<td>Lock &amp; Dam 3</td>
<td>64</td>
<td>2,273</td>
<td>323 BCE</td>
</tr>
<tr>
<td>Cannon River mouth</td>
<td>68.5</td>
<td>1,705</td>
<td>245 CE</td>
</tr>
<tr>
<td>Lake Pepin head</td>
<td>82</td>
<td>0</td>
<td>1950 CE</td>
</tr>
</tbody>
</table>

**NOTES:**

*Abbreviations:* km, kilometers; m, meters; yr, year; cal yr BP, calibrated years before present

*Methods and Assumptions:*

-- Distances follow present course of Mississippi River, scaled from 1:500,000 map
-- Delta started at St. Paul high bridge at 9,180 ± 70 radiocarbon years
-- 9,180 radiocarbon years = 10,356 calibrated years, age of median probability from CALIB 7.1 program (Stuiver et al., 2017), with IntCal13 calibration curve.
-- 1950 AD is zero years BP
-- Lake Pepin was about 34.5 km long in 1950 (and about 34 km long at present)
-- Distance of delta progradation was 82 km, from St. Paul high bridge to 1950 Lake Pepin delta, over 10,356 years, giving an average rate of 7.92 m/yr.
3. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS IN DAKOTA COUNTY

Our knowledge of the Precontact and Contact era archaeology of Dakota County is highly varied. There are areas of the county that have been intensively investigated with numerous well-known and well-documented sites, and there are broad parts of the county that are lacking in archaeological knowledge. Files and reports at the OSA and the SHPO were consulted to reconstruct archaeological activities in the county since the earliest documentation of archaeological sites in the late 1800s. At the start of this survey, there were 106 sites recorded in the state site files and over 200 archaeological project reports filed at the OSA, the SHPO, or noted on the site files. One hundred and seventy-six survey projects in Dakota County were examined from the mid-20th century up to 2017 and 21 major excavations. Typical of areas with substantial urban development, much of the archaeological work that has been done to date has been compliance-based, leading to a sampling emphasis on the greater St. Paul area in the northern half of the county and near the City of Hastings in the northeastern part of the county. Therefore, the majority of archaeological work done in the county, and hence the majority of identified sites, are along Mississippi and Minnesota Rivers. For the larger scale excavations and long-term research and preservation work, archaeologists researching in Dakota County have repeatedly gravitated to three main areas: the Spring Lake area, the Sibley House Complex (21DK031), and the LeDuc Simmons Historic site (21DK065). Of the 21 excavations in the county from 1944 up to 2017, 15 were in one of these three locations. Four of the remaining excavations were salvage excavations in the vicinity of Black Dog’s Village and burials along the Minnesota River.

The following summarizes the major surveys and excavations that have taken place loosely by decade, the corresponding sites recorded, and a timeline, by decade, of notable projects. A listing of reports and an annotated bibliography for Dakota County can be found in the appendices of this report.
19th and Early 20th century investigations

Sites recorded: 17 (21DK007 – 21DK023), all mound groups. 21DK021 – 21DK023 have been determined to be natural prairie mounds and not cultural (Finney 2010).

Professional archaeology has been conducted in Dakota County for well over 100 years. The earliest documentation of this in the county is the work of Theodore H. Lewis during the late-nineteenth century as part of the Northwestern Archaeological Survey, which was privately funded by A. J. Hill. Over the course of the 15-year survey, Lewis single-handedly surveyed many thousands of mounds in Minnesota and surrounding states (Dobbs 1991, Winchell 1911). Lewis documented 14 mound groups (21DK007 – 21DK020) in Dakota County during the 1880s, all along the Minnesota and Mississippi rivers.

Jacob V. Brower was another prolific explorer of Minnesota’s prehistory active during the late 19th and early 20th centuries. Although he spent time documenting the archaeology of Grey Cloud Island in Washington County across the Mississippi River from Spring Lake, he apparently did not spend time examining Dakota County. Newton Winchell mentions in his seminal synthetic 1911 volume The Aborigines of Minnesota that “In this (Dakota) county Mr. Brower made no collections.” The Lewis-Brower collection at the Minnesota Historical Society does include a few stone tools from Dakota County, which Brower secured for the Historical Society from Mr. Hill’s and Mr. Lewis’s when the institution did not have the funds to buy it from Reverend E. C. Mitchell (Winchell 1911).

Modern professional archaeology in Dakota County – 1940s and 1950s

Surveys: 2

New sites recorded: 8 (21DK001 – 21DK006, 21DK025, 21DK043)
Major excavations: 6 (21DK001, 21DK002, 21DK004, 21DK005, 21DK006, 21DK025)

The mid-20th century saw a flurry of archaeological work in county. The SHPO database lists over 200 project reports that include investigations in the county. Survey work increased dramatically from the 1970s onward after the National Historic Preservation Act was signed into law in 1966. Although the archaeology of Dakota County has been investigated professionally since the 1940s, prior to the 1970s, only a few archaeologists had worked in the region. Professional scientific archaeology really began in Dakota County with the work of Lloyd Wilford from the University of Minnesota in the 1940s, followed by Elden Johnson of the Science Museum of Minnesota in the 1950s.

The first recorded excavation in Dakota County came in 1944 when Lloyd A. Wilford excavated four mid-1800s Dakota burials discovered on a farm along the Minnesota River (21DK025). Wilford believed them to be associated with Black Dog’s village, a Mdewankanton Dakota village known to be near the mouth of the Minnesota River and dated the burials to 1835-1855 (Wilford 1944).

In the 1950s, Elden Johnson, working for the Science Museum of Minnesota (SMM), along with Leland Cooper of Hamline University and an associate of SMM, directed a series of excavations along the shores of Spring Lake upstream from Hastings – a reservoir created by the installation of the Hastings Dam. This multi-year project was stimulated by the findings of a high school age boy, Kenneth Klink, who lived along the shores of Spring Lake. Klink brought a collection of artifacts that he found on the beaches and eroding out of the terrace edges overlooking the lake to SMM in the late 1940s, bringing the archaeological resources of the area to the attention of Louis Powell and eventually Elden Johnson. This led to a program of survey and excavation along the south shore of Spring Lake in Dakota County from 1952 to 1956. The Spring Lake Archaeology project began with a shoreline survey in 1952 followed by four years of excavation at multiple sites. Sites excavated include the Sorg (21DK001) (Johnson 1959),
Lee Mill Cave (21DK002) (Figure 3.1) (Johnson and Taylor 1956), Ranelius (21DK004) (Fleming and Hager 2010), Bremer Mounds (21DK05) and Bremer Village (21DK006) (Jensen 1959). The Bud Joseph’s (21DK043) and Hamm sites (21DK003) were tested in 1952 (Johnson and Taylor 1956:27). A small unrecorded rockshelter site near the Lee Mill Cave site was also tested, finding animal bone, stone tools, and chipping debris. This site, Schaar Rockshelter, has been recorded as part of the current survey. The Schilling site (21WA001) across Spring Lake on Grey Cloud Island in Washington County was also excavated as part of this project. The 1950s Spring Lake Archaeology program resulted in the identification of a long-term occupation of the area around Spring Lake, the most intensive being during the Woodland period. Notably, Johnson defined the Sorg Phase as an Initial (Middle) Woodland Havana-inspired manifestation based on thick ceramic sherds bearing banded and zoned designs, including a fully restored vessel excavated at the Sorg site (Figure 3.2). Archaic, Terminal (Late) Woodland, and Oneota materials were also recovered. Comparable materials from Spring Lake are also known in the private collection of Kenneth Klink.

Figure 3.1. Elden Johnson (right) and Kenneth Klink (left) in the Lee Mill Cave (21DK002) in the fall of 1953.
Figure 3.2. Sorg Banded-Dentate style (Johnson 1959) vessel found at the Sorg site (21DK001) in 1953.

1960s investigations

Surveys: 1

New sites recorded: 3 (21DK024, 21DK026, 21DK041)

Major excavations: 3 (21DK024, 21DK026, 21DK041)

The 1960s saw much less archaeological activity in Dakota County than the previous decade. While major statewide survey efforts were implemented toward the end of the 1960s (Trunk Highway and Statewide Archaeological Reconnaissance surveys), these did not result in any new sites in Dakota County.
1963 – Vernon Helmen from the Science Museum of Minnesota carried out salvage excavations when construction of the River Hills apartment complex on a bluff top in Burnsville disturbed human burials dating the site to Archaic period (21DK041).

1964 – Elden Johnson, working for the University of Minnesota, excavated the Cantonment New Hope (21DK024) military fort that dates between 1816-1820. Cantonment New Hope was a stockaded settlement built on Picnic Island at Mendota to amass personnel and materials for the construction of Fort Snelling.

1968 – Minnesota Historical Society carried out salvage excavations of 21DK026 when human remains from another burial site associated with Black Dog’s village were disturbed.

1970s investigations

Surveys: 26
New sites recorded: 7 (21DK0027 – 21DK030, 21DK038, 21DK042, 21DK044)
Major excavations: 1 (21DK025)

Beginning at the close of the 1960s and continuing throughout the 1970s and beyond, archaeology became a more standard practice in the event of construction projects due to the implementation of the National Historic Preservation Act. Elden Johnson, now state archaeologist, developed the Trunk Highway Reconnaissance Archaeology Program in 1968 as a way to record archaeological sites that were impacted by road construction (Watrall 1969). These efforts resulted in a few new sites in Dakota County, plus previously identified mound groups and occupation sites were revisited and site forms created.
1977 – Leslie Peterson conducted more salvage excavations at 21DK025 recovering human remains and associated artifacts.

1980s investigations

Surveys: 14
New sites recorded: 7 (21DK031 – 21DK034, 21DK039, 21DK040, 21DK071)
Major excavations: 1 (21DK031)

Contract work continued on throughout the 1980s by means of the continuation of the Highway Reconnaissance Archaeology Program as well as other firms, such as Cougar Consulting, Archaeological Field Services, and BRW, Inc. Projects during the 1980s fall into three main categories: city expansion, excavations at the Sibley House complex, and continuation of the Highway Archaeological Reconnaissance Study. Although seven new sites were recorded over the decade, the majority of compliance surveys in the county were negative.

City expansions included the building of housing developments, road improvements, and bridge maintenance. These efforts were mainly in the Inver Grove Heights, Burnsville, and Saint Paul areas and were negative.

The reconstruction and restoration of the Ice House-Carriage House at the Sibley House complex (21DK031) went underway, leading to excavations around the perimeter of the house in question. Most artifacts were historic in nature from the 1830 to 1860 era and included objects, such as gunflints, pottery, nails, bone, glass, and bottles. Some although date to the Archaic period and were found on the north side of the structure. It is believed they belong to the Precontact component of the site (Lothson 1987).
Scott Anfinson put the Municipal and County Highway Archaeological Reconnaissance Study in motion in 1984 to review archaeological potential for proposed future road construction projects. This was done for numerous municipalities and counties throughout Minnesota, including Dakota County. It examined the planned project areas to see if archaeological work had been completed, partially finished, or never done in the locality. In Dakota, it was determined at least fourteen sites still needed more work to determine archaeological significance (Anfinson 1984; 1985; Anfinson and Peterson 1987).


**1990s investigations**

Surveys: 52

New sites recorded: 28 (21DK035 – 21DK037, 21DK045 – 21DK068, 21DK105)

Major excavations: 5 (21DK031, 21DK062)

More sites were recorded in Dakota County during the decade of the 1990s than any other until the present study. Twenty-eight new sites were located during this decade due in large part to two major surveys in the county. One of these was survey conducted by Augustana University for the Northern Natural Gas Company who was extending their natural gas pipelines across Carver, Dakota, Rice, Scott, Washington, and Wright Counties (Winham and Strait 1997). The other was a survey in advance of a possible expansion or relocation of the Minneapolis-St. Paul International Airport into Dakota County. Christina Harrison of Archaeological Research Services surveyed the prospective regions in the townships of Empire, Vermillion, and Marshan identifying lithic scatters and Euroamerican homesteads in the Vermillion watershed (Harrison 1993; 1996, Harrison and Roise 1994)
Other significant archaeological work during the 1990s was additional excavations at the Sibley House complex (21DK031) by both the Minnesota Historical Society and the Institute for Minnesota Archaeology, excavations at the LeDuc-Carroll Simmons site (21DK062) by the Minnesota Historical Society, and shovel testing and excavation at the Bremer site (21DK006) by Scott Meyer of Meyer Consulting.

1993 – Douglas Birk (Institute for Minnesota Archaeology) excavated the exterior wall of the Brick House at the Sibley House Complex (21DK031).

1996 – Scott Meyer of Meyer Consulting performed 9 weeks of work at the Bremer Site (21DK006) that included shovel testing and excavating several 1x2m excavation units at the eastern side of the terrace and recovering Initial (Middle) and Terminal (Late) Woodland artifacts.

1996-1999 – Robert Clouse (Minnesota Historical Society) excavated at the Sibley House Complex (21DK031) recovering both historic and Precontact materials.

1997-1998 – Robert Clouse and Sigrid Arnott (Minnesota Historical Society) excavated around the LeDuc-Carroll Simmons Historic Site (21DK062), specifically near the Carriage Barn/Worker’s Quarters.

2000s investigations

Surveys: 46

New sites recorded: 11 (21DK069, 21DK070, 21DK072 – 21DK074, 21DK076 – 21DK081)

Major excavations: 2 (21DK031, 21DK062)
A variety of small-scale surveys related to natural resources, parks and trails planning, road and pipeline construction, and urban development continued in the 2000s, resulting in the identification of 11 new sites. Also, additional excavation work continued at the Sibley House complex (21DK031) and the LeDuc-Simmons House (21DK065).


2005 – Amanda Adams of The 106 Group shovel tested a portion of the Sorg site (21DK001) to define the site boundaries as part of a survey of the Schaar’s Bluff area for the Spring Lake Park Reserve.

2008 – Michelle Terrell and Dylan Eigenberger excavated at the Sibley House complex (21DK031) finding Precontact and historic material.

2010s investigations (up to 2016)

Surveys: 35
New sites: 25 (21DK075, 21DK082 – 21DK104, 21DK106)
Major excavations: 3 (21DK004, 21DK006, 21DK087)

Archaeological work in Dakota County from 2010 to 2016 included 35 surveys identifying 25 new sites, and three excavations. Edward Fleming of the Science Museum of Minnesota followed up SMM’s 1950s work at Spring Lake by excavating and
processing un-studied collections from the Ranelius site (21DK004) and initiating a four-year research and field school project examining the Bremer site (21DK006) with Gilliane Monnier of the University of Minnesota. Michelle Terrell lead excavation of the late 19th-century Block 13 site (21DK087) in Hastings as part of construction of the Highway 61 bridge.

2010 – Edward Fleming (Science Museum of Minnesota) carried out geophysical survey (with Donald Johnson) and excavations at the Ranelius site (21DK004), recovering Woodland and Oneota materials and relocating and mapping the Science Museum’s 1950s excavation locations.

2011 – Michelle Terrell and Andrea Vermeer excavated a historic site (21DK087) in the vicinity of Vermillion St. and 3rd St in Hastings.

2011-2014 – Edward Fleming (Science Museum of Minnesota) and Gilliane Monnier (University of Minnesota) carried out a systematic shovel test survey and excavations at the Bremer site (21DK006) as a multi-year archaeological field school through the University of Minnesota. The project investigated the distribution and character of cultural materials and the taphonomy of the site using systematic shovel testing, excavation, and microarchaeological methods.

2013 – Scott Legge (Macalester College) and Edward Fleming (Science Museum of Minnesota) surveyed the Katherine Ordway Natural History Study Area in Inver Grove Heights north of Pine Bend and near Spring Lake recording three Woodland sites (21DK096-098) and a probable mussel processing site (21DK099).

4. ARCHAEOLOGICAL BACKGROUND

Dakota County bears archaeological evidence for as many as 14,000 years of human occupation. The quality of the evidence varies widely across this vast stretch of time, but the 106 archaeological sites recorded prior to the start of this survey and the 31 found during 2017 attest to a rich and habitable landscape that witnessed populations of people passing through and settling since the end of the last ice age.

All major archaeological periods defined for Minnesota are represented in the archaeology of Dakota County. Because of the dramatic changes that occurred with European colonization, the archaeology of North America is often divided into two major categories – Precontact and Post Contact archaeology. The Precontact era in Minnesota, that is the millennia of human occupation in the state prior to the arrival and influence of European explorers, is traditionally divided into four major periods: Paleoindian, Archaic, Woodland, and Late Precontact. Each of these major periods are typically subdivided when possible to account for various technological and social changes visible in the archaeological record. In this report, we follow Gibbon’s (2012) framework for the sequence of Minnesota Precontact archaeology and apply it to Dakota County. For this particular study, the Post-Contact archaeology of Dakota County is limited the Contact era. The Contact era immediately follows the Precontact era, and represents the period of initial contact of indigenous populations with European explorers and settlers in the state, 1650 – 1837. At the outset of this survey, a review of the literature and site forms filed at the Office of the State Archaeologist indicate that Dakota County had 78 recorded sites with Precontact components and six with Contact era components. The remaining 22 recorded archaeological sites post-date 1837.

**Earliest sites: Paleoindian Tradition**

14,000 to 11,400 years ago (12000 – 9400 BCE)

The whole of Dakota County was ice-free by about 14,000 years ago. However, the central and southern parts of the county were free of glacial ice since the last glacial advance some 130,000
years ago or more. Even after the retreat of the glaciers after the Wisconsinan glaciation, parts of central Dakota County were covered with outwash emanating from the moraines of this region and outflow of glacial waters down the Minnesota, St. Croix, and Mississippi river trenches.

The Paleoindian Tradition is associated with the first people to inhabit Minnesota from the close of the Pleistocene into the early Holocene. Paleoindian communities are presumed to have been small and mobile, game-oriented hunters and gatherers. Early Paleoindian hunters harvested the megafauna of the Late Pleistocene (e.g. mammoth, bison *antiquus*). As the mammoths and other megafauna died off, Paleoindian hunters shifted their attention to other large mammals, especially the remaining species of bison and deer (Gibbon 2012:59). Artifacts of the Paleoindian Tradition tend to be well-made lanceolate-shaped spear points. During the early portion of this period of time, Paleoindian projectile points often had fluted bases. The presumption that Paleoindian communities were small and nomadic is supported by the fact that the majority of archaeological evidence is made up of isolated finds of projectile points, often manufactured out of high-quality non-local tool stone from widely dispersed sources, and very few recorded campsites.

**Paleoindian sites in Dakota County:**

Prior to this survey, no Early Paleoindian sites had been recorded in Dakota County (Buhta et al 2011:120-122). However, all counties surrounding Dakota County except for Goodhue County have reported early Paleoindian finds and all of those finds, except for one (21HE310 (Birk 1994)), were isolated finds made by non-professional collectors.

Prior to survey, only four sites in the county had Late Paleoindian components: 21DK006, 21DK031, 21DK039, 21DK064 (Table 4.1 and Figure 4.1)

The Sibley House Complex (21DK031) is located at the confluence of the Minnesota River with the Mississippi River. The base of an Agate Basin-style projectile point was found during excavation in 1996 (Clouse 1997). The Bremer site (21DK006) is primarily a Woodland Period site located on the south shore of Spring Lake along the Mississippi River. Another base of an
Agate Basin-style projectile point was found nearly a meter deep within glacial outwash sands during shovel testing of the site in 2012 (Fleming 2013). The 21DK039 find is a broken Eden point found in a fallow field west of Crystal Lake. The 21DK064 find is reported only as an isolated Paleoindian lanceolate projectile point found on the shore of Marion Lake. Both 21DK039 and 21DK064 were retained by the collectors who found them, so were not available for examination. A Dalton-style projectile point was found on Chub Lake (21DK113) during survey in 2017. Dalton is considered a transitional projectile point style that bridges the Late Paleoindian to the Early Archaic. Also, a fluted Paleoindian point found northwest of the city of Farmington was reported to the survey team during the 2017 survey and recorded as site 21DK140 (see Chapter 6).

<table>
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<tr>
<th>Site #</th>
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<tr>
<td>21DK006</td>
<td>Bremer Site</td>
</tr>
<tr>
<td>21DK031</td>
<td>Sibley House Complex/American Fur Company Headquarters</td>
</tr>
<tr>
<td>21DK039</td>
<td>Renner Find spot</td>
</tr>
<tr>
<td>21DK064</td>
<td>Greiner Site</td>
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<tr>
<td>21DK113</td>
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<td>21DK140</td>
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Table 4.1. Dakota County sites with Paleoindian components.
Figure 4.1. Paleoindian sites in Dakota County, Minnesota.
Archaic Period

11,400 to 2,500 years ago (9400 – 500 BCE)

In practice, the Archaic is often recognized as sites lacking both earlier Paleoindian point styles or later ceramics, which have come to define the succeeding Woodland Period. Representing a staggering 9,000 years of time (Gibbon 2012:37-65), the Archaic is by far the longest period classification for the archaeology of Minnesota. Still, given that great expanse of time, the Archaic is not well represented in the archaeological record in comparison to later times.

The Archaic is frequently divided into three sub-divisions (Early, Middle, and Late) that roughly coincide with climatic shifts over the millennia. In general, dietary changes, shifts in settlement patterns, and variation in stone tool styles are evident during the Archaic. Regional diversity in point styles, fewer and less far-ranging exotic raw materials, and more habitation sites with Archaic components (not just find-spots) point to a more locally oriented population. Reliance on hunting bison that began at the end of Paleoindian times continued through this period. This was due in part to the expansion of the prairies and, therefore, the range of the bison herds, that resulted from the warm and dry climate of the altithermal that began about 9,500 years ago and continued for some 2,500 years. By about 5800 BCE, the prairie-forest border was over 100 miles northeast of its current position, meaning all of Dakota County was predominantly prairie, aside from river valley deciduous forests. By roughly 4900 BCE, the climate began to trend toward cooler and wetter conditions and the edge of the prairie moved southwestward eventually reaching its modern position by between 2500 and 1200 BCE (Gibbon 2012:66-72). That said, with wide swaths of time tend to come broad generalizations. Dakota County likely displayed an ecological mosaic as it does today, with varying degrees of “prairie” and “forest” at any particular time.

Technologically, the use of spear throwers (atl atls) is frequently attributed to the Archaic in North America. A recent study of fractured early Paleoindian fluted points demonstrates that many were thrown at a velocity that could only be achieved through the use of a spear thrower
(Hutchings 2015). This study shows that atlatl use predates the Archaic, at least in some parts of North America. By the Archaic, atlatl use is presumed to have been widespread.

Another innovation frequently attributed to the Archaic Period that may have stemmed from earlier Paleoindian times was the manufacture of tools made out of native copper mined in the Lake Superior area or collected from glacial till or fluvial deposits. Archaic copper tools have been identified across the Midwest, Dakotas, and Great Lakes of the U.S. and parts of south-central Canada (Gibbon 1998). The greatest concentration of Archaic copper tools is from Wisconsin. Although copper tools exist in collections throughout Minnesota, none were identified from Dakota County.

Archaic sites in Dakota County:

Eleven sites in Dakota County have Archaic components (Table 4.2 and Figure 4.2): 21DK002, 21DK004, 21DK006, 21DK031, 21DK041, 21DK042, 21DK049, 21DK069, 21DK072. Nine were identified prior to the 2017 survey and two during the survey (21DK113 and 21DK114). All were identified to the Archaic on the basis of projectile point style, in most cases isolated specimens at the site. Most Archaic materials come from multi-component sites, being situated on landforms attractive for periodic occupation over long periods of time. An outlier to that pattern is the Late Archaic Pemton/River Hills site (21DK041). Construction activities at this site disturbed a large number of burials in 1963. Many of the individuals displayed evidence of significant perimortem trauma, some bearing projectile points lodged in bones (Regan 2000), telling a tragic story of violence. Analysis of the skeletal materials, especially dentition, prior to reburial also show the heavy wear and low number of cavities consistent with a non-agricultural, hunter-gatherer way of life.
<table>
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<td>Sibley House Complex/American Fur Company</td>
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<td></td>
<td>Headquarters</td>
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<td>Pemton/ River Hills</td>
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<td>Crystal Lake Island Find spot</td>
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<td>21DK072</td>
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Table 4.2. Dakota County sites with Archaic components.
Figure 4.2. Archaic sites in Dakota County, Minnesota.
Woodland Period

500 BCE to 1200 CE

Three touchstones have come to define the Woodland Period for the Eastern Woodlands and Midwest – the manufacture of ceramic containers, the construction of earthen burial mounds, and the initial practice of agriculture. The spread and adoption of all three of these practices and innovations occurred at different times and to different degrees in different regions. The initial practice of making ceramics, building earthen mounds, and cultivating plants all have Late Archaic, or earlier, antecedents in parts of the country. By about 500 BCE in the Upper Midwest all three practices were becoming commonplace.

Woodland Period sites tend to greatly outnumber Archaic or Paleoindian sites. Part of the reason for that is certainly related to age and site preservation. Another factor that could account for the increase in the number of Woodland sites is that there are additional highly visible characteristics of the Woodland Period that were not practiced during Paleoindian or Archaic times. The manufacture of earthenware ceramics introduced a new and resilient class of artifacts. The construction of burial mounds and other earthworks left very visible evidence for a Woodland presence on the landscape. Still, the increase in the number of sites during the Woodland Period coupled with clear changes in settlement and subsistence practices be a reflection of an overall increase in population numbers.

Like the Archaic above, the Woodland Period has often been sub-divided into three categories – Early, Middle, and Late. However, Anfinson (1997) and Gibbon (2012) propose a two-tier division for the archaeology of Minnesota – Initial Woodland, incorporating the Early and Middle Woodland classifications, and Terminal Woodland, incorporating the Late Woodland classification and the transitional material culture between the Woodland and the following Late Precontact Period. We follow Anfinson and Gibbon’s framework here, but with reference to the prior three-tier framework.
Present during the Initial Woodland across much of the Midwest, including southeastern Minnesota, was a cultural manifestation known as Hopewell. Hopewellian sites tend to display evidence of participation in a broad network of interaction that involved the exchange of a variety of exotic raw materials, elaborate burial customs, and a shared style of artwork. Hopewell in Minnesota is related to the Havana Hopewell sub-category that was focused on the Illinois River valley and its surroundings. Two Havana-related archaeological phases have been developed for Minnesota – the Sorg Phase and the Howard Lake Phase. Both phases are defined by the presence of Havana-inspired ceramic styles: thick-walled, wide-mouthed jars with decorative bands or panels bearing a variety of bossed, stamped, and incised line decorations (Figure 4.4), and corner-notched, broad-bladed projectile points, such as Snyders and Manker styles (Gibbon 2012:96-97). Both Sorg and Howard Lake ceramics have been found in Dakota County in the Spring Lake area and at the Sibley House Complex. The Sorg Phase was defined by Johnson (1959) based on his excavation at the Sorg site (21DK001) and other Spring Lake sites. Howard Lake was defined by Wilford (1955) based on work at the Anderson site on Howard Lake and elsewhere in Anoka, Washington, and Houston counties. Admittedly, both Havana-related phases in Minnesota have received very little scholarly attention after their initial definitions. Often both kinds of pottery have been found at the same site, as is the case with the Spring Lake area, which calls into question the definitions of these archaeological phases as distinct based on ceramic attributes. Still, Havana-Hopewellian influences are clearly present in southeastern Minnesota, including Dakota County, but the mechanics behind those influences and interactions are not understood.

The Terminal Woodland Period begins about 500 CE and continues until about 1200 CE. Over these centuries, populations appear to have grown, as evidenced by a dramatic increase in the number sites dating to this era. Small settlements are common during this period, but there is also a trend toward the establishment of large villages. In Dakota County, this can be seen at sites such as the Bremer Village Site (21DK006), where Terminal Woodland (Late Woodland) materials have been found across the entire half-kilometer wide terrace (Fleming 2012, 2013, 2014; Jensen 1959; Meyer 1996). Terminal Woodland ceramics tend to be thin-walled, grit-tempered, globular jars with cord-marked surfaces. Decorations consist of a mix of single cord impressions, cord-wrapped-object impressions, and circular or wedge-shaped punctates (Figure
4.3). Madison-ware and related ceramics, followed by Angelo Punctated ceramics, which incorporates incised line designs, are most common in Dakota County, especially along the Minnesota and Mississippi Rivers. Perhaps as early as 500 CE, bow and arrow technology was being used in Minnesota. Terminal Woodland stone projectile points are small, triangular, sometimes with side-notching. Burial mound construction also saw changes during this period. Most notably is the tradition of building mounds in the shapes of animal effigies as well as long linear forms. There are no known effigy mounds in Dakota County. However, evidence of the tradition is nearby – effigy mounds are present in Goodhue County bordering to the south, Scott County to the west, and across the Mississippi River in Pierce County, Wisconsin (Rosebrough 2010). A long linear mound (Bremer Mound site, 21DK005) dating to the Terminal Woodland is on a bluff top overlooking Spring Lake in the north of Dakota County.

![Image of Terminal Woodland decorated ceramics from the Bremer Village Site (21DK006).](image)

**Woodland sites in Dakota County:**

There are 37 Woodland Period sites in Dakota County (Table 4.3 and Figure 4.5). Thirty were known prior to the 2017 survey, and seven found during the 2017 survey. While they are found across the entire county, the vast majority are located along the Minnesota and Mississippi Rivers. Fifteen sites attributed to the Woodland Period are mound sites (Figure 4.8). Only the
Bremer Mounds mentioned above have excavation data (Jenson 1959) and can be positively associated with this period of time. The others are assumed to be Woodland in age, but they could be later constructions. All of the known mounds in Dakota County are located in the Minnesota or Mississippi valleys. It is worth noting that three site numbers (21DK021, 21DK022, and 21DK023) were associated with mounds in southern Dakota County. These sites, identified by Edward Schmidt, have since been determined to be natural prairie (“mima”) mounds, rather than cultural (Finney 2010).

*Initial Woodland sites in Dakota County:*

Eight sites in Dakota County have Initial Woodland components (Table 4.4 and Figure 4.6). The age of these sites has been identified based on ceramic or projectile point styles. Most of the Initial Woodland sites in Dakota County are located in the vicinity of Spring Lake. The two exceptions are the Sibley House Complex near the confluence of the Minnesota River with the Mississippi River and the Hoff Site on Chub Lake.

*Terminal Woodland sites in Dakota County:*

Sixteen sites in Dakota County have Terminal Woodland components (Table 4.5 and Figure 4.7). Like the Initial Woodland sites, most of these are located along the Minnesota River or Mississippi River. Three outliers are in the southern half of the county: the Hoff site and two sites (21DK134 and 21DK135) along Plum Creek, a tributary of the Cannon River.
Figure 4.4. Havana-related vessel from the Sorg site (21DK001) along Spring Lake in Dakota County.

<table>
<thead>
<tr>
<th>Site #</th>
<th>Site Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>21DK001</td>
<td>Sorg Site</td>
</tr>
<tr>
<td>21DK002</td>
<td>Lee Mill Cave</td>
</tr>
<tr>
<td>21DK004</td>
<td>Ranelius</td>
</tr>
<tr>
<td>21DK005</td>
<td>Bremer Mound</td>
</tr>
<tr>
<td>21DK006</td>
<td>Bremer Site</td>
</tr>
<tr>
<td>21DK007</td>
<td>Nininger Mounds</td>
</tr>
<tr>
<td>21DK008</td>
<td>Black Dog Group/ Oanoska</td>
</tr>
<tr>
<td>21DK009</td>
<td>Kaposia Mounds</td>
</tr>
<tr>
<td>21DK010</td>
<td>Grand Avenue Mound Group</td>
</tr>
<tr>
<td>21DK011</td>
<td></td>
</tr>
<tr>
<td>21DK012</td>
<td>Buron Lane Mound</td>
</tr>
<tr>
<td>21DK013</td>
<td></td>
</tr>
<tr>
<td>21DK014</td>
<td>Pig's Eye Island</td>
</tr>
<tr>
<td>21DK016</td>
<td>Silk Mounds</td>
</tr>
<tr>
<td>21DK017</td>
<td>Mendota Mound Group I</td>
</tr>
<tr>
<td>21DK018</td>
<td>Mendota Mound Group II</td>
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<tr>
<td>21DK019</td>
<td>Bluff Mounds</td>
</tr>
<tr>
<td>21DK020</td>
<td></td>
</tr>
<tr>
<td>21DK031</td>
<td>Sibley House Complex/American Fur Company Headquarters</td>
</tr>
<tr>
<td>21DK034</td>
<td>William Pipeline Site</td>
</tr>
<tr>
<td>21DK042</td>
<td>Crystal Lake Island Find spot</td>
</tr>
<tr>
<td>21DK049</td>
<td>Rathburne Site</td>
</tr>
<tr>
<td>21DK065</td>
<td>Pahl Site</td>
</tr>
<tr>
<td>21DK068</td>
<td></td>
</tr>
<tr>
<td>21DK070</td>
<td>Murphy Farm #2</td>
</tr>
<tr>
<td>21DK072</td>
<td>Freitage Ridge Site</td>
</tr>
<tr>
<td>21DK089</td>
<td>Ravenna Mounds</td>
</tr>
<tr>
<td>21DK096</td>
<td>Ordway 1</td>
</tr>
<tr>
<td>21DK097</td>
<td>Ordway 2</td>
</tr>
<tr>
<td>21DK098</td>
<td>Ordway 3</td>
</tr>
<tr>
<td>21DK113</td>
<td></td>
</tr>
<tr>
<td>21DK114</td>
<td></td>
</tr>
</tbody>
</table>
Table 4.3. Dakota County sites with Woodland components.

<table>
<thead>
<tr>
<th>Site #</th>
<th>Site Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>21DK001</td>
<td>Sorg Site</td>
</tr>
<tr>
<td>21DK002</td>
<td>Lee Mill Cave</td>
</tr>
<tr>
<td>21DK006</td>
<td>Bremer Site</td>
</tr>
<tr>
<td>21DK096</td>
<td>Ordway 1</td>
</tr>
<tr>
<td>21DK097</td>
<td>Ordway 2</td>
</tr>
<tr>
<td>21DK031</td>
<td>Sibley House Complex/American Fur Company Headquarters</td>
</tr>
<tr>
<td>21DK113</td>
<td></td>
</tr>
<tr>
<td>21DK139</td>
<td>Boetcher’s Bay</td>
</tr>
</tbody>
</table>

Table 4.4. Dakota County sites with Initial Woodland components.
<table>
<thead>
<tr>
<th>Site #</th>
<th>Site Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>21DK001</td>
<td>Sorg Site</td>
</tr>
<tr>
<td>21DK004</td>
<td>Ranelius</td>
</tr>
<tr>
<td>21DK005</td>
<td>Bremer Mound</td>
</tr>
<tr>
<td>21DK006</td>
<td>Bremer Site</td>
</tr>
<tr>
<td>21DK034</td>
<td>William Pipeline Site</td>
</tr>
<tr>
<td>21DK096</td>
<td>Ordway 1</td>
</tr>
<tr>
<td>21DK098</td>
<td>Ordway 3</td>
</tr>
<tr>
<td>21DK031</td>
<td>Sibley House Complex/American Fur Company Headquarters</td>
</tr>
<tr>
<td>21DK065</td>
<td>Pahl Site</td>
</tr>
<tr>
<td>21DK113</td>
<td></td>
</tr>
<tr>
<td>21DK128</td>
<td></td>
</tr>
<tr>
<td>21DK134</td>
<td></td>
</tr>
<tr>
<td>21DK135</td>
<td></td>
</tr>
<tr>
<td>21DK138</td>
<td>Schaar's Rock Shelter</td>
</tr>
<tr>
<td>21DK139</td>
<td>Boetcher's Bay</td>
</tr>
</tbody>
</table>

Table 4.5. Dakota County sites with Terminal Woodland components.
Figure 4.5. Woodland Tradition sites in Dakota County, Minnesota.
Figure 4.6. Initial Woodland Period sites in Dakota County Minnesota.
Figure 4.7. Terminal Woodland Period sites in Dakota County Minnesota.
Figure 4.8. Mound sites in Dakota County, presumed to be associated with the Woodland Tradition.
Late Precontact Period

1200 – 1650 CE

The Late Precontact Period in southeastern Minnesota saw an intensification of agricultural practices, especially in the commitment to maize agriculture, the widespread use of underground storage pits, and aggregation into large semi-permanent villages. Trade networks established during the Woodland Period continued during the Late Precontact Period, but influences from southern Mississippian communities with ties to the massive cultural center at Cahokia near modern-day St. Louis and Plains Village communities of the prairies and plains to the west worked their way into the region. That said, the influences of three cultural traditions dominate the Late Precontact period in southeastern Minnesota – Mississippian, Plains Village, and Oneota. Mississippian and Plains Village materials are known to have originated outside of the Upper Mississippi valley. Oneota origins, on the other hand, are less clear. Two opposing hypotheses are generally considered by archaeologists: Oneota material culture reflects a migration into the Upper Mississippi valley, or, conversely, it reflects an in situ cultural development that stems from the preceding Woodland Period. As is often the case with arguments like this, a combination of the two scenarios is probably closer to the truth. The earliest Oneota dates, falling in the 900s CE, come from eastern Wisconsin (Overstreet 1997), but those are outliers. The earliest dates along the Upper Mississippi River are slightly later and come from the Red Wing area immediately south of Dakota County, dating to the 12th century (Schirmer 2016). Sites with Oneota materials are much more prevalent than Mississippian or Plains Village materials in southeastern Minnesota, with artifacts of the latter two being considered imports. Another manifestation that needs to be mentioned is the Silvernale Phase, situated in the Red Wing region. The Silvernale Phase sites are large villages placed on terraces along the Mississippi and Cannon rivers and the material culture represents an amalgamation of Mississippian-inspired materials, especially pottery vessels, along with lesser amounts of materials originating across the prairies and woodlands of greater Minnesota, Iowa, the Dakotas, Illinois, and Wisconsin. Both Oneota and Woodland materials are also common to Silvernale Phase sites. The Red Wing region, and the Silvernale Phase, is believed to have been a center for aggregation and economic and social interaction during the Late Precontact period (Fleming 2009).
Ceramics are the most numerous and easily diagnostic form of material culture from the Late Precontact Period, differing from Woodland ceramics visually from a design-perspective and in construction. Most Oneota vessels are thin-walled, shell-tempered globular jars with smooth exterior surfaces and prominent high and sometimes out-flaring rims bearing abstract designs incised onto the jars’ shoulders. Mississippian ceramics also tend to be shell-tempered, but were made in a variety of forms. Mississippian or Mississippian-inspired vessels, such as those of the Silvernale Phase, in Minnesota are recognizable by their rolled rims, angular shoulders, curvilinear incised shoulder designs, and smudged, slipped, and/or burnished exterior surfaces. Plains Village ceramics, also dominated by the jar form, are grit-tempered vessels with smooth surfaces, high or s-shaped rims bearing incised designs. Some Plains Village ceramics are also influenced by Mississippian styles, incorporating rolled rims and other Mississippian design elements.

Figure 4.9. Oneota vessel found in the Lee Mill Cave (21DK002). Kenneth Klink Collection (Johnson and Taylor 1956).
Late Precontact sites in Dakota County:

Only six Late Precontact sites are known in Dakota County (Table 4.6 and Figure 4.10), and all were recorded prior to the 2017 survey. Five sites are Oneota – 21DK002, 21DK003, 21DK004, 21DK006, and 21DK031. The first four are in the Spring Lake area. One is a cave site - 21DK002, the Lee Mill Cave (Figure 4.9 above, and 4.10 below), located in the limestone outcropping beneath Schaar’s Bluff. The Hamm, Ranelius, and Bremer sites (21DK003, 21DK004, and 21DK006) are open-air sites along what is now the south shore of Spring Lake, a reservoir created by the Hastings Dam. 21DK031, the Sibley House Complex, is located at the confluence of the Minnesota with the Mississippi River. The Pahl site (21DK065), is located within the floodplain of the Minnesota River above 21DK031. The collection includes Terminal Woodland sherds and two sherds from a Mississippian-inspired vessel with an angled shoulder, grit-tempering, and smoothed exterior surface. The grit-tempering suggests a Plains Village, possibly Cambria, attribution. However, it may also represent an early Mississippian influence on a Terminal Late Woodland community.
Figure 4.10. Late Precontact Period sites in Dakota County, Minnesota.
Contact Period

1650 – 1837 CE

The Contact Period represents the period of initial interaction between Native Americans living in Minnesota and Euroamerican explorers and colonists. A dynamic period of social change for all involved, the period begins with proto-historic years – those decades that precede face-to-face interactions between the two populations, but where European goods enter into Native trade networks and eastern Native populations were pushed westward into the western Great Lakes and eastern prairies – followed by direct interaction and eventual establishment of permanent Euroamerican settlements in what had been Native lands. The Contact Period ends with the Treaty of 1837 in which the Dakota ceded all of their lands east of the Mississippi River to the United States.

Two Native groups are visible in the archaeological record of the Contact Period in southeastern Minnesota – the Dakota and the Ioway – although others were almost certainly present. Ioway are associated with proto-historic Orr-phase Oneota sites found in the Root River and Upper Iowa River valleys of extreme southeastern Minnesota and northeastern Iowa dating to between 1625 and 1700. French documents identify them in that region by 1670s (Gibbon 2012:171), and Orr Phase sites have produced French trade goods. While earlier Oneota materials in Dakota County were discussed above, no diagnostic Orr phase Oneota ceramics, identifiable by the pottery type Allamakee Trailed, have been found in Dakota County, suggesting an Ioway migration out of the area.

Minnesota is well-known as the Dakota homeland. Dakota settlements dating across the entire span of the Contact Period are known along the Mississippi and Minnesota Rivers, in the Lake Mille Lacs area and elsewhere across much of Minnesota. The confluence of the Minnesota River with the Mississippi River at the north end of Dakota County, is known as Bdote in Dakota – the point of origin and a center point for spirituality for Dakota people. Fitting that the people Dakota County is named after have their spiritual point of origin along the shores of the county. The Bdote area has evidence for occupation and human activity that spans most of the human
history of the state, and is the site of numerous burial mound groups. While the burial sites are attributed to the Woodland Period, that does not presuppose that they are not ancestral Dakota in origin. The Bdote area and nearby Pilot Knob (*Oheyawahe*), above Bdote in Dakota County figure prominently in the memories and oral traditions of Dakota people. The region continued to be used as an area for burials into the Contact Period and beyond. Evidence from a Euroamerican perspective include explorer Zebulon Pike’s descriptions scaffold burials in the area in his journals 1805. Seth Eastman, stationed at nearby Fort Snelling, also painted several landscapes of the area of Bdote and Oheyawahe in the 1840s that attest to the Dakota presence (Figure 4.11). The area continues to be recognized as a highly significant landscape for Dakotas and other native tribes in the Midwest and Plains. It is worth noting here that Kaposia’s village, originally located across the Mississippi River in Ramsey County during the Contact Period, was later moved to the west side of the river to the area of Kaposia’s Landing park in South Saint Paul after the 1837 Treaty, signed September 29, 1837, in Washington, D.C., gave the United States Dakota lands east of the Mississippi River. A strong Dakota connection to the Twin Cities area, including Dakota County, continued after the 1837 Treaty and continues to this day.

![Image](image.png)

**Figure 4.11.** Seth Eastman watercolor of the Bdote area with Fort Snelling in the background, circa 1840s.

**Contact Period sites in Dakota County:**

Six sites in Dakota County are associated with native people of the Contact Period (Table 4.7 and Figure 4.12) and all are in or near the Bdote area. Two are Dakota burial sites (21DK025,
21DK026) located on the bluff tops overlooking the Minnesota River. Two are Dakota habitation sites in the floodplain of the Minnesota River (21DK035, 21DK036), and two are Euroamerican sites of interaction with the Dakota (21DK024, 21DK031).

<table>
<thead>
<tr>
<th>Site #</th>
<th>Site Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>21DK002</td>
<td>Lee Mill Cave/Mill Cave Number 1</td>
</tr>
<tr>
<td>21DK003</td>
<td>Hamm Site</td>
</tr>
<tr>
<td>21DK004</td>
<td>Ranelius</td>
</tr>
<tr>
<td>21DK006</td>
<td>Bremer Village</td>
</tr>
<tr>
<td>21DK031</td>
<td>Sibley House Complex/American Fur Company Headquarters</td>
</tr>
<tr>
<td>21DK065</td>
<td>Pahl Site</td>
</tr>
</tbody>
</table>

Table 4.7. Dakota County sites with Contact Period components.
Figure 4.12. Early Contact Period sites in Dakota County, Minnesota.
5. SURVEY OBJECTIVES AND METHODS

Survey Objectives

The primary objective of the Dakota County Archaeological Survey was to identify new Precontact or Contact era (pre-1837) archaeological sites. One of the overall objectives of the Statewide Archaeological Survey effort administered by the Minnesota Historical Society, of which this survey is a part, is to examine little-known parts of Minnesota for archaeological sites. The examination of individual counties with few sites is one way to sample the state and “fill in blanks.” Dakota County, being within the greater Twin Cities Metro Area, has been subject to numerous prior archaeological investigations, as outlined previously. At the start of the survey, well over 200 archaeological projects had been completed in the county resulting in 106 sites recorded. The majority of these sites are located in the Minnesota and Mississippi River valleys at the north of the county (Figure 5.1). This pattern is reinforced when Historic sites are removed. Given the well-known use of these two major rivers for transportation and settlement, this distribution of sites is not surprising. Secondly, these regions are within the ever-expanding suburbs of the city of St. Paul, stimulating additional survey activities and explorations over the past 150 years. Rather than duplicating what is already known, we determined to focus our field work on the much lesser-known and more rural southern two-thirds of the county. This would allow us to identify sites in areas that may be subject to disturbance from the inevitable southward expansion of the Twin Cities, to examine under-studied areas, and to focus our work on two parallel minor rivers (in comparison to the Mississippi and Minnesota) and their watersheds – the Vermillion River and Cannon River/Chub Creek watersheds (Figure 5.2). In addition to these two broad geographic areas, we examined the central Dakota County moraine area south of the Vermillion River and the pothole lakes area of the southwestern part of the county.
Literature search, spatial data, and GIS Methods

The project began with the collection of site forms, reports, and relevant spatial data for the county. Site forms were obtained from the Office of the State Archaeologist (OSA). Reports for archaeological projects were obtained from the OSA, the State Historic Preservation Office (SHPO) and the Cultural Resources Department of the Minnesota Department of Transportation (MnDOT). All documents were scanned and are archived on the Science Museum of Minnesota’s (SMM’s) server. Site-specific collections and collections documentation were obtained from their repositories – SMM and the Minnesota Historical Society (MNHS).

Spatial data for Dakota County were obtained from a variety of sources and were used to guide our selection of targets for field survey. All spatial data for the project were maintained within the project geographic information system (GIS) at SMM. MnDOT’s Cultural Resources Department provided shapefiles for sites, alpha sites, and previous surveyed areas. MnDOT also provided MN Model data for Dakota County, which predicts areas of high and low site density based on previous finds and features of the landscape. LiDAR data, which provides bare-earth topographic models, and historical aerial images were downloaded from the Minnesota Geospatial Information Office FTP online server, accessible at ftp://ftp.gisdata.state.mn.us/pub/data/ elevation/lidar/county/dakota/. Landowner parcel, hydrographic, public land, DNR property, wetlands, and the Minnesota county lines were all downloaded from Minnesota Geospatial Commons (https://gisdata.mn.gov/). Modern aerial imagery and USGS topographic maps were all used from the ArcMap backgrounds that ESRI has provided for users.

GIS analyses were conducted to aid field investigators in pinpointing potential habitation locations for surveying. The intent was to find relatively high, dry and flat areas with access to water. In Dakota County, general landforms that met these criteria were hills (i.e., glacial features such as moraines, kames and drumlins) and river bluffs/terraces. Identifying these landforms involved implementing several topographic analyses that utilized 3-meter resolution LiDAR elevation data (i.e., DEM or digital elevation model; MnGeo 2017a).
Areas flat enough for potential habitation were defined by slopes less than or equal to 2%. To find prominent high and dry features, the Topographical Position Index (TPI) as well as a custom algorithm utilizing an inverted DEM were used. TPI measures the deviation of each DEM pixel in relation to neighboring pixels; as such, it can define landform features such as hilltop edges, bluffs/terraces, slopes and valley bottoms. Use of TPI in archeological applications is discussed in De Reu et al. (2011). Our analyses used a threshold TPI of 0.5 or higher to identify hilltop edges and bluffs/terraces; however, the TPI analyses did not delineate flat areas associated with these features (i.e., such areas had to be manually identified and delineated). To locate and delineate larger flat areas encompassed by higher TPI features in a more automated manner an “inverted” DEM procedure was used. An inverted DEM is the original DEM “turned upside down” (i.e., hills become depressions; depressions become hills). This inverted DEM approach enables use of cut-and-fill and depression-finding type GIS analyses to delineate larger hill (now depressional) features not identified by the TPI analysis. Overall, a combination of both approaches (TPI and inverted DEM) in conjunction with identified flat areas were employed in this study, and the resulting potential sites were reduced to those within 1 km of prehistoric water.

Prehistoric water sources were defined as lakes and rivers present today as well as those predicted to exist, or otherwise known to exist, in the past. Prediction of prehistoric water utilized the Drainage Index (DI) available in the SSURGO digital soil survey (Schaetzl et al. 2009). In this study, in addition to current water sources, any areas with a DI value of 81 or greater were considered prehistoric water. Also, prehistoric lakes possibly drained post-settlement were investigated by comparing locations of lakes on the original 1840s/1850s Public Land Survey (PLS) digitized plat maps (MnGEO 2017b) with lakes currently existing today; however, no drained lakes were identified using this analysis. In addition to lakes and rivers, mapped springs were also included as utilizable water sources. The data that came from this data set helped with determining where we would focus for obtaining landowner permission.

A shared spreadsheet was created that included the legal parcel number, landowners contact information, and property information from the county GIS website. This spreadsheet was updated to document attempted contact and access or denial from landowners. Throughout the
project, a working ArcGIS map was kept up to date with accessible, denied and already surveyed properties and updated from field notes after every field day.

**Property Access Methods**

Obtaining landowner permissions proved to be the single largest obstacle to the survey. We attempted to contact 137 individual landowners for access to their properties. Many of those individuals owned multiple properties in the county. We attempted to contact individuals via phone, email, and in person. Of those, we were able to actually talk to only 41 individuals. The others were either not responsive or we were not able to find contact information. Of the 41 individuals we actually spoke to, 22 granted us access to survey their properties. So, we had a slightly better than 50% success rate in gaining access to private property when we were able to talk to landowners.

Dakota County Property Information Search ([https://gis2.co.dakota.mn.us/WAB/PropertyInformationPublic/index.html](https://gis2.co.dakota.mn.us/WAB/PropertyInformationPublic/index.html)) was used to find landowner names and addresses. Internet searches were also valuable for finding additional contact information (phone numbers and email addresses). Property and landowner information was maintained in a spreadsheet linked to the GIS.

Since many team-members attempted to contact landowners, we found using a script to be helpful. The script was not used verbatim, but rather was a helpful crutch for some staff. Understandably, most landowners had many questions. Those who granted access for survey were generally excited to help and interested in what we were finding throughout the county.

We attempted to raise awareness of the project through events, hand-outs, and word-of-mouth. In the early spring prior to field work we offered a lecture at the Dakota Historical Society and set up a table at the Owatonna Artifact show to connect with collectors and others knowledgeable about the county. We regularly promoted the survey to museum visitors at SMM in the Museum’s visible lab and behind the scenes events. Hand-outs and promotional materials
created for the project include a binder with pictures of artifacts and field work and a tri-fold brochure to hand out at events, to mail to land-owners, and to hand out to interested community members encountered during field work. We also had magnets created to affix to field vehicles while doing field work so passers-by would know who we are (Figure 5.3).

While surveying we typically attempted to contact landowner of adjacent properties in person. The vehicle magnets were especially helpful for that. There were many times that neighbors came out to talk with us to see what we were doing, and some allowed us access to their properties.

Field Methods

Survey was planned as primarily pedestrian surface reconnaissance of cultivated fields in the spring and early summer and primarily shovel test survey in the late summer and fall. Pedestrian survey was assumed to offer maximum coverage and efficiency, given the amount of southern Dakota County that is cultivated, but becomes less efficient once grown crops obscure views of the ground. Shovel test survey was reserved for areas of high potential without surface visibility, since the process is much less efficient and labor intensive.

Surface surveys were conducted systematically, with transect intervals of two and five meters, and typically oriented parallel to the crop rows (Figure 5.4). Two-meter intervals were employed in fields that were small and/or in areas of high archaeological potential (i.e. elevated areas near water). Transects spaced wider were employed in areas of large fields that did not appear to have high archaeological potential. In most cases, a field was systematically surface surveyed in its entirety. However, for some very large agricultural fields, just the portions with high archaeological potential were systematically surveyed. If a site was discovered while performing a surface survey in five-meter intervals, the area was re-walked in two-meter intervals. The locations of all artifacts discovered while conducting a surface survey were marked with pin flags to aid in mapping site boundaries and the identification of artifact concentrations. After the boundaries of a site were established and artifact concentrations mapped, the artifacts were
collected and placed into labeled bags. A one-inch soil probe sample was taken at archaeological sites that contained more than a few pieces of lithic debitage in order to access the vertical integrity of the site.

Shovel tests pits were dug between the middle of July and the middle of October in wooded and grassy areas (Figure 5.5). Shovel tests were square, about 30 to 35 centimeters on a side (Figure 5.6), and dug to a depth of 100 centimeters unless obstructed (e.g. by a large root or bedrock). Excavated soil was screened through quarter-inch mesh. Grass plugs, about five centimeters thick, were examined but kept intact and unscreened if requested by the landowner. Shovel tests were typically spaced 10 meters apart. Some larger landforms were tested in 20-meter intervals. When artifacts were discovered, additional shovel tests were dug at five-meter intervals along the transect or in cardinal directions.

Each survey area was assigned a temporary field number that was used to track artifacts and other records. All recovered artifacts were placed in bags labeled by survey area, depth, excavator name, date, and shovel test number. Survey area, depth, excavator name(s), date of excavation, and shovel test number were also recorded for each soil transition encountered in the shovel tests. Soil colors were determined using the Munsell Soil Color Book.

**Lab and Cataloguing Methods**

Upon returning from the field, all artifacts were washed. Different methods of washing were applied based on the material of the object. Only lithic chipping debris were put in a container of water and scrubbed using a soft toothbrush. Ceramic, bone, and lithic tools were dry brushed instead because they were either too fragile to be submersed in water or could be used for further analysis, in which being scrubbed would affect the results.

Artifacts were catalogued by site and provenience according to SMM cataloguing methods for archaeological materials. Field numbers for survey areas were used for sites until an official site number was assigned by the OSA. Cataloguing proceeded by sorting artifacts according to
major class: lithic, ceramic, fauna, and flora categories. Lithic artifacts were size graded using screens with four mesh sizes (G1: >1”, G2: ½-1”, G3: ¼-½”, and G4: <¼”), raw material identified, and described. Ceramic artifacts were classified according to vessel portion, temper, surface treatment, and, if present, decoration. Faunal remains were classified according to identification, element, and condition (e.g., burned, calcined) where possible. Diagnostic artifacts (i.e., formal tools) were photographed and given individual ethafoam storage mounts. Other artifacts were bagged in archival, acid-free plastic artifact bags with a white writing block labeled with site and provenience information.
Figure 5.1. Archaeological sites in Dakota County (21DK001 – 21DK106) prior to the present study.
Figure 5.2. Major watersheds in Dakota County. The Vermillion and Cannon/Chub Creek watersheds were the primary focus of this survey.
Figure 5.3. The 2017 University of Minnesota/Science Museum of Minnesota Archaeological Field School participated in pedestrian survey during June. Vehicle magnet is visible on one of the field vehicles.
Figure 5.4. Pedestrian survey.
Figure 5.5. Shovel test survey.

Figure 5.6. Shovel test pit in the process of being dug.
6. RESULTS: COLLECTION AND SITE REVIEWS

Part of this project involved examining institutional and, if available, private collections with Precontact or Contact era materials from Dakota County and summarizing previously recorded sites. The majority of site specific collections from Dakota County are curated at the Minnesota Historical Society. The Science Museum of Minnesota holds collections from 21DK001-006, 21DK043, and 21DK096-099. Artifacts from some recorded sites that are isolated find-spots were retained by the landowners and are not available for examination. These include 21DK039, 21DK040, 21DK042, 21DK049, 21DK064, 21DK069, 21DK070, and 21DK072.

Discussion of previously identified sites and collections follow discussion of non-site-specific collections from the county below. Non-site-specific institutional collections or collections with uncertain provenience but allegedly from Dakota County can be found at the Dakota County Historical Society, Cannon Falls Historical Society, the Randolph Historical Society, and the Minnesota Historical Society.

Finally, privately held collections from the county were sought out. One private collection that contained a fluted point with good location information resulted in the recording of a new site (21DK140). An extensive private collection mainly from the Spring Lake area is known to be held by Mr. Kenneth Klink. Mr. Klink made the collection over many decades having lived in the Spring Lake area and collected from the lake shore on a regular basis. Fleming had seen the collection on one occasion in the early 2005 (Figure 6.1), which includes several reconstructed vessels and numerous complete projectile points and other stone and bone tools. Sadly, Mr. Klink was not responsive to repeated attempts to access and examine the collection for this project. Should Mr. Klink be amenable at a future date, this significant collection should be inventoried and described by professional archaeologists.
Figure 6.1. Photo of display of Klink Collection taken in 2005.

Collections reviews

Dakota County Historical Society

The archaeological collections from Dakota County at the Dakota County Historical Society are mainly within the collection of Fred Lawshe, the founder of the Dakota County Historical society and a prominent collector for the area during the first half of the 20th century. Lawshe’s ledger and catalogue sheets are the only documentation for this collection. The collection includes artifacts from two different areas in the county: the Nininger area near Spring Lake, the Kaposia Park area in South Saint Paul.

Artifacts from the Nininger area include eight projectile points, one drill and three marine shell beads (Figures 6.2 – 6.3). The majority of the Nininger projectile points appear to be made of Burlington or Maynes Creek cherts from Iowa. The Nininger projectile points range in styles representing the early Archaic through Middle Woodland Period. The raw materials and age ranges are roughly compatible to those in the excavated collections from the area held by the Science Museum. Shell beads were observed in the Klink collection from the area in 2005, too, but were not examined in detail.
The collection said to be from the Kaposia Park area of South Saint Paul includes 26 projectile points (Figure 6.4). Five additional projectile points, three scrapers, a granite grooved maul, and blue glass beads (Figures 6.5 and 6.6) are labeled as being from the area around the historic Kaposia Village, a now disturbed floodplain area along the Mississippi River also in South Saint Paul. The projectile points represent styles of the Late Archaic, Initial Woodland, and Terminal (Late) Woodland period, with the majority being Initial Woodland in age. The blue glass beads said to be from the Kaposia Village are historic, and so are quite likely associated with the Dakota village.

Figure 6.2. Nininger area projectile points at the Dakota County Historical Society.

Figure 6.3. Marine shell beads from the Nininger area at the Dakota County Historical Society.
Figure 6.4. Projectile points from the Kaposia Park area of South Saint Paul at the Dakota County Historical Society.
Figure 6.5. Stone tools from the Kaposia Landing area of South Saint Paul at the Dakota County Historical Society.

Figure 6.6. Blue glass beads from the Kaposia Landing area of South Saint Paul at the Dakota County Historical Society.
Cannon Falls Historical Society

The Cannon Falls Historical Society holds an archaeological collection, but only one artifact is said to be from Dakota County: a corner-notched projectile point thought to have been found in the Pine Creek area, a tributary to the Cannon River (Figure 6.7).

Randolph Historical Society

The Randolph Historical society has a small collection of stone tools, but it is not known if they were found in Dakota County.

Brower/Lewis Collection, Minnesota Historical Society

The Brower/Lewis collection at the Minnesota Historical Society includes a variety of projectile points and other stone tools believed to be from Dakota County. As mentioned previously, Jacob Brower is known to have not spent time collecting in Dakota County. Although Brower is known to have been careful about his attributions, if he received these artifacts from other
individuals, it is possible that material said to be from Dakota County was not. Some material in this collection was collected by Theodore Lewis, also known to be careful about maintaining records of where artifacts originated. The Lewis material includes eight Precontact stone tools and a flint gunflint from the Mendota/Bdote area and a triangular projectile point from the Nininger area (Figure 6.8 – 6.9).

Dakota County projectile points in the Brower/Lewis Collection that do not have locational information beyond a county affiliation represent a variety of styles and ages ranging from Early Archaic through Terminal Woodland (Figures 6.10 – 6.13). Raw materials are varied and reflect materials found in excavated collections. Some materials, such as banded Cobden/Dongala chert are uncommon from the area, so might represent artifacts from other areas. The collection does not include any ceramic specimens.

Figure 6.8. Stone tools from the Mendota/Bdote area in the Brower/Lewis Collection at the Minnesota Historical Society.
Figure 6.9. Terminal Woodland or Late Pre-contact projectile point from the Nininger area in the Brower/Lewis Collection at the Minnesota Historical Society.

Figure 6.10. Early Archaic Graham Cave and Kirk style projectile points from Dakota County in the Brower/Lewis comparative collection at the Minnesota Historical Society.
Figure 6.11. A variety of Archaic side-notched projectile points from Dakota County in the Brower/Lewis collection.

Figure 6.12. Examples of Kramer/Adena/Dickson/Waubesa style cluster, Late Archaic to Initial Woodland projectile points from Dakota County in the Brower/Lewis collection.
Reviews of previously recorded sites and collections

All Precontact and Contact Era sites recorded prior to this project are summarized below. The summaries were derived from combinations of the state site files, reports and publications, examinations of institutional collections, examinations of current aerial images and site visits. Each site includes location, collection repository (if known), site setting, description of work done at the site, a discussion, and an assessment of the site’s current condition, if it could be determined from site forms, aerial imagery, or visits.

21DK001

Site Name: Sorg

Collection Location: Science Museum of Minnesota
Physical Setting:

The site is located on an outwash plain that fans out at the base of a bluff, overlooking the eastern side of Spring Lake. Prior to the construction of the Hastings Lock and Dam in 1931, the area that is now Spring Lake was a large, spring-fed wetland. Water levels have since risen by as much as 40 feet, eroding portions of the site. Gullies from the uplands cut through the site as well, especially the southern portion.

Methods Employed:

Elden Johnson, accompanied by college and high school students from the Twin Cities area, investigated the site in the 1950s as a part of the Spring Lake Survey (Johnson and Taylor 1956; Johnson 1959). Johnson undertook the survey due to the high archaeological potential of the area, as well as the area’s vulnerability to erosion and industrial development. Johnson dug a total of 22 units at the site in 1953, 1954, and 1956. The 106 Group dug shovel tests within the Spring Lake Park Reserve in 2004 (Adams 2005). Adams and the 106 Group investigated the site in association with the construction of Schaar’s Bluff Cultural Center.

Results and Discussion:

Johnson’s excavations of the site uncovered a total of 11 features. The two most notable features were a rectangular hearth and a crushed, in situ pottery vessel. Comprised of limestone pieces a few inches in diameter, the hearth had dimensions of 2.9 feet by 2.2 feet and was associated with burnt pottery sherds. The in situ pottery vessel was located beneath the southern portion of the hearth feature and associated with four waterworn cobbles, leading Johnson to propose that the cobbles were used to hold up vessel and/or to cook. Carbon from the hearth feature that overlaid the vessel dated to 800 CE, plus or minus 200 years – dating the hearth, but not the vessel. Incidentally, this was the first radiocarbon date obtained for an archaeological site in the state of Minnesota.
Johnson recovered a large number of pottery sherds and lithic artifacts from the site. The lithic artifacts Johnson found include debitage, drills, cores, hammerstones, knives, scrapers, gravers, and side-notched, corner-notched, and stemmed projectile points. The majority of the lithic artifacts were made from Prairie du Chein Chert (described as “oolitic chert”). All but one piece of pottery from the site, which was shell-tempered, were grit-tempered. Over 70% of the pottery sherds had a cord-marked surface. Johnson discerned two ceramic types at the Sorg site, Banded Dentate (see Chapter 4) and Zoned Dentate. The banded variant of pottery was predominant at the site, while the zoned variant appeared exclusive to it. Three bone tools and a perforated, clam shell hoe were also found by Johnson. Based on the projectile point and pottery types, Johnson dated the site from the Havana-Related Middle Woodland to Terminal (Late) Woodland periods. Johnson was not able to determine whether the site represented a temporary camp or semi-permanent village, however.

During the 2004 survey, Adams uncovered a projectile point, small mammal bones, and turtle remains. The artifacts were discovered to the south of Johnson’s excavations, extending the boundaries of the site.

**Site Status:** The site form indicates that portions of the site may be intact, but erosion, residential activity, and historic quarrying have destroyed other areas. The site likely extends into Spring Lake.
Figure 6.14. Initial (Middle) Woodland Havanoid Sorg Zoned Dentate sherd from the Sorg site (21DK001).

**21DK002**

*Site Name:* Lee Mill Cave  
*Collection Location:* Science Museum of Minnesota

**Physical Setting:**  
The site, elevated about 75 feet above the eastern shoreline of Spring Lake, is associated with a small, dolomite cave. The cave is about 15 feet wide at the mouth, the widest portion of the cave, and extends for at least 20 feet into the bluff. Portions of the roof have collapsed and dammed the entrance to the cave, allowing sediment to accumulate. A talus slope reaches the cave from the base of the bluff. 21DK138, another rock shelter site, is in the immediate vicinity.
**Methods Employed:**

Kenneth Klink reported the site in the late 1940s (Johnson and Taylor 1956; Johnson 1959). Elden Johnson of the Science Museum of Minnesota excavated test units in front of and within the cave.

**Results and Discussion:**

Johnson encountered four features at the cave site. The features Johnson discovered consisted of two hearths and two trash middens. A large number of lithic artifacts, including debitage, knives, scrapers, and un-notched, corner-notched, side-notched, and stemmed projectile points were found during the excavation. The majority of the lithic artifacts were made from Prairie du Chien Chert (described as “oolitic chert”). A large amount of pottery was also found. Slightly over half of the pottery was grit-tempered, while the remainder was shell tempered. Small and large mammal bones, bird bones, fish bones, clam shell fragments, turtle remains, and a single piece of maize were found as well. The consistency in size of the fish otoliths led Johnson to propose that a selective means was employed to harvest the animals. A small amount of human remains were also encountered, some of which were associated with a rock fall. Johnson concluded that the cave had been used intermittently over an extended period and contained Archaic, Havana-Related Woodland, and Oneota (Figure 4.9), components. Boszhardt (1996) noted the presence of Terminal Woodland Angelo Punctated sherds in the collection, as well.

**Site Status:** Rock falls, erosion, recent recreation, and archaeological activities have destroyed most of the site. The cave extends much further into the bluff than the SMM excavations. Portions of the inner cave may yet have intact deposits, as may the area outside of the cave. This information is based on site verification by Johnson.
Figure 6.15. Terminal Woodland Angelo Punctated sherd (right) and Late Precontact Oneota sherd (left) from the Lee Mill Cave site (21DK002).

21DK003

Site Name: Hamm

Collection Location: Science Museum of Minnesota

Physical Setting: The site overlooks the shore of Spring Lake and probably extends into the lake.

Methods Employed: Elden Johnson excavated a single trench at the site in 1952 (Johnson and Taylor 1956).

Results and Discussion: Johnson discovered lithic debitage and shell-tempered pottery sherds at the site. This site has long been reported in the wrong location. It is along the shore of Spring Lake near Hamm’s Bay, west of Bud Joseph’s site (21DK043) in the western part of the Spring Lake Reserve.
Site Status: The site is located within the Spring Lake Park Reserve, so is protected. Erosion from Spring Lake has damaged the site, indicated by aerial review. Intact deposits may exist.

21DK004

Site Name: Ranelius

Collection Location: Science Museum of Minnesota

Physical Setting:

The site is located on a peninsula-like terrace that overlooks the southern shore of Spring Lake. The Mississippi River valley wall is about half of a mile to the south of the site.

Methods Employed:

Leland Cooper and Elden Johnson excavated portions of the site in 1954 and 1955 (see Johnson and Taylor 1956; Johnson 1959). In 1954 Cooper and Johnson dug excavation units throughout the site, returning in 1955 to dig trenches on the northeastern most protuberance of the terrace associated with the site. Edward Fleming and The Science Museum of Minnesota returned to the site in 2010 (Fleming and Hager 2010), directing a geophysical survey (Johnson 2010) and excavating 12 units and a number of shovel tests.

Results and Discussion:

Excavations at the site in 1954, 1955, and 2010 uncovered numerous features (mostly large, basin-shaped pits and hearths), consistent with a habitation. Artifacts found at the site include projectile points, end scrapers, pottery sherds, and bone and groundstone tools. The prevalence of thin grit-tempered and shell-tempered pottery sherds, as well as the presence of small, side-notched and un-notched projectile points, suggests that the site primarily dates to the Terminal
Woodland and Late Precontact periods. Two Archaic-style projectile points and several Initial (Early) Woodland, Waubesa-type stemmed projectile point stems indicate that the site was occupied at an earlier date as well (Finney 2000, Fleming and Hager 2010).

**Site Status:** The site is largely intact due to being integrated into the Dakota County Parks system and redeveloped into a forested landscape. Field verification of this was made during the 2010 revisit of the site.

**21DK005**

**Site Name:** Bremer Mound

**Collection Location:** Human remains, Hamline University.

**Physical Setting:**

The site is a pair of mounds situated on a terrace that overlooks the southern shoreline of Spring Lake. A multi-component habitation site, 21DK006, is located on a terrace about 50 feet lower in elevation, between the mounds and Spring Lake. The Mississippi River Valley wall is around half of a mile to the south and east of the site. One of the mounds is linear, about 220 feet long, 50 feet wide, and 2 feet high. The second mound was located about 40 feet to the west of the first and is conical/ovoid in shape. The second mound had a diameter of around 50 feet and a height of 2 feet.

**Methods Employed:**

Results and Discussion:

Johnson encountered three different types of burials in the linear mound. The first type was a secondary bundle burial placed on the floor of the mound. The second type was a primary extended burial in a pit lined with limestone slabs, and the third type was a cremation of at least eight individuals encased in baked red clay on the mound floor. A few thin grit-tempered pottery sherds and triangular projectile points were also found in the mound. Johnson was not able to discern any specific burials within the conical mound, but he did encounter a cache of mussel shells. The mounds likely date to the Terminal (Late) Woodland periods (Jenson 1959, Arzigian and Stevenson 2003).

Site Status: Much of the linear mound is still intact and visible via LiDAR and in person. The circular mound was mostly destroyed by the 1955-56 excavations.

Figure 6.16. LiDAR image showing linear mound at the Bremer Mounds site (21DK005).
Site Name: Bremer Village

Collection Location: Science Museum of Minnesota

Physical Setting:

The site is located on a terrace that overlooks southern shore of Spring Lake. A mound group (21DK005) is situated just to the south of the site but at a higher elevation. The Mississippi River Valley wall is a little over half of a mile to the south and east of the site.

Methods Employed:

Elden Johnson (SMM) surveyed and excavated the site in 1952, 1953, 1955, and 1956. Johnson dug a total of 39 units at the site (Johnson and Taylor 1956; Johnson 1959; Jenson 1959). Scott Meyer shovel tested and excavated two 1x2m units in 1996. Edward Fleming (SMM) and Gilliane Monnier (UMN) carried out shovel test survey and excavations for UMN/SMM field schools from 2011-2013, and additional data collection in 2014. Shovel testing crossed the entire site and block excavations were performed in four blocks of contiguous 1x1m units in the central and eastern parts of the terrace. A single 1x1m unit was excavated in the western part of the site when a hearth feature was encountered in shovel test pit.

Results and Discussion:

Artifacts have been found across the entirety of this broad terrace overlooking what is now Spring Lake. Shovel testing in 2011-2014 indicates that the debris is not consistently deposited across the terrace, suggesting a series of camp sites. Additionally, the archaeological materials do not extend to the southernmost edge of the terrace where it rises dramatically. Excavations at the site in the 1950s took place mainly in the western third of the site, but a series of units were placed along a baseline that extended eastward across the terrace. These excavations resulted in
the discovery of three features - a hearth, a refuse midden, and a possible structure remnant, and a large artifact collection (Jensen 1959). Fleming and Monnier’s excavations revealed several pit and hearth features and additional artifact samples currently under analysis at SMM and UMN. Meyer’s work occurred on the eastern half of the terrace. This collection has been lost.

Pottery found at the site indicate Initial (Middle) and Terminal (Late) Woodland and Late Pre-contact (Oneota) occupations, with the Terminal Woodland being the most common. Sorg/Howard Lake and Madison wares predominate. Johnson and Jenson defined the Late Woodland type Bremer Triangular Punctated due to a high frequency of thin, grit-tempered sherds decorated with fine wedge-shaped punctations. Fleming’s and Monnier’s excavations revealed a similar ceramic assemblage – small amounts of Sorg/Howard Lake Havanoid ceramics and large amounts of Madison ware and Bremer Triangular Punctated sherds (see Chapter 4). Shell-tempered Oneota sherds were found in one block on the eastern side of the terrace in 2011 and 2012.

Lithics are compatible with the ceramics, with the addition of Archaic projectile points, as well as the stem of a Late Paleoindian Agate Basin-style projectile point found on outwash sands one-meter deep in a shovel test pit. Mara Taft (2015) wrote a Master’s thesis focused on the lithic assemblage from the 2011-2014 excavations.

**Site Status:** The site is largely intact. The Mississippi River Trail crosses the south part of the terrace with shovel testing in 2011-2014 indicating little cultural material in this area. Some of the terrace, and the site, has certainly eroded into present-day Spring Lake. This has all been confirmed by visual inspection during the latest survey investigations in 2014.

**21DK007**

**Site Name:** Nininger Mounds

**Collection Location:** N/A
**Physical Setting:**

The site consists of three small, conical mounds on a bluff that overlooks the Mississippi River. The mounds are elevated around 50 feet to 80 feet above the river. The Saint Croix and Mississippi river meet to the east-southeast of the site.

**Methods Employed:**

T.H. Lewis surveyed and documented the mound group in 1883 (Winchell 1911:178).

**Results and Discussion:**

The mounds were 20 feet to 30 feet in diameter and around a foot high. The mounds were likely associated with the Woodland Period (Finney 2000).

**Site Status:** The site was destroyed by cultivation according to the site form and Winchell (1911:178), but sub-surface features may still be present.

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**21DK008**

**Site Name:** Black Dog Mound Group

**Collection Location:** N/A

**Physical Setting:**

The mound group, comprised of 104 mounds, is located on terraces within the Minnesota River Valley. The area of the site encompasses terraces elevated about 10 feet and 100 feet above the valley floor. The bluffs of the valley rise to around 100 feet above the higher terrace.
Methods Employed:

Results and Discussion:
Most of the mounds in the group were circular in shape except three, which were more linear. The linear mounds measured 40 by 100 feet, 20 by 125 feet, and 50 by 125 feet and were roughly three feet in height.

Site Status: All mounds were destroyed by agriculture activities and highway construction (Peterson 1975). However, sub-surface features may still exist.

21DK009
Site Name: Kaposia Mounds
Collection Location: N/A
Physical Setting:
The Kaposia mounds are located near a bluff edge that overlooks the Mississippi River Valley and Pig’s Eye Lake. The group is comprised of five mounds. The mounds form a 191-foot-long line that is oriented northwest-southeast along the bluff spur (Finney 2000). Two possible burial sites (21DKu and 21DKy) exist just to the south.

Methods Employed:
T.H. Lewis surveyed and documented the mound group in 1883 (Winchell 1911:176).
**Results and Discussion:**

The five mounds were conical in shape and consisted of both prehistoric and historic burials. The smallest mound measured 20 feet in diameter and was one foot in height, while the largest measured 32 feet in diameter and two and a half feet high (Finney 2000 and Werner 1974).

**Site Status:** The mound group was destroyed in the late 19th century when the location of the site was first mined for sand and gravel. Construction of an apartment complex further disturbed the area. This is made of note by Peterson in 1974 and is also listed on the site form.

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**21DK010**

**Site Name:** Grand Avenue Mound Group  
**Collection Location:** N/A  
**Physical Setting:**

The Grand Avenue Mound Group is located near a bluff edge that overlooks the Mississippi River Valley and Pig’s Eye Lake. The group consists of eight mounds. The three largest mounds are separated by several hundred feet, and the smaller mounds are located to the south of the larger three. Another mound group (21DK016) is located just to the south.

**Methods Employed:**

T.H. Lewis surveyed and documented the mound group in 1883 (Winchell 1911:176). Lewis did not map the location of the five smaller mounds, however, noting that the five mounds had been reduced by agricultural activities.
**Results and Discussion:**

The three largest mounds had diameters of 18 feet, 20 feet, and 42 feet, ranging in height from one to three feet. The mound group dated to the Woodland Period (Finney 2000).

**Site Status:** Checked by Werner (Werner 1974) and later verified by Peterson, the three largest mounds were destroyed due to construction activities.

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**21DK011**

**Site Name:** South Saint Paul Mound Group

**Collection Location:** N/A

**Physical Setting:**

The South Saint Paul Mound Group is located on a bluff that overlooks the Mississippi River Valley from South Saint Paul. The group consists of three mounds.

**Methods Employed:**

T.H. Lewis surveyed and documented the mounds in 1887 (Winchell 1911:176).

**Results and Discussion:**

The mounds were conical in shape, ranging from two to two and a half feet in height. The diameters of the mounds were 28 feet, 40 feet, and 45 feet (Finney 2000).

**Site Status:** Destroyed by sand and gravel mining according to Werner (1974) and the site form.
21DK012

Site Name: Buron Lane Mound
Collection Location: N/A
Physical Setting:
The mound is located on a bluff that overlooks the Mississippi River Valley from South Saint Paul.

Methods Employed:
T.H. Lewis surveyed and documented the site in 1887 (Winchell 1911:176).

Results and Discussion:
The mound was conical in shape, about 26 feet in diameter and one and a half feet in height. The mound dated to the Woodland Period (Finney 2000).

Site Status: The site form and Werner (1974) indicate the mound is no longer in existence due to urban expansion in the 1930’s.

21DK013

Site Name: Exchange Building Mound
Collection Location: N/A
Physical Setting:
Lewis stated that the single mound was located near the Exchange Building. However, Werner later determined that the mound would have likely been positioned near the edge of the bluff that overlooks the Mississippi River Valley in South Saint Paul.
Methods Employed:

T.H. Lewis surveyed and documented the site in 1887 (Winchell 1911:176).

Results and Discussion:

The mound was conical in shape, about 60 feet in diameter and three and a half feet in height.

Site Status: Destroyed by road construction according to the site form.

21DK014

Site Name: Pig’s Eye Island

Collection Location: N/A

Physical Setting:

Lewis placed the mound in the Mississippi River floodplain. Werner, however, believed the mound to be closer to the bluff.

Methods Employed:

T.H. Lewis surveyed and documented the site in 1887.

Results and Discussion:

The mound had a diameter of 28 feet and a height of two and a half feet.
Site Status: Peterson visited the site in 1973 and determined that the mound had been destroyed.

21DK015

Site Name: N/A
Collection Location: N/A

Physical Setting:
The site consists of a number of small mounds that are pieces of a single, larger mound. The mound is located in the uplands overlooking a pond in West Saint Paul, southwest from the Mississippi River.

Methods Employed:
T.H. Lewis surveyed and documented the site in 1887 (Winchell 1911:267).

Site Status: The mounds are not visible, but since they are located within a city park, subsurface remnants may remain intact. This information is listed on the site form.

21DK016

Site Name: Silk Mounds
Collection Location: N/A
Physical Setting:
The mound group, overlooking the Mississippi River Valley from the crest of a bluff, contains 11 mounds. The mounds form a line for about 1220 feet. Pig’s Eye Lake is located to the north of the site. Another mound group (21DK010) is located just to the north.

Methods Employed:
T.H. Lewis surveyed and documented the mound group in 1883 (Winchell 1911:176-177).

Results and Discussion:
Most of the mounds in the group were conical in shape, averaging between 18 and 48 feet in diameter and one and two feet in height. One of the mounds, however, was elongated and 180 feet in length. The elongated mound tapered in width from 48 feet to 24 feet and was around two feet in height. The configuration of the tapered, elongated mound was similar to the panther effigy mounds of Wisconsin.

Site Status: Most of the mounds were destroyed via urban expansion, but a remnant of one of the mounds may still exist. The site form documents this, as well as Peterson in 1974.

21DK017
Site Name: Mendota Mound Group I
Collection Location: N/A
Physical Setting:
The mound group contains eight mounds and overlooks the junction of the Minnesota and Mississippi Rivers. The site is located on terraces within the Mississippi River Valley, ranging
from around 20 to 80 feet above the flood plains. Another mound group (21DK018) is located on the bluff just to the south. A multiple component artifact scatter (21DK031), containing Woodland, Archaic, and Mississippian materials, overlaps with the western border of the site.

Methods Employed:

T.H. Lewis surveyed and documented the mound group in 1882 (Winchell 1911:174).

Results and Discussion:

The mounds ranged from 35 to 100 feet in diameter and one and a half to eight feet in height (Finney 2000).

Site Status: One mound (Mound 6) still exists, but the rest have been destroyed by cultivation. Sub-surface features may still be present.

21DK018

Site Name: Mendota Mound Group II

Collection Location: N/A

Physical Setting:

The mound group consists of five mounds and overlooks the junction of the Minnesota and Mississippi rivers from a bluff. Another mound group (21DK017) and the Sibley House Complex (21DK031) are located on terraces below the site, within the Mississippi River Valley.
Methods Employed:
T.H. Lewis surveyed and documented the mound group in 1882 (Winchell 1911:174-175).

Results and Discussion:
Two of the mounds were ovoid in shape, measuring 60 by 40 feet and 50 by 26 feet. The other three were conical in shape, the largest of which was 80 feet in diameter and eight and a half feet tall.

Site Status: The site form indicates landscaping activities associated with the houses in the area likely destroyed the mounds. Sub-surface features may remain.

21DK019
Site Name: Bluff Mounds
Collection Location: N/A
Physical Setting:
The mound group consists of 11 mounds that are situated on a terrace within the Mississippi River Valley near Pickerel Lake.

Methods Employed:
T.H. Lewis surveyed and documented the mound group in 1883 (Winchell 1911:176-177).
Results and Discussion:

The mound group included 10 conical mounds and an ovoid-shaped mound. Most of the mounds were about 24 feet in diameter and one and a half feet in height. Mounds 3 and 4, however, were situated near each other and connected by an earthen embankment.

Site Status: The mounds have been destroyed by construction projects according to aerial imagery.

21DK020

Site Name: Lot 3 Mound Group
Collection Location: N/A

Physical Setting:

There are a total of 22 mounds in the group. The mound group is mostly situated on a terrace within the Mississippi River Valley, about 100 feet above the floodplains.

Methods Employed:

T.H. Lewis surveyed and documented the mounds in 1882 (Winchell 1911:176).

Results and Discussion:

All but one of the mounds were conical in shape, the largest of which was 45 feet in diameter and two and a half feet in height. The other mound was linear and had a width of 20 feet, extending 127 feet in length.

Site Status: Due to gravel mining operations, the mound group was destroyed.
21DK021 – 21DK023

Mound sites in southern Dakota County surveyed by Edward Schmidt. All have been determined that the mounds are natural knolls (Finney 2010), and not cultural.

21DK027

Site Name: Freitag Mounds

Collection Location: N/A

Physical Setting:

The mound group contains 11 mounds and is located on a ridge in the Mississippi River Valley. An Archaic and Woodland component artifact scatter (21DK072) is located on the same ridge and abuts the mound group from the west.

Methods Employed:

Leslie Peterson surveyed and documented the mound group in 1972 in association with the Hastings Bypass project (Nystuen 1973).

Results and Discussion:

Ten of the mounds are conical, while one is more elongated in shape. Mounds 1 and 2 are more deflated than the other mounds, suggesting that the mounds have been cultivated. Mound 1 is elongated in form and has a height of two feet and a diameter of about 43 feet. Disturbances on
the northern side have severely impacted the integrity of Mound 1. Mound 2 has a height of two feet, a diameter of 23 feet, and is not disturbed.

Mounds 3 through 6 are in the wooded portion of a former pasture and range in size from about 36 to 40 feet in diameter. Heights of Mounds 3 through 6 range from two to three feet. Some of the mounds in this sub-group have been disturbed, as is the case with Mounds 5 and 6. Past potting and construction have affected the area as well.

Mounds 7 through 11, the largest mounds in the group, are in a wooded area to the south of the gravel bisection. The northern portions of Mounds 10 and 11 were destroyed by the construction of the gravel road. The owner of the property proposed that there may have been more mounds in the group before the area was cultivated. The mounds are presumed to be associated with the Woodland Tradition.

**Site Status:** Some of the site is destroyed: Mound 1 exhibits evidence of potting, Mound 3 has rodent activity damage, Mound 6 was partially disturbed by fence construction, and Mounds 10 and 11 were partially destroyed by road construction. The other six mounds are still largely intact.

**21DK028**

**Site Name:** N/A

**Collection Location:** Minnesota Historical Society

**Physical Setting:**

The site is located on a small peninsula, overlooking wetlands from the west. The wetlands are expansive, extending for more than a mile from the southern end of the lake. A creek drains the wetlands and joins the Cannon River at Lake Byllesby, about 10 miles to the east of the site.
Methods Employed:

Don Weir and Commonwealth Associates surface surveyed the area in the 1970s.

Results/Discussion:

The site is a small lithic scatter, containing nine flakes and one scraper. The site is about half an acre in extent.

Site Status: The site in an agricultural field and may exhibit sub-plowzone features, according to the site form.

21DK029

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located just south of the Cannon River, on adjacent portions of low and mid-level terraces. The gully of an intermittent creek exists to the west of the site, draining into the Cannon River.

Methods Employed:

Christina Harrison visited the site in 1978, leading a surface survey through a cultivated field. The site was surface surveyed again in 2017, as a part of the Dakota County Archaeological Survey.
Results and Discussion:

Seven lithic artifacts are associated with Harrison’s find at the site, specifically, three utilized flakes, three non-utilized flakes, and one core. Eleven lithic artifacts from the site, including an end scraper and core, are associated with the 2017 survey. The majority of the artifacts from the site are made of Prairie du Chien Chert. The site is about four acres in extent.

Site Status: The site form states the site is disturbed by plowing, but may exhibit sub-plowzone features.

21DK030

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a small elevated area in an agricultural field. The site sits above the Cannon River, to the south.

Methods Employed:

Christina Harrison surface surveyed the area in 1979.

Results and Discussion:

The site is comprised of a dense lithic scatter. The site extends more than 300 feet in one direction and 150 feet in the other, covering an area of about an acre. A total of 33 artifacts are associated with the site, including scrapers, utilized flakes, unmodified debitage, a core, and a hammerstone.
Site Status: The site has been plowed for many years and is likely disturbed, but sub-plowzone features may be present. The site form relays this information.

21DK031

Site Name: Sibley House Complex/American Fur Company Headquarters

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a sloping terrace that overlook the junction of the Minnesota and Mississippi Rivers. The terrace is situated more than 50 feet above the floodplains.

Methods Employed:

A number of excavations that relate to the maintenance of the historic structures within the Sibley House Complex have taken place. Most of the archaeological work performed within the Sibley House Complex occurred in the 1990s. Of the larger excavations, Robert Clouse dug 92 units around the Sibley House, as well as three more near the Du Puis House (Clouse 1996; 1999). Prior to that, Douglas Birk and Gordon Lothson excavated units around the perimeters of the brick and Ice-Carriage houses (Birk 1993; Lothson 1987).

Results and Discussion:

The Sibley House Complex is a large, dense, multiple component site. Components of the site represent all time periods humans are known to have inhabited the area. Specifically, the site
contains Paleoindian, Archaic, Woodland, Late Precontact, Contact and Historic components (Clouse 1996; 1999; Lothson 1987). Most of the materials from the site are associated with the area around the Sibley House. The artifact assemblage from the site contains more than 61,000 items. Lithic debitage, faunal remains, floral remnants, fire cracked rock, groundstone tools, projectile points (including a Paleoindian, Agate Basin point), and other lithic tools reveal the variety of the assemblage. The assemblage also contains ceramics, including Sorg/Howard Lake Havanoid wares. Prehistoric materials are associated with the brick house as well. The prehistoric components of the site extend onto lower portions of the terrace (Birk 1993).

**Site Status:** Some disturbance has occurred due to construction activities and modern upkeep. Intact Pre-contact and Contact era deposits are predicted to exist away from the disturbed areas.

Figure 6.17. Havanoid (Sorg or Howard Lake) ceramics from the Sibley House Complex (21DK031). The site has evidence of Paleoindian through Contact and Historic era occupation.
21DK032

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a terrace adjacent to the original channel of the Cannon River. The site is currently beneath the waters of Lake Býllesby, an artificial reservoir. Also submerged beneath the reservoir, three other lithic scatters (21DK033, 21GD175, and 21GD179/21DK071) are located just to the south of the site.

Methods Employed:

Clark Dobbs surface surveyed the area in 1987.

Results and Discussion:

The site is a lithic scatter with an area of about two acres.

Site Status: The site is submerged.

21DK033

Site Name: N/A

Collection Location: Minnesota Historical Society
Physical Setting:
The site is located on a terrace adjacent to the original channel of the Cannon River. The site is currently beneath the waters of Lake Byllesby, an artificial reservoir. Also submerged beneath the reservoir, three other lithic scatters (21DK032, 21GD175, and 21GD179/21DK071) are located just to the north and east of the site.

Methods Employed:
Clark Dobbs surface surveyed the area in 1987.

Results and Discussion:
The site is a lithic scatter with an area of around eight acres.

Site Status: The site is submerged.

21DK034
Site Name: Williams Pipeline Site
Collection Location: Minnesota Historical Society

Physical Setting:
The site is located within the Minnesota River Valley, on the shore of Gun Club Lake in Fort Snelling State Park.
Methods Employed:

David Radford excavated a single shovel test at the site in 1988. By the time of Radford’s survey, earth had been moved in relation to the installation of a pipeline. Archaeological materials were also recovered from the backfill of the pipeline trench.

Results and Discussion:

The site includes a blade tool, shell fragments, a grit-tempered rim sherd with stamped decoration, and thirteen grit-tempered, cord-impressed sherds. The site appears to be associated with the Terminal (Late) Woodland Period.

Site Status: In the site form, the site is recorded as intact except for the area disturbed by the pipeline trench itself.

![Initial Woodland stamped rim sherd from 21DK034.](image)

Figure 6.18. Initial Woodland stamped rim sherd from 21DK034.

21DK035

Site Name: Kennealy Creek Village Site

Collection Location: Minnesota Historical Society
Physical Setting:

The site is located on a terrace within the Minnesota River Valley, downstream of a creek junction.

Methods Employed:

The site was surface surveyed, shovel tested, and excavated on multiple occasions throughout the 1990s (Radford and George 1991, 1992, 1993).

Results and Discussion:

The site is a Historic and Precontact component artifact scatter, a little less than two acres in extent. Artifacts include pipestone pipes and a pipestone fragment, a tinkler cone, and lithic debitage.

Site Status: The site form states the site is in a cultivated area with disturbance to 40 centimeters below the surface. Intact deposits may exist below the plow zone.

Figure 6.19. Pipestone pipe fragments from the Kennealy Village site (21DK035).
21DK038

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site extends along a low to mid-level terrace south of the Cannon River. A drainage gully, which is fairly incised (more than 10 feet in places), meets the Cannon River to the northeast of the site.

Methods Employed:

Christina Harrison surface surveyed the area in 1978 and discovered the site. The site was also surface surveyed in 2017, as a part of the Dakota County Archaeological Survey.
Results and Discussion:

The site is a diffuse lithic scatter, around three acres in extent. Two utilized flakes and a non-utilized flake comprise Harrison’s find from the site. Three non-utilized flakes from the site are associated with the Dakota County Survey.

Site Status: The land is currently used as an agricultural field and the site is most likely disturbed. Sub-plowzone features however may still be present.

21DK039

Site Name: Renner Findspot

Collection Location: Landowner

Physical Setting:

The site is located near Buck Hill, overlooking Lake Crystal from the west.

Methods Employed:

Ted Lofstream examined the area in 1980.

Results and Discussion:

A single Paleoindian, Eden-type projectile point was discovered.

Site Status: Currently an agricultural field, so some disturbance is present. Sub-plowzone features may be present.
21DK040

Site Name: Roselind Findspot

Collection Location: Landowner

Physical Setting:

The site is located in an upland cornfield that overlooks Chub Lake. The site is elevated more than 100 feet above Chub Lake.

Methods Employed:

Gerald McCormic reported the site to Ted Lofstrom in 1980.

Results and Discussion:

A single, broken projectile point is associated with the site.

Site Status: The point was found in an agricultural field, so some of the site is disturbed. However, sub-plowzone features could be still present.

21DK041

Site Name: Pemtom/River Hills

Collection Location: Human remains repatriated. Artifacts at Science Museum of Minnesota.

Physical Setting: The site is located on a bluff top that overlooks the Minnesota River and Black Dog Lake.
Methods Employed:

Human remains disturbed by construction activities. Vernon R. Helmen of the Science Museum of Minnesota carried out a salvage excavation of the site (Helmen 1963).

Results and Discussion:

The site consists of a number of pit burials and the associated artifacts. The artifact assemblage from the site is comprised of faunal remains, including tools and ornaments, and projectile points. The human remains were reexamined in the 2000s, revealing that about half of the burials are sub-adults and the other half are adults of varying ages. Some of the human remains show signs of trauma, evident from embedded projectile points and evidence of scalping. The long bones have cut marks that are likely associated with preparing the individuals for interment. It is hypothesized that these burials are the result of a single raid on a camp, occurring sometime in the Archaic (Regan 2000).

Site Status: The site has been destroyed due to residential and road construction.

21DK042

Site Name: Crystal Lake Island Findspot

Collection Location: Landowner

Physical Setting:

The site located on Crystal Lake Island. The island is elevated about 20 feet above the lake.

Methods Employed:

Scott Anfinson and Leslie Peterson surface surveyed the area in 1979.
Results and Discussion:

A single, stemmed projectile point is associated with the site. The site dates to either the Archaic or Woodland Period.

Site Status: The site has been destroyed by road, industrial, and residential activities as noted on the site form.

21DK043

Site Name: Bud Joseph’s Site/Bud’s Landing

Collection Location: Science Museum of Minnesota

Physical Setting:

The site is located on a terrace and outwash area on the shoreline of Spring Lake. A gully cuts through the site.

Methods Employed:

Elden Johnson conducted a surface survey along the shoreline of Spring Lake in 1952, which resulted in the identification of the site (Johnson and Taylor 1956; Johnson 1959). Johnson then excavated a five foot by five foot unit at the site.

Results and Discussion:

The site is a lithic scatter, containing 33 flakes, two of which are retouched, and four cores. Ken Klink (pers. comm. 2009) reported finding Woodland sherds in the lake adjacent to the site.

Site Status: Although likely impacted by erosion and development to some degree, parts of the site are likely intact.
21DK044

Site Name: Alimagnet Lake

Collection Location: Minnesota Historical Society

Physical Setting:
The site is located on the shore of Alimagnet Lake. The most elevated portions of the site are about 50 feet above the lake.

Methods Employed:
Brian Waitkus and Beth Scott-Swanson, archaeologists at the Minnesota Historical Society, conducted a surface survey and dug shovel tests at the site in 1976 (Waitkus and Scott-Swanson 1976).

Results/Discussion:
The site is a small lithic scatter, consisting of five flakes.

Site Status: The site appears to be intact because of its current wooded location and protection within a Park.

21DK045

Site Name: N/A

Collection Location: N/A
Physical Setting:
The site is located on an upland hilltop that overlooks a small drainage to the Vermillion River. The Vermillion River is to the south and southeast. The Mississippi River Valley is to the north of the site.

Methods Employed:
Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:
The site is a lithic scatter, about six acres in extent, consisting of unmodified lithic debitage.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK046
Site Name: N/A
Collection Location: N/A

Physical Setting:
The site is located on a bluff top to the south of the Mississippi River Valley. The site overlooks a ravine that connects to the Mississippi River Valley. The site sits more than 100 hundred feet above the floor of the ravine.

Methods Employed:
Randy Peterson surface surveyed the area in 1990.
Results and Discussion:

A single piece of lithic debitage is the only artifact associated with the site.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK047

Site Name: N/A

Collection Location: N/A

Physical Setting:

The site is located at the junction of tributaries to the Vermillion River. The site is elevated about 10 feet to 30 feet above the tributaries. A single artifact find (21DK048) is located just to the east of the site.

Methods Employed:

Christina Harrison surface surveyed the area in 1994 (Harrison and Roise 1994).

Results/Discussion:

The site is a lithic scatter, consisting of lithic debitage and a tool. The site is about 13 acres in extent.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.
21DK048

Site Name: N/A

Collection Location: N/A

Physical Setting:

The site is located on the bank of a tributary to the Vermillion River. The site is elevated about 10 feet to 20 feet above the tributary. A lithic scatter (21DK047) is located just to the west of the site.

Methods Employed:

Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:

A single, flaked stone tool is associated with the site.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK049

Site Name: Rathburne Site

Collection Location: Landowner
Physical Setting:

The site is located on a knoll, elevated above a wetland. The Mississippi River Valley is about four to six miles to the north through northeast of the site. Situated at a slightly higher elevation, a lithic scatter (21DK120) abuts the eastern border of the site. Two more lithic scatters (21DK052 and 21DK053) and two single artifact finds (21DK118 and 21DK119) are also associated with the wetland.

Methods Employed:

Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:

The site is a lithic scatter with an area of about five acres. Projectile points, including a corner-notched and stemmed point, scrapers, knives, groundstone tools, other lithic tools, and debitage are associated with the site. The majority of lithic artifacts are made of oolitic Prairie du Chien Chert. The site may date to the Archaic or Woodland Tradition. The diversity of lithic tools and the lack of pottery at the site, however, led Harrison to propose that the site might be a late Archaic habitation.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK050

Site Name: N/A

Collection Location: Minnesota Historical Society
Physical Setting:

The site is located on a small terrace beside the Vermillion River. The Vermillion River enters the Mississippi River Valley several miles to the northwest of the site.

Methods Employed:

Christina Harrison surface surveyed and shovel tested the site in 1994 (Harrison and Roise 1994).

Results and Discussion:

The site is a lithic scatter, containing only debitage, with an area of about two acres.

Site Status: The site is largely intact due to its current use as a wooded pasture, according to the site form.

21DK051

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a terrace of the Vermillion River. The terrace is elevated about 10 to 20 feet above the river. The Vermillion River enters the Mississippi River Valley several miles to the northwest of the site.
Methods Employed:

Christina Harrison surface surveyed and shovel tested the site in 1994 (Harrison and Roise 1994).

Results and Discussion:

The site is a small lithic scatter, containing debitage and a flaked tool.

Site Status: Disturbed by cultivation and pine plantation. Sub-plowzone features may exist.

21DK052

Site Name: N/A

Collection Location: N/A

Physical Setting:

The site is located on the cultivated shore of a wetland. The Mississippi River Valley is several miles to the north through northeast of the site. Five other sites, of which three are lithic scatters (21DK049, 21DK053, 21DK120) and two are single artifact finds (21DK118 and 21DK119), are also associated with the wetland.

Methods Employed:

Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:

The site is a lithic scatter comprised of debitage and is about 16 acres in extent.
**Site Status:** Disturbed by cultivation. Sub-plowzone features may exist.

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**21DK053**

**Site Name:** N/A

**Collection Location:** N/A

**Physical Setting:**

The site is located on the slope and top of a narrow hill that overlooks the shore of a wetland. The top of the hill is more than 50 feet above the surrounding low areas. The Mississippi River Valley is about several miles to the north through northeast of the site. Five other sites, of which three are lithic scatters (21DK049, 21DK052, 21DK120) and two are single artifact finds (21DK118 and 21DK119), are also associated with the wetland.

**Methods Employed:**

Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

**Results and Discussion:**

The site is a lithic scatter comprised of debitage and is about five acres in extent.

**Site Status:** Disturbed by cultivation. Sub-plowzone features may exist.
21DK054

Site Name: N/A
Collection Location: N/A

Physical Setting:
The site is located in uplands near a tributary to the Vermillion River. The shortest distance to the Vermillion River is about one mile.

Methods Employed:
Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results/Discussion:
The site is a lithic scatter comprised of debitage and is about 14 acres in extent.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK055

Site Name: N/A
Collection Location: N/A

Physical Setting:
The site is located in uplands some distance south of the Vermillion River. A tributary to the Vermillion River is located to the south of the site. The Vermillion River and the tributary meet to the northeast of the site, a few miles away.
Methods Employed:
Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:
A single piece of lithic debitage is associated with the site.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK056

Site Name: N/A

Collection Location: N/A

Physical Setting:
The site is located on a terrace adjacent to a tributary to the North Branch of the Vermillion River. The junction of the North Branch and the Vermillion River is to the southeast, a few miles away.

Methods Employed:
Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:
The site is a lithic scatter comprised of debitage and is about eight acres in extent.
Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK057

Site Name: N/A
Collection Location: N/A

Physical Setting:
The site is located on a hilltop near the Vermillion River. The site is situated about 20 to 40 feet above the Vermillion River channel.

Methods Employed:
Christina Harrison surface surveyed the area in 1993 (Harrison 1993).

Results and Discussion:
The site is a lithic scatter comprised of debitage and is about 10 acres in extent.

Site Status: Disturbed by cultivation. Sub-plowzone features may exist.

21DK059

Site Name: Bauer-Mamer Site
Collection Location: Minnesota Historical Society
Physical Setting:

The site is located on a terrace adjacent to the Vermillion River. A small drainage joins the Vermillion River near the site.

Methods Employed:

Christina Harrison surface surveyed the area in 1995 (Harrison 1996).

Results and Discussion:

The artifact assemblage from the site consists of two artifacts, a Prairie du Chien Chert flake and a groundstone tool.

Site Status: The site is largely intact because it currently sits in a pasture field.

21DK064

Site Name: Greiner Site

Collection Location: Landowner

Physical Setting:

The site is located on a beach of Marion Lake in Lakeville.

Methods Employed:

An informant, Ron Greiner, brought the projectile point to the Office of the State Archaeologist in 1998.
Results and Discussion:

A single projectile point is associated with the site. The projectile is a lanceolate, Paleoindian-type point and is made of an unidentified fossiliferous chert.

Site Status: The current condition of the site appears intact in aerial imagery, although there could be probable erosion disturbances due to the point being found on a beach.

21DK065

Site Name: Pahl Site

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a terrace along the Minnesota River and is elevated about 10 feet above the river channel. The junction of the Minnesota and Mississippi rivers is several miles to the north-northeast. An artifact scatter (21DK068) is located just to the west of the site.

Methods Employed:

David Radford performed a surface survey and dug 82 shovel tests at the site in 1998.

Results and Discussion:

The site is an artifact scatter with an area of about two acres. The artifact assemblage from the site includes bone and shell fragments, as well as smoothed and cord-marked pottery. A smooth-surfaced, grit-tempered, sharply angled shoulder sherd associated with the Plains Village Tradition was found here in addition to Terminal Late Woodland ceramics (George 1999).
**Site Status:** The site has been cultivated in the past, but any cultural material under the plow zone may still be intact.

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**21DK066**

**Site Name:** St. Peter Cemetery

**Collection Location:** N/A

**Physical Setting:**

The site is located on a bluff that overlooks the junction of the Minnesota and Mississippi Rivers. The site is elevated about 150 feet above the valley floor.

**Methods Employed:**

While cleaning up the St. Peter Cemetery in 1997, Scouts found a human cranium. After the Office of the State Archaeologist was notified, Bruce Koenen examined the area.

**Results and Discussion:**

A cranium, medial femur fragment, proximal end of a humerus, and a possible non-human scapula fragment were found in an area that was used to dump the excess soil from grave excavations. The finds may be from the Precontact era.

**Site Status:** The site may be partially disturbed due to recent burial activity. The first recorded burial was that of Oliver Emile Faribault in 1840. It is unknown how many burials predate this first recording, but it is believed there may be more before that date. The site form lists this information.
21DK067

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located in the uplands near the junction of the Minnesota and Mississippi Rivers. The site is set about a quarter of a mile back from the river valley. The north shore of a small lake is several hundred feet to the southeast of the site.

Methods Employed:

Bradley Perkl surface surveyed and shovel tested the site in 1999 (Perkl 1999).

Results and Discussion:

A single biface fragment made of Prairie du Chien chert is associated with the site.

Site Status: The site has been destroyed by housing developments, which is mentioned in the site form.

21DK068

Site Name: N/A

Collection Location: Unknown
Physical Setting:
The site is located on a terrace along the Minnesota River and is elevated about 10 feet above the river channel. The junction of the Minnesota and Mississippi rivers is several miles to the north-northeast. An artifact scatter (21DK065) is located just to the east of the site.

Methods Employed:
Jennifer and Glenn Walter performed a surface survey and dug 12 shovel tests at the site in 1999 (Walter and Walter 1999).

Results and Discussion:
Thirty-six pottery sherds, including cord-marked and smoothed pieces, and a number of shell fragments are associated with the site.

Site Status: The site form states the area has been moderately disturbed from development and past alluvial activities.

21DK069
Site Name: Murphy Farm I
Collection Location: Landowner
Physical Setting:
The site is located near a wetland. A creek is a little less than half of a mile to the south of the site.
**Methods Employed:**

Amy Ollendorf surface surveyed and shovel tested the area in 2000 (Ollendorf and Stubbs 2000).

**Results and Discussion:**

One artifact, a side-notched, late Archaic-type projectile point, is associated with the site.

**Site Status:** The site form states the site has been destroyed by cultivation and erosion. Some sub-surface features may be present.

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**21DK070**

**Site Name:** Murphy Farm II

**Collection Location:** Landowner

**Physical Setting:**

The site is located on the second knoll south of Eaves Court, overlooking a wetland. South Creek is a little less than half of a mile to the south of the site. South and North creeks join around a mile and a quarter to the east, shortly before North Creek enters the Vermillion River.

**Methods Employed:**

Amy Ollendorf surface surveyed and shovel tested the site in 2000 (Ollendorf and Stubbs 2000).

**Results and Discussion:**

A single pottery sherd was recovered from one of the shovel tests dug at the site.
Site Status: The site has been destroyed due to housing developments, which is mentioned in the Ollendorf and Stubbs (2000) report.

21DK071

Site Name: Lake Byllesby IX

Collection Location: Minnesota Historical Society

Physical Setting:
The site is located on a terrace adjacent to the original channel of the Cannon River and overlaps with the boundaries of 21GD179. The site is currently submerged beneath Lake Byllesby, an artificial reservoir. Three other sites (21DK032, 21DK033, 21GD175) are nearby and also within the reservoir.

Methods Employed:
Clark Dobbs surface surveyed the area in 1987, during a period of low water.

Results and Discussion:
The site is a lithic scatter comprised of debitage and is about two and a half acres in extent.

Site Status: The site is submerged.

21DK072

Site Name: Freitag Ridge Site

Collection Location: Minnesota Historical Society
**Physical Setting:**

The site is located on a ridge in the Mississippi River Valley east of Hastings. The Vermillion River flows south of the site. The ridge the site is positioned on is elevated about 20 feet above the floodplains. A mound group (21DK027) is located on the same ridge and abuts the site from the east.

**Methods Employed:**

Michelle Terrell shovel tested and excavated the site from 2001 to 2002 (Terrell 2002).

**Results and Discussion:**

The site is an artifact scatter with an area of about two and a half acres. Two distinct components are present in two different horizons (A and B) at the site. Horizon B most likely dates to the Archaic Period because of the lack of ceramics and less refined nature of the tools (as seen in the blade and biface). Deep deposits exist throughout the site but are more concentrated in the east-central portion of the site. The lack of features, a defined tool kit, and faunal remains indicates a short-term occupation.

The component within Horizon A is associated with the Woodland Period. The grit-tempered sherds, postmolds, and exotic lithic material suggest a longer occupation. The Woodland component is restricted to the western side of the site.

Artifacts associated with the site include flaked tools, cores, a groundstone tool, pottery sherds, fire-cracked rock, and bone fragments. Amongst the lithics, Prairie du Chien chert, Galena chert, Swan River chert, granite, jasper, quartz, and siltstone are the local material types present. Specular hematite is the exotic lithic material present at the site. The Specular hematite is most common in the A Horizon and consists mostly of small nodules.
Site Status: The site is largely intact. The field was used for planting hay or alfalfa and then mowed. Shovel tests revealed no loss of topsoil in this area. This was gathered from the site form.

21DK073

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located on a narrow bluff that overlooks a deep ravine and the Mississippi River Valley, downstream of Spring Lake. The site is near a natural spring.

Methods Employed:

Mollie Lyon shovel tested the site in 2002 (Lyon and Ekstrom 2002).

Results and Discussion:

A small piece of Prairie du Chien Chert debitage is associated with the site.

Site Status: The site form states the current condition of the site is intact with possible moderate damage from storms or uprooting.

21DK074

Site Name: Simons Ravine I

Collection Location: Minnesota Historical Society
Physical Setting:

The site is on the crest of an eroding bluff that is north of a ravine and west of Highway 52. The site overlooks the ravine and is set back a little less than a mile from the Mississippi River Valley.

Methods Employed:

Christina Harrison surface surveyed and shovel tested the site in 2002 (Harrison 2002).

Results and Discussion:

The site is a lithic scatter with dimensions of 15 feet and 30 feet. A total of 20 flakes are associated with the site. One of the flakes is made of Cedar Valley Chert, while the rest are made of Prairie du Chien Chert.

Site Status: The site is largely intact since most of it is in the woods. A trail follows the upper edge of the eroded bluff top and disturbance to any cultural material would be heaviest in that area. The information was found on the site form.

21DK076

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site overlooks a former river bed which is currently a wetland and ditch. The creek joins the Vermillion River a little over two miles to the south-southeast of the site.
Methods Employed:
Amanda Gronhovd shovel tested the site in 2006 (Gronhovd 2006).

Results and Discussion:
A single lithic flake is associated with the site.

Site Status: The site is largely intact due to being located in a wooded area.

21DK077

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:
The site is located on a wooded bluff edge that overlooks the remnant of a glacial lake.

Methods Employed:
Amanda Gronhovd dug 31 shovel tests at the site in 2006 (Gronhovd 2006).

Results and Discussion:
A single flake is associated with the site.

Site Status: The site form mentions that the site may be moderately destroyed from pipeline construction. Soil disturbances were obvious in the surrounding area.
21DK078

Site Name: N/A

Collection Location: Minnesota Historical Society

Physical Setting:

The site is located near a branch of Tributary No. 2 to Chub Creek. Chub Creek is to the south of the site, and Chub Lake is to the northwest.

Methods Employed:

Amanda Gronhovd surface surveyed the area in 2006 (Gronhovd 2006).

Results and Discussion:

A single lithic artifact is associated with the site. The site is connected to a group of six mounds (21DKaf) that were documented by T.H. Lewis between 1882 and 1885.

Site Status: The site form lists that the area is currently in an agricultural field and has more than likely been destroyed. The mounds are located in the field too and are not readily apparent. Sub-surface features may still be present.

21DK080

Site Name: N/A

Collection Location: Minnesota Historical Society
Physical Setting:
The site is located on a bluff that overlooks the Minnesota River and Mississippi River junction, as well as Pike Island. The site is elevated about 100 feet above the valley floor.

Methods Employed:
Michael Justin dug shovel tests at the site in 2007 (Justin 2009).

Results and Discussion:
One lithic flake is associated with the site.

Site Status: The site has been destroyed due to road construction. This is apparent in aerial imagery.

21DK082

Site Name: Pine Bend Bluff SNA
Collection Location: N/A
Physical Setting:
The site is located on a steep, eroding bluff top that overlooks the Mississippi River Valley in the Pine Bend area of Spring Lake. The site is elevated about 1000 feet above the valley floor.

Methods Employed:
Christina Harrison surface surveyed and shovel tested the site in 2011 (Harrison 2011a and 2011b).
Results and Discussion:

The site is a lithic scatter with an area of less than an acre. Three flakes, two of which are chert and one of which is basalt, and a possible groundstone tool comprise the artifact assemblage from the site.

Site Status: Most of the site has been impacted by erosion and agricultural activities. It is mentioned on the site form.

21DK083

Site Name: N/A

Collection Location: N/A

Physical Setting:

The site is located on a wooded terrace that overlooks the Vermillion River and is elevated about 10 feet above the river channel.

Methods Employed:

Dale Maul surface surveyed and shovel tested the site in 2011 (Aulwes and Jenkins 2011).

Results and Discussion:

A single lithic flake is associated with the site.

Site Status: The site may be partially intact. The flake was found on the edge of an agricultural field in the wooded area. If the site extends into the forest, it probably has minimal damage from
animal and plant activity. However, if the site ventured into the field, it was more than likely destroyed. The possibility of sub-plowzone features exists.

21DK084

Site Name: N/A

Collection Location: N/A

Physical Setting:

The site is located on a wooded terrace that overlooks the Vermillion River and is elevated about 10 feet above the river channel.

Methods Employed:

Dale Maul surface surveyed and shovel tested the site in 2011 (Aulwes and Jenkins 2011).

Results and Discussion:

A single retouched flake is associated with the site.

Site Status: The site may be partially intact. The flake was found on the edge of an agricultural field in the wooded area. If the site extends into the forest, it probably has minimal damage from animal and plant activity. However, if the site ventured into the field, it was more than likely destroyed. The possibility of sub-plowzone features exists.

21DK086

Site Name: N/A

Collection Location: Landowner
Physical Setting:

The site is located amongst tall grasses on ground that slopes slightly toward the shoreline of an unnamed lake to the west.

Methods Employed:

106 Group surface surveyed and shovel tested the site in 2011 (Doperalski et al. 2011)

Results and Discussion:

One flake is associated with the site.

Site Status: The site is located in a grassy area and may be intact.

21DK088

Site Name: Spring Lake Park Bluff

Collection Location: N/A

Physical Setting:

The site is located on a terrace that overlooks the shore of Spring Lake. The site is elevated about 100 feet above the waterline.

Methods Employed:

Christina Harrison dug shovel tests at the site in 2011 (Harrison 2011).
Results and Discussion:

The site is a lithic scatter with an area of less than an acre. The artifact assemblage from the site is comprised of 11 pieces of Prairie du Chien Chert debitage.

Site Status: The site form states the site is in a wooded area and is probable to be intact.

21DK089

Site Name: Ravenna Mounds

Collection Location: N/A

Physical Setting:

The site is located on a terrace that projects into the Mississippi River Valley at a ravine junction. The site is situated about 50 feet above the valley floor.

Methods Employed:

Lloyd Wilford identified the mounds in 1957, while recovering a nearby historic burial. The site was revisited in 2011, and a single mound was identified. Scott Anfinson mapped all three earthworks in 2012.

Results and Discussion:

Two of the mounds are conical, while the other is linear in shape. The mounds measure 30 feet in diameter by two feet in height, 45 feet in diameter by four feet in height, and 50 feet by 25 feet with a height of two feet.

Site Status: A field verification by Anfinson confirmed the mounds to be undisturbed.
21DK092

Site Name: J. Donnelly Site

Collection Location: Dakota County Historical Society

Physical Setting:
The site is located near the southern border of a park. An open area, wetland and rock pile mark the area.

Methods Employed:
Jeremy Nienow performed a pedestrian survey and dug shovel tests at the site in 2012 (Nienow 2012). Four shovel tests were placed around the rock pile.

Results and Discussion:
A single prehistoric Prairie du Chien chert flake is associated with the site. Four historic sites were also identified. Three of the four were associated with homesteads locations available on a 1896 plat map.

Site Status: The prehistoric component of the site is intact largely due to being protected in the Lebanon Hills Park. The site form indicates this.

21DK095

Site Name: Spring Lake Overlook

Collection Location: N/A
Physical Setting:
The site is located on a terrace that overlooks the shore of Spring Lake. The site is elevated about 100 feet above the waterline and overlooks the Ranelius site (21DK004).

Methods Employed:
Christina Harrison dug shovel tests and excavation units at the site in 2013 (Harrison 2013).

Results and Discussion:
The site is a dense lithic scatter, less than an acre in extent, comprised of a scraper, biface, 33 flakes, and two grinding stones.

Site Status: The site is located in a wooded area and has had minimal disturbances.

21DK096
Site Name: Ordway I
Collection Location: Science Museum of Minnesota
Physical Setting:
The site is located near the shoreline of a backwater lake above Spring Lake at the base of a bluff in the Mississippi River Valley.

Methods Employed:
Scott Legge of Macalester College and Edward Fleming of the Science Museum of Minnesota dug shovel tests and a 1x1m excavation unit at the site in 2013 (Legge et al 2013).
Results and Discussion:

The site is an artifact scatter with an area of less than an acre. Large sherds from an Initial (Early) Woodland Prairie Ware vessel, as well as a number of other pottery sherds, were found in one shovel test dug at the site. The shovel test was expanded to a 1x1m excavation unit and more of the vessel was found up to 1m deep, as well as Terminal (Late) Woodland sherds in the upper levels, and lithic debitage, and charcoal.

Site Status: Largely intact. The site is in a protected wooded area and not in the vicinity of agricultural or construction activities. Some erosion may have impacted the site.

21DK097

Site Name: Ordway II

Collection Location: Science Museum of Minnesota

Physical Setting:

The site is located on a terrace that overlooks the Mississippi River Valley and a lake. The site is elevated about 50 feet above the waterline.

Methods Employed:

Scott Legge of Macalester College and Edward Fleming of the Science Museum of Minnesota shovel tested the site in 2013 (Legge et al 2013).

Results and Discussion:

The site is an artifact scatter with an area of less than an acre. The artifact assemblage from the site includes lithic debitage and a large, decorated sherd of Havanoid pottery. The pottery sherd
has a coarse granite temper and a banded decoration of oblique stamps separated by incised lines. The artifacts were found adjacent to a charcoal feature and a post mold.

**Site Status:** Largely intact. The site is in a protected wooded area and not in the vicinity of agricultural or construction activities. Some erosion may have impacted the site.

**21DK098**

**Site Name:** Ordway III

**Collection Location:** Science Museum of Minnesota

**Physical Setting:**

The site is located on a terrace that overlooks the Mississippi River Valley and a lake. The site is elevated about 20 to 40 feet above the waterline.

**Methods Employed:**

Scott Legge of Macalester College and Edward Fleming of the Science Museum of Minnesota shovel tested the site in 2013 (Legge et al 2013).

**Results and Discussion:**

The site is an artifact scatter with an area of less than an acre. Lithic debitage, fire-cracked rock, and thin, grit-tempered, cord-marked pottery sherds are associated with the site, indicating a Terminal (Late) Woodland Period presence.

**Site Status:** Largely intact. The site is in a protected wooded area and not in the vicinity of agricultural or construction activities. Some erosion may have impacted the site.
21DK099

Site Name: Ordway Island

Collection Location: Science Museum of Minnesota

Physical Setting:

The site is located on an island that borders a backwater lake and the main channel of the Mississippi River. The site is situated on a sandy knoll on the island.

Methods Employed:

Scott Legge of Macalester College and Edward Fleming of the Science Museum of Minnesota surface collected and shovel tested the site in 2013 (Legge et al 2013).

Results and Discussion:

A scatter of fractured shell, fire-cracked rock, and large, flaked cobble tools are associated with the site.

Site Status: Annual flooding has impacted the site, but subsurface deposits may be intact.

21DK106

Site Name: N/A

Collection Location: N/A
Physical Setting:
The site is located on a rise that overlooks a series of sloughs and drainages to the east and a gully to the south.

Methods Employed:
Jason Reichel surface surveyed the area in 2017.

Results and Discussion:
A single Prairie du Chien Chert projectile point is associated with the site

Site Status: The site form discloses agricultural activities have heavily disturbed the site, but sub-plowzone features may still be present.
Field survey began on April 14 and concluded on November 2, 2017, and focused on the southern two-thirds of the county. The survey involved nearly 1,600 staff hours in the field with a regular crew of four to six members. Seventeen volunteers devoted an additional 173 hours to pedestrian survey. Acreage surveyed totaled 2,200 acres, over 95% being private land. Public land surveyed included land holdings of Dakota County Parks and the City of Hastings. We used a combination of pedestrian survey and shovel test survey. Shovel testing was reserved for high potential areas with poor surface visibility. Nineteen-hundred acres of plowed agricultural fields were examined via pedestrian survey. Four-hundred-twelve shovel test pits were dug, 98 being positive (24%). In the end, 29 new sites were recorded via field survey: 17 through pedestrian survey and 12 via shovel test survey. Twenty-six previously known Precontact sites were revisited. Fifty-seven were examined remotely. We attempted to evaluate 18 Precontact Alpha sites. Of those, five landowners provided access, three denied access, and 10 were unresponsive. Below are summaries of new sites, Alpha sites, and revisited sites where artifacts were collected, followed by a discussion of the artifacts and raw materials recovered and an evaluation of our GIS methodologies. Site maps and parcels surveyed can be found in Appendix B. Site forms for newly recorded sites can be found in Appendix C.

New sites recorded

Site Number: 21DK107
Site Type: Lithic Scatter
SHPO Region: 2E

Methods Employed:
The site was discovered while conducting a surface survey in an agricultural field with excellent surface visibility. The field was walked in transects spaced two to five meters apart.
Physical Setting:
21DK107 is located on a narrow, low-level terrace adjacent to the Vermillion River. The site is downstream of Rice Lake, a shallow, marshy body of water that is located to the west. Other, smaller wetland areas are also nearby.

Nearby Sites:
The nearest known prehistoric sites (21DK121, 21DK122, and 21DK123) are a single artifact find and two small lithic scatters located near the Vermillion River, about a mile to the southwest. To the south-southeast three to four miles, a cluster of sites occurs around Chub Lake (21DK113, 21DK124, 21DK125, 21DK040, and 21DK028). The Chub Lake sites are four lithic scatters, including one which contains both Woodland and early Archaic/late Paleoindian components, and a single artifact find. A single artifact find (21DK064) is located on the shore of Lake Marion, about four miles to the north-northwest of the site. The artifact associated with 21DK064 is a lanceolate-shaped projectile point. Five single artifact finds (21GD069, 21GD070, 21GD108, 21GD109, and 21DK111) and a small lithic scatter (21GD110) exist about six to seven miles to the northeast of 21DK107, situated around the Vermillion River and small tributary streams. The artifact found at 21DK069 was a Late Archaic, Raddatz-like, side-notched projectile point, and the artifact found at 21DK070 was a grit-tempered, exfoliated sherd of pottery with a polished inner surface and a thickness of less than one centimeter.

Results and Discussion:
Three artifacts in total were found at 21DK107. The artifacts were found within an area of about 25 feet by 25 feet. The artifacts recovered from the site are two pieces of lithic debitage, one of which is made of Prairie du Chien Chert and the other of an unidentified material, and a retouched flake of Grand Meadow Chert. All three of the artifacts are G2 sized. The boundaries of the site were well established: the northern border of the site abuts the Vermillion River and the other borders are well within the surveyed field.
<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>2</td>
</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.1. 21DK107 artifact inventory.

**Site Number:** 21DK108  
**Site Type:** Single Artifact Find  
**SHPO Region:** 3W  

**Methods Employed:**  
The site was discovered while conducting a surface survey in an agricultural field with excellent surface visibility. The field was walked in transects spaced two to five meters apart.

**Physical Setting:**  
21DK108 is located on a small rise that projects into lowlands associated with the Vermillion River, just northeast of the town of Farmington. Elevation increases to the north.

**Nearby Sites:**  
The nearest known Precontact site is a single artifact find (21DK109) located in lowlands near the junction of North and Middle Creeks. A single artifact find (21DK070) of a grit-tempered sherd of pottery is located on a knoll that overlooks a swampy drainage to Middle Creek, about a mile and a half to the west-southwest. The pottery found at 21DK070 has a polished inner surface, exfoliated outer surface, and a thickness of less than one centimeter. Near the same drainage as 21DK070, another single artifact find (21DK069) is located about a mile and three-quarters to the west. The artifact found at 21DK069 is a Late Archaic, Raddatz-like, side-notched projectile point. Overlooking North Creek, a single artifact find (21DK076) is located about a mile and three-quarters to the north-northwest of 21DK108. To the northeast about two and a half miles, a small lithic scatter (21DK133) overlooks Empire Lake.
Results and Discussion:
One retouched piece of G2 sized jasper debitage was found at the site. The artifact was found near the northern edge of the surveyed agricultural field. The site likely does not extend to the northeast, as wetlands are adjacent to this border. The site may, however, continue to the northwest, following the low rise.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.2. 21DK108 artifact inventory.

Site Number: 21DK109
Site Type: Single Artifact Find
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in an agricultural field with excellent surface visibility. The field was walked in transects spaced two to five meters apart.

Physical Setting:
21DK109 is located in an area of low elevation just northeast of the town of Farmington. The lowlands associated with the site extend to the east, and elevation increases to the north of the site.
Nearby Sites:
The nearest known Precontact site, a single artifact find (21DK108), is located on a small rise set farther back from North Creek. A single artifact find (21DK070) of a grit-tempered sherd of pottery is located on a knoll that overlooks a swampy drainage to Middle Creek, a little less than a mile and a half to the west. The pottery found at 21DK070 has a polished inner surface, exfoliated outer surface, and a thickness of less than one centimeter. Overlooking North Creek, a single artifact find (21DK076) is located about two miles to the north-northwest of the site. A diffuse lithic scatter (21DK110) is located a little less than half a mile away to the southwest, situated between the Vermillion River and Middle Creek. The nearest Precontact site to the south, a possible lithic scatter (21DKk), is about four miles away.

Results and Discussion:
One retouched piece of G2 sized Prairie du Chien Chert debitage was found at 21DK109. The boundaries of the site were well established: the northern, western, and eastern boundaries of the site were within the surveyed field, and the southern border of the site is near North Creek.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.3. 21DK109 artifact inventory.

Site Number: 21DK110
Site Type: Lithic Scatter
SHPO Region: 3W
Methods Employed:
The site was discovered while conducting a surface survey in a field of sprouted soybeans. The field was walked in transects spaced two to five meters apart. Surface visibility was excellent in the field at the time of the survey.

Physical Setting:
21DK110 is located within the town of Farmington on a low, fairly level expanse set slightly above wetlands associated with the Vermillion River. Elevation increases to the west of the site.

Nearby Sites:
The nearest known Precontact site (21DK111) is a single artifact find located next to Middle Creek. Another single artifact find (21DK109) is located a little less than half a mile to the northeast, just north of North Creek. The nearest Precontact site to the south, a possible lithic scatter (21DKk), is a little over three miles away.

Results and Discussion:
A total of nine artifacts were found at 21DK110. Of the nine artifacts, two are retouched pieces of Prairie du Chien Chert debitage, one of which may be a scraper, with size grades of G2 and G3. The remainder of the artifacts from the site are pieces of unmodified lithic debitage (one piece of G2 sized Prairie du Chien Chert, one piece of G2 sized Swan River Chert, one piece of G3 sized quartz, one piece of G3 sized Knife River Flint, and three pieces of G3 sized Prairie du Chien Chert). All of the Prairie du Chien Chert artifacts from the site are of Oneota Formation origin. The boundaries of the site encompass an area of a little less than six acres, extending about 930 feet east-west and 340 feet north-south.

A grassy field road separates the northern border of the site from an adjacent field. The adjacent field to the north, which contained sprouted soybeans and had excellent surface visibility, was
also surface surveyed but found to be sterile. The western boundary of the site abuts a railroad track and paved bike trail, beyond which is another agricultural field. The eastern edge of the field to the west, which contained sprouted corn and excellent surface visibility, was also surface surveyed and found to be sterile. The southeastern edge of the site abuts the wetlands associated with the Vermillion River, while the northeastern edge meets the building complex of the farmstead. An agricultural field that was not surveyed is located between the southern border of the site and the Vermillion River.

Although the lithic scatter that comprises 21DK110 is relatively diffuse, the artifacts were more concentrated in the western portion of the site (six of the nine artifacts were found in the western half). Given the lack of artifact diversity and the dearth of artifacts in general, it appears that the site was utilized briefly and moderately on one or several occasions. It is possible, however, that the current boundaries of 21DK110 represent the northern edge of a more intensely used area to the south.

<table>
<thead>
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<th>Artifact</th>
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<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
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</tr>
<tr>
<td>Retouched Flake</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 7.4. 21DK110 artifact inventory.
Site Number: 21DK111
Site Type: Single Artifact Find
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of sprouted corn. The northern and eastern edges of the field were walked. Surface visibility was excellent in the field at the time of the survey.

Physical Setting:
21DK111 is located within the town of Farmington, just south of Middle Creek. The area around the site is fairly low and level. A saturated depression with a diameter of about 200 feet exists to the southeast of the site about 350 feet. About three-quarters of a mile to the east-northeast, North Creek and the Vermillion River meet. Elevation increases to the southwest of the site.
**Nearby Sites:**
The nearest known Precontact site (21DK110) is a lithic scatter located near the Vermillion River. A single artifact find (21DK109) is located to the east-northeast, just north of North Creek. A single artifact find (21DK070) of a grit-tempered sherd of pottery is located on a knoll that overlooks a swampy drainage to Middle Creek, to the west. The pottery found at 21DK070 has a polished inner surface, exfoliated outer surface, and a thickness of less than one centimeter. Overlooking North Creek, a single artifact find (21DK076) is located about two and a quarter miles to the north of the site. The nearest Precontact site to the south, a possible lithic scatter (21DKk), is about three and a half miles away.

**Results and Discussion:**
One quartzite endscraper was recovered from 21DK111. The northern border of the site abuts the wetlands associated with Middle Creek. The eastern and southern borders of the site were well established, being within the surveyed area of the field. A different agricultural field, which was not surveyed, abuts the western boundary of the site, and it is possible the site continues in this direction.

<table>
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<th>Artifact</th>
<th>Count</th>
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<tbody>
<tr>
<td>Endscraper</td>
<td>1</td>
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</tbody>
</table>

Table 7.5. 21DK111 artifact inventory.
Site Number: 21DK112
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of sprouted corn. The field was walked in transects spaced two to five meters apart. Surface visibility was excellent in the field at the time of the survey.

Physical Setting:
21DK112 is situated on a small, low-level terrace on the north side of the Vermillion River. To the north-northeast of the site, an unnamed creek joins the Vermillion River from the west.
Nearby Sites:
The nearest known Precontact site, a small lithic scatter (21DK059), is located near the junction of the Vermillion River and the unnamed creek to the north-northeast of 21DK112. Located on a narrow terrace near the Vermillion River, another small lithic scatter (21DK0051) is a distance to the west-southwest of the site. The next nearest Precontact site is a single artifact find (21DK083) located on a low-level terrace of the Vermillion River to the northeast, a little less than two miles away. To the east-northeast of 21DK083 is another single artifact find (21DK084) on the same terrace. A small lithic scatter (21DK050) is located next to the Vermillion River, a little over two miles to the southwest of the site. A single artifact find (21DK055) is situated between the Vermillion River and a tributary, around two and a half miles to the south-southwest. The nearest known Precontact site directly to the south is a lithic scatter (21DK047) nearly three miles away. A single artifact find (21DK048) is set a few hundred feet to the southeast of 21DK047 and at a slightly lower elevation.

Results and Discussion:
A total of five artifacts were found at 21DK112. All of the artifacts found at the site were pieces of lithic debitage, consisting of one piece of G1 sized Prairie du Chien Chert, two pieces of G2 sized Prairie du Chien Chert, and two pieces of G2 sized quartz. The artifacts were found within an area of less than half of an acre, the boundaries of which extended around 165 feet north-south and 165 feet east-west. The boundaries of the site were well established: the Vermillion River is just beyond the eastern and southern borders of the site, while the western and northern borders are within the surveyed field.

<table>
<thead>
<tr>
<th>Artifact</th>
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<tr>
<td>Unmodified Chipping Debris</td>
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</table>

Table 7.6. 21DK112 artifact inventory.
Site Number: 21DK113
Site Type: Woodland and Early Archaic/Late Paleoindian Component Lithic Scatter
SHPO Region: 2E

Methods Employed:
The site was discovered while conducting a surface survey in a field of corn. The corn plants ranged from a few inches to about half a foot in height and surface visibility was excellent at the time of the survey. The field was walked in transects spaced two to five meters apart.

Physical Setting:
21DK113 is located on a hill that overlooks the shoreline of Chub Lake. The hill associated with the site provides a vantage, especially to the southeast. The top of the hill is set back from and above the lake. The highest portion of the hill is a ridge-like feature that runs roughly east-west through its center. The northern portion of the hill is lower in elevation, and three distinct knolls line the southern portion. Rills cut between the highpoints of the hill. The gradient from the edge of the site to Chub Lake is steep. Several gullies, the deepest of which reaches a depth of 15 to 20 feet and contains a limestone outcrop at a depth of about 10 feet, run from the site to the lake. The lake itself has a surface area of about 225 acres and a maximum depth of around 10 feet. Chub Lake is a fairly isolated body of water: the nearest lakes of a similar or larger size are about six miles away to the north-northwest and south-southwest. Also, there are no similarly sized collections of standing water between Chub Lake and the Mississippi River Valley, which is about 30 miles to the east, except for an artificial reservoir along the Cannon River (Lake Byllesby). Lake Byllesby is located about 10 miles to the east-southeast of 21DK113 and connects to Chub Lake via Chub Creek. A large wetland extends from the southern tip of Chub Lake for more than a mile, following Chub Creek.

Nearby Sites:
The nearest known Precontact site, a small lithic scatter (21DK124), is located on a hill that overlooks the shore of Chub Lake, about half a mile from the site. Another small lithic scatter (21DK125) is located on an adjacent hill, to the north-northwest of 21DK124. 21DK040, a
single artifact find of a projectile point, is also located on a hill, to the southwest of 21DK124. The nearest known prehistoric site to the south, is a small lithic scatter (21DK078). 21DK078 is located within the boundaries of 21DKaf (a possible mound group in an upland area nearly surrounded by small marshes. Another possible mound group (21DKae) abuts the eastern boundary of 21DKaf. Overlooking the wetland that extends from the southern tip of Chub Lake is a lithic scatter (21DK028). A single artifact find (21DK121) and three lithic scatters (21DK122, 21DK123, and 21DK107) are located about three and a half miles to the northwest of the site, around the Vermillion River and Rice Lake. Three single artifact finds (21GD069, 21GD070, and 21DK111) and a small lithic scatter (21GD110) exist about six to seven miles to the north-northeast of 21DK113, situated around the Vermillion River and small tributary streams. The artifact found at 21DK069 was a Late Archaic, Raddatz-like, side-notched projectile point, and the artifact found at 21DK070 was a grit-tempered, exfoliated sherd of pottery with a polished inner surface and a thickness of less than one centimeter.

**Results and Discussion:**

21DK113 is 30 acres in area, extending about 1300 feet north-south and 1150 feet east-west. A total of 183 artifacts were found at the site, of which 165 are pieces of unmodified lithic debitage, six are pieces of retouched debitage, three are bifaces, three are cores, four are projectile points, one is a side scraper, and one is a drill fragment. Within the boundaries of the site, artifact concentrations were identified on the central ridge of the hill (Cluster 1), a lower portion of the hill in the northeastern corner of the site (Cluster 3), and two of the knolls (the western and middle) near the southern edge of the site (Clusters 2 and 4). No artifacts were found on the knoll in the southeastern portion of the field. The borders of the site were fairly well established: most of the hill associated with the site was within the surveyed agricultural field.

Most of the artifacts found at 21DK113 were located within Cluster 1. The artifacts found in Cluster 1 consisted of 129 pieces of unmodified lithic debitage, six retouched pieces of lithic debitage, three bifaces (made of Tongue River Silica, siltstone, and Shakopee Formation Prairie du Chien Chert), one Grand Meadow core, one quartz core, one drill made of an unidentified
lithic material, and two projectile points. One of the projectiles found in Cluster 1 is made of heat-treated Red River Chert, corner-notched, and most closely resembles Pelican Lake/Creston type points of the Initial (Middle) Woodland period (Morrow 1984:76-77). The other projectile point found in Cluster 1 is made of Oneota Formation Prairie du Chien Chert, side-notched, and most closely resembles St. Croix type points of the Terminal Woodland period (Morrow 1984:79). Most of the artifacts found in Cluster 1 were in the western half of the cluster, and the concentration of artifacts greatly decreased with distance east from the middle of the cluster.

Eleven artifacts were found in Cluster 2, consisting of 10 pieces of unmodified lithic debitage and one side scraper made of Oneota Formation Prairie du Chien Chert. Three pieces of unmodified lithic debitage and one projectile point were found in Cluster 3. The projectile point found in Cluster 3 is made of Shakopee Formation Prairie du Chien Chert, side-notched, and most closely resembles Manker/Hopewellian type points of the Initial (Middle) Woodland period (Morrow 1984:73). Cluster 4 contained two pieces of G2 sized, unmodified lithic debitage made of Oneota Formation Prairie du Chien Chert and one projectile point. The projectile point found in Cluster 4 is made of Shakopee Formation Prairie du Chien Chert, non-fluted, and most closely resembles Dalton and Angostura type points of the late Paleoindian and early Archaic periods (Morrow 1984:17,26). One quartz core and 21 pieces of unmodified lithic debitage were found between the clusters.

Over half of the debitage found at the site (89 out of 165 pieces) is Prairie du Chien Chert, consisting of nearly equal portions of Oneota Formation and Shakopee Formation materials. The Shakopee Formation materials skew slightly larger, however: 19 of the 42 pieces of Shakopee Formation debitage are G2 or G1 sized, while 13 of the 43 pieces of Oneota Formation debitage are G2 sized (no G1 sized pieces of Oneota Formation debitage were found). Regarding nonlocal lithic materials, one piece of G3 sized Knife River Flint debitage and 17 pieces of Grand Meadow Chert debitage were found at the site. The Grand Meadow Chert debitage ranges in size from G4 to G2, including 12 pieces that are G3 sized. One piece of G3 sized Lake Superior Agate, one piece of G2 sized siltstone, three pieces of silicified sandstone, three pieces of jasper, eight pieces of quartz, six pieces of Tongue River Silica, 16 pieces of Swan River Chert, 13 pieces of Red River Chert, and seven pieces of an unidentified material comprise the
remainder of the debitage found at the site. The Red River Chert, Tongue River Silica, Jasper, and silicified sandstone debitage is skewed towards larger pieces (i.e. there are more G1 and/or G2 sized pieces than G3 and/or G4 sized pieces), while the Swan River Chert and quartz debitage is skewed towards smaller pieces.

21DK113 contains at least three distinct components—Initial (Middle) Woodland, Terminal Woodland, and Late Paleoindian/Early Archaic. Although no pottery was recovered from the site, the diversity of lithic artifacts and the size of the site suggest that the Woodland components may represent a habitation. Regardless, given the exposure of the area, the site is unlikely to represent any extensive winter season utilizations. Chub Lake does, however, present some advantages in terms of some activities and events that took place in the spring and fall. For instance, Chub Lake contains small amounts of wild rice, a grain resource which ripens in the fall. Given the relatively large size and shallow depth of the lake, as well as the plants sensitivity to water quality, it is likely that wild rice was once much more prevalent within its waters. Being a headwaters lake, Chub Lake may have also been well situated to take advantage of the spring fish spawn.

A soil probe was taken from the center of the western half of Cluster 1, revealing that the site may be partially intact. Silty loam (10YR 4/3) was present until a depth of 15 cm, after which silty clay (10YR 4/4) was encountered. The western edge of the rise that is associated with the site extends into the woods beyond the surveyed field for a short distance and may contain intact deposits. It is also possible that refuse deposits exist on the slope and at the base of the rise, between the current boundaries of the site and Chub Lake.
<table>
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<tr>
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<td>Drill</td>
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<td>Side Scraper</td>
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</tbody>
</table>

Table 7.7. 21DK113 artifact inventory.

Figure 7.3. 21DK113, PDC debitage by size grade.
Figure 7.4. 21DK113 Oneota PDC debitage by size grade.

Figure 7.5. 21DK113 Shakopee PDC debitage by size grade.
Figure 7.6. 21DK113 debitage by lithic raw material.
Figure 7.7. Projectile points from 21DK113. From left to right, Dalton, Pelican Lake, Manker, and St. Croix styles, representing Late Paleoindian/Early Archaic, Initial (Middle) Woodland, and Terminal Woodland components.
Figure 7.8. Drill fragment (left) and side scraper (right) from 21DK113.

Figure 7.9. Cores from 21DK113.
Figure 7.10. Biface fragments from 21DK113.

Site Number: 21DK114
Site Type: Archaic and Woodland Component Artifact Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in fields of sprouted corn and soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent within the boundaries of the site at the time of the survey.

Physical Setting:
21DK114 is in an upland setting, atop and around a hill that projects from the southwestern corner of a small bluff that extends eastward for about a mile. The tallest portion of the bluff is about 100 feet above the nearby low areas and 50 feet above the rise associated with the site. Running parallel to this bluff, another, much broader bluff turns from the south to the east about 1000 feet south-southeast of the site. The edges of both bluffs slope gradually in most places, defined more by large hills than cliffs. To the west, the site overlooks a low, fairly level
expanse. The lowlands to the west drain northward, while the valley that extends between the bluffs to the east drains eastward. Both drainages meet the Vermillion River in or near the Mississippi River Valley, about seven to nine mile to the northeast. The nearest sources of flowing surface water to the site are a tributary to the Vermillion River, a little over one mile to the north, and a tributary to the Cannon River, Trout Brook, a little over two miles to the south.

Nearby Sites:
The nearest known Precontact sites are a small lithic scatter and two isolated artifact finds (21DK047, 21DK048, and 21DK055) located around three miles to the north and northeast. The nearby sites to the north and northeast are associated with the same drainage that runs along the western side of the site. The next nearest sites (21DK115 and 21DK116) are single artifact finds in uplands a little over three miles to the southeast and a small lithic scatter (21DK054) north of the Vermillion River. To the south, there are no known Precontact sites until the Cannon River Valley, about 8 miles away.

Results and Discussion:
21DK114 is 20 acres in area, extending about 600 feet north-south and 1800 feet east-west. The southern, western, and eastern edges of the site are at or near the base of the rise the site is centered around. A total of 14 artifacts were found at the site—11 pieces of lithic debitage, a Shakopee Formation Prairie du Chien Chert core, a projectile point made out of Grand Meadow Chert, and a large, fragmented pottery sherd. The majority of the lithic debitage was found on the western slope of the site and in the low area on the eastern edge of the site, having possibly eroded from a higher position. The pottery was found on top of the rise in the northcentral part of the site, and the projectile point was found in the low area on the southern edge of the site. The site boundaries were well established except for a portion of the northern edge, which was a grass buffer between the agricultural field and a pasture. The grass buffer and pasture were not surveyed. Given that the rise continues to the northeast, it is likely the site extends in that direction.
21DK114 is a multicomponent site, containing both Archaic and Woodland artifacts. The projectile point found at the site most closely resembles Turin cluster and other late Archaic projectile points (Morrow 1984:62). The projectile is a large, corner-notched point with a slightly concave base and convex, obliquely flaked edges. The tip of the projectile is not present and appears to have been broken by an impact. The only pottery found at the site, a large sherd which exhibits portions of both the body and the shoulder, resembles Terminal Woodland, Plains Village, or early Silvernale types found elsewhere in the region. The pottery is sand-tempered, 5 mm thick, and has a smooth, undecorated surface. The majority of the lithic debitage that was found at the site (six out of eleven pieces) is Prairie du Chien Chert with a size grade of G1 or G2. Oneota Formation and Shakopee Formation materials are almost equally represented by the Prairie du Chien Chert at the site. Several unmodified Prairie du Chien Chert cobbles were also found at the site.

Some reasons for the appeal of the site to humans are apparent in the arrangements of the landforms on and around which 21DK114 is situated. The site overlooks what may have acted as a corridor for humans and other animals: the eastern valley opens into the lowlands of the west and north at the southern edge of the site. More generally, the site is located on the northern edge of the uplands that separate the Vermillion and Cannon Rivers, making it well suited to access both upland and lowland resources. The presence of pottery suggests that the site may be associated with a Woodland habitation. Given that the highest part of the site is primarily exposed to the northwest, it does not seem a likely cold season habitation; however, the low area in the valley on the eastern edge of the site and nearby nooks in the hills of the bluff edges are sheltered. The lithic debitage profile, as well as the presence of unmodified Prairie du Chien Chert cobbles and a core of the same material, also suggest that Prairie du Chien Chert may have been acquired at the site or from a nearby source.

The area the site likely extends into to the north is a grass buffer and pasture separated by a fence. Both the buffer and the pasture have been cultivated in the past (John R. Borchert Map Library 2015). The only other apparent disturbance is a small well or cistern in the pasture, the cement top of which is visible. A soil probe was taken in the agricultural field on top of the rise
at the north-central edge of the site. Sandy loam (10YR 3/1) was present down to 28 cm, at which point reddish, coarse sand (2.5YR 5/6) was encountered.

<table>
<thead>
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<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
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<tr>
<td>Projectile Point</td>
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</tr>
<tr>
<td>Core</td>
<td>1</td>
</tr>
<tr>
<td>Pottery</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.8. 21DK114 artifact inventory.

Figure 7.11. Pottery from 21DK114.
Site Number: 21DK115
Site Type: Single Artifact Find
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of sprouted soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

Physical Setting:
21DK115 is in an upland setting, on the western slope of a peninsula-like segment of rounded bluff that extends to the southeast. Trout Brook itself, little more than a drainage ditch at this point, is around half a mile to the south.
Nearby Sites:
The nearest known Precontact sites are 21DK116, a single artifact find to the north, and 21DK114, an Archaic and Woodland component artifact scatter that is a little over three miles to the northwest. Single artifact finds (21DK134 and 21DK135) near Pine Creek, a tributary to the Cannon River, are around three and a half miles to the south-southwest. A Terminal Woodland projectile point was found at both 21DK134 and 21DK135. An extensive artifact scatter (21DK131) is located about four miles to the southeast in the valley of Trout Brook.

Results and Discussion:
A single, G2 sized flake of Grand Meadow Chert was discovered at 21DK115. The site boundaries were well established except for the western edge, which is a fairly steep, partially wooded slope. It is likely, however, that the artifact was originally higher up the slope of the bluff to the north, east, or south and was transported through post-depositional processes.

<table>
<thead>
<tr>
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<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.9. 21DK115 artifact inventory.

Site Number: 21DK116
Site Type: Single Artifact Find
SHPO Region: 3W
**Methods Employed:**
The site was discovered while conducting a surface survey in a field of sprouted soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

**Physical Setting:**
21DK116 is in an upland setting, in the middle and near the top of a peninsula-like segment of rounded bluff that extends to the southeast. Around 1500 feet to the north, the projection the site is on joins the main body of the bluff. Trout Brook itself, little more than a drainage ditch at this point, is around half a mile to the south.

**Nearby Sites:**
The single artifact find 21DK115 is south of the site and on the same landform. 21DK114, an Archaic and Woodland component artifact scatter, is about three miles to the northwest. Single artifact finds (21DK134 and 21DK135) near Pine Creek are around three and a half miles to four miles south-southwest of the site. A Terminal Woodland type projectile point was found at both 21DK134 and 21DK135. An extensive artifact scatter (21DK131) is located about four miles to the southeast in the valley of Trout Brook.

**Results and Discussion:**
A single, G2 sized flake of Prairie du Chien Chert was discovered at 21DK116. The site boundaries were well established except for the northern edge, which abuts a road. The agricultural field on the north side of the road was not surveyed. The majority of the portion of the projection that is south of the road, which amounts to about three-fourths of the landform, was surface surveyed.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.10. 21DK116 artifact inventory.
Site Number: 21DK117
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in fields of two foot tall corn and half foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

Physical Setting:
21DK117 is located south of the Cannon River on a broad, upper-level terrace. The terrace itself extends towards the Cannon River for about 1000 feet. A drainage gully runs into the Cannon River from the South, some distance west of the site. To the east of the site lowlands extend until the shores of Lake Byllesby, a distance of about two to three miles. An isolated bluff, rising up to more than 100 feet above the surrounding area, runs roughly east-west south of the site. A series of small but tall hills—up to 50 feet in height—line the north side of the bluff. Spring Creek, which joins the Cannon River at Lake Byllesby, flows along the south side of the bluff.

Nearby Sites:
The nearest known Precontact sites (21DK029 and 21DK038) are small lithic scatters located to the west on low and mid-level terraces just south of the Cannon River. The next nearest sites (21DK126 and 21DK127) are lithic and artifact scatters near Chub Creek, about a mile and a half northeast. On the north side of the Cannon River to the west-southwest, is another lithic scatter (21DK030), which includes scrapers and a hammerstone. A cluster of lithic scatters (21DK032, 21DK033, 21GD175, and 21GD179/21DK071) occurs to the east, under the waters of Lake Byllesby. A possible Precontact site (21DKc) is located a few miles south of the site.
Results and Discussion:
A G1 sized piece of retouched Swan River Chert and a G2 sized flake of silicified sandstone were found about 400 feet apart at 21DK117. The Swan River Chert artifact resembles a retouched pebble rather than a flake. The boundaries of the site were well established, and a large portion of the upper-level terrace was surveyed.

<table>
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<th>Artifact</th>
<th>Count</th>
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<tbody>
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</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.11. 21DK117 artifact inventory.

Site Number: 21DK118
Site Type: Single Artifact Find
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of up to one foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

Physical Setting:
21DK118 is located on the tip of a low peninsula that juts into a shallow, open water wetland from the south, nearly reaching the north shore. The wetland is bound to the west, north, and east by hills that stand up to 50 feet tall.
Nearby Sites:
The nearest site (21DK052) is a small lithic scatter on the shore of the wetland. The next nearest site (21DK119) is a single artifact find located on the shore opposite the site. 21DK053, a small lithic scatter adjacent to 21DK052, is located to the southwest. A Woodland and/or Archaic component lithic scatter (21DK049) is located on a small knoll next to the wetland. Overlooking 21DK049 and the shore of the wetland, 21DK120 (a lithic scatter) is about 1700 feet to the northwest. 21DK050 is a small lithic scatter on the side of the Vermillion River, to the southeast, and 21DK051 is a small lithic scatter on the side of the Vermillion River, to the east-northeast. A single artifact find (21DK055) is located about 2 miles to the southeast, in the uplands between the Vermillion River and a tributary to the Vermillion River, and a small lithic scatter (21DK054) is located about two and a half miles to the southwest, near a drainage to the Vermillion River.

Results and Discussion:
A single, G2 sized flake of Prairie du Chien Chert was discovered at 21DK118. The site boundaries were well established. The entirety of the peninsula was surveyed except for the southeastern corner, which was in tall grass at the time. Given the sites proximity to multiple lithic scatters, the dearth of artifacts is conspicuous. The apparent scarcity of past human activity on the peninsula is likely related to its low elevation.

<table>
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<tr>
<th>Artifact</th>
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<tbody>
<tr>
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</table>

Table 7.12. 21DK118 artifact inventory.
Site Number: 21DK119  
Site Type: Single Artifact Find  
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of up to one foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent within and adjacent to the boundaries of the site at the time of the survey, but surface visibility was highly variable in much of the rest of the field the site was discovered in.

Physical Setting:
21DK119 is located on the western shore of a wetland, near water level. The low area the site is in extends to the south for a few hundred feet. Small hills are just northwest and northeast of the site, behind which to the north and west are larger hills.

Nearby Sites:
The nearest sites are a small lithic scatter (21DK052) on the southwestern shore of the wetland, and a small lithic scatter (21DK053) located on a narrow rise next to 21DK052 to the southwest. 21DK118 is a single artifact find to the east and is located on a peninsula in the wetland. A Woodland and/or Archaic component lithic scatter (21DK049) is located on a small knoll next to the wetland. Overlooking 21DK049 from the shore of the wetland, 21DK120 (a lithic scatter) is to the northwest. 21DK050 is a small lithic scatter near the Vermillion River, to the east. A single artifact find (21DK055) is located to the southeast, in the uplands between the Vermillion River and a tributary, and a small lithic scatter (21DK054) is located about two and a half miles to the southwest, near a drainage to the Vermillion River.
Results and Discussion:
A single, G2 sized flake of Prairie du Chien Chert was discovered at 21DK119. The wetland is immediately to the southeast and southwest of the find. The northern boundaries of the site were not well established. Surface visibility to the north was highly variable at the time of the survey, and the artifact may have been transported from more highly elevated areas to the north or northwest through post-depositional processes.

<table>
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<tr>
<th>Artifact</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.13. 21DK119 artifact inventory.

Site Number: 21DK120
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while conducting a surface survey in a field of up to one foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent throughout the site at the time of the survey.

Physical Setting:
21DK120 is located on the western end of a rise that extends away from the northeastern shore of a wetland. The wetland is conspicuous in that it is the first large collection of standing water along the Vermillion River outside of the Mississippi River Valley. The rise the site is on stands about 15 to 30 feet above the wetland and runs for about 1000 feet to the east. The northern and eastern slopes of the rise are moderate. The southern slope of the rise is fairly gradual, and the western slope to the wetland is steep. The Vermillion River is to the southeast of the site.
Nearby Sites:
21DK120 is above and adjacent to the Woodland and/or Archaic component lithic scatter (21DK049) located on a small knoll. 21DK118 and 21DK119 are single artifact finds to the west-southwest. 21DK052 and 21DK053 are small lithic scatters on the southwestern side of the wetland. 21DK050 is a small lithic scatter on the Vermillion River, to the east-southeast, and 21DK051 is a small lithic scatter on the side of the Vermillion River, about a mile and a half to the east-northeast. A single artifact find (21DK055) is located a little less than 2 miles to the southeast, in the uplands between the Vermillion River and a tributary to the Vermillion River, and a small lithic scatter (21DK054) is located almost three miles to the southwest, near a drainage to the Vermillion River.

Results and Discussion:
21DK120 is three and a half acres in extent. The western edge of 21DK120 is the steep slope to the wetland, and the site extends along the rise for about 450 feet to the east. The steep slope to the wetland curves between 21DK049 and 21DK120. The area in which the slope between the two sites becomes more gradual forms a distinct seam that connects the landforms associated with the sites. The southwestern corner of 21DK120 is at the top of this seam, and 21DK120 meets or nearly meets 21DK049 at this point. The boundaries of 21DK120 extend about 300 feet north of its southwestern corner, following the slope break. Although the majority of the artifacts are associated with the western third of the site, the width of the site does not diminish with distance away from the wetland. A total of 73 artifacts were recovered from the site, 70 of which were unmodified lithic flakes. A Prairie du Chien Chert core and two retouched flakes of the same material were also found at the site. The site boundaries were well established, and the majority of the rise associated with the site was surveyed.

The vast majority of the artifacts (64 out of 73) found at the site are made of Prairie du Chien Chert. Pieces of Galena Chert, jasper, and quartz debitage were also found. The majority of Prairie du Chien Chert artifacts found at the site (46 out of 64) appear to be associated with the Shakopee Formation and the rest (except one that was not identified beyond general raw
material) appear related to the Oneota Formation. The size-grades of the Prairie du Chien Chert artifacts recovered from the site vary by formation of origin as well: the Shakopee Formation materials are represented by equal amounts of large (G1 and G2) and small (G3 and G4) artifacts, while 15 out of the 17 pieces of debitage identified as Oneota Formation are G3 and G4 sized. A soil probe on the western edge of the site contained loam (10YR 3/2) down to 15 cm, at which point coarse, compact sand (10YR 3/6) was encountered. A soil probe in the center of the site revealed silty loam (10YR 2/1) to a depth of 40 cm, then clayey loam (10YR 3/3) for the next 10 cm, followed by a more clay-rich loam (10YR 3/6) at 50 cm.

Given the proximity of 21DK049 to 21DK120 and the relation of the landforms the sites are on, it is likely that the sites are related. A number of flaked stone tools, including a projectile point, knives, scrapers, and utilized flakes, are associated with 21DK049 (Harrison 1993:19). The projectile point is corner notched, resembling late Archaic and Initial (Early) Woodland types. Harrison also recovered 48 secondary flakes, 21 decortication flakes, 12 tertiary flakes, three pieces of shatter, a sandstone abrader, five cores, and two basalt grindstone fragments from 21DK049. The majority of the flaked artifacts found at 21DK049 were made of Prairie du Chien Chert, the description of which is consistent with Shakopee Formation materials. Harrison hypothesized that 21DK049 was an Archaic habitation due to the absence of pottery.

The lack of pottery at 21DK120 is consistent with Harrison’s hypothesis that 21DK049 is Archaic. If, as is suggested by the diversity of tools at the site, 21DK049 is a habitation site as well, 21DK120 may be a specialized activity area that extends from the site. The western and likely most used portion of 21DK120 appears to have largely eroded. 21DK049 is lower in elevation, however, and may be more intact. 21DK049 is no longer in row crops, currently being in grass. Although 21DK120 may have little research potential in itself, the sites around the wetland may have research potential when considered together as a possible Archaic site-complex.

Several areas around the wetland were surveyed and found to be sterile. A small portion of the rise that overlooks the wetland from the northwest was systematically surface surveyed, resulting in the discovery of no artifacts. Other portions of the rise north of 180th Street East and west of
Fischer Avenue were systematically surface surveyed and found to be sterile as well, including areas adjacent to 21DK052 and 21DK053. The results from the surface surveys of these areas are not conclusive, however, as surface visibility was highly variable and mostly poor at the time. Both areas were within an agricultural field that contained soybeans up to a foot in height and old cornstalk fragments.

An area south of 180th Street was also surface surveyed and found to be sterile. Natural grasses extend for about 600 feet to the south of the southeastern portion of the wetland, beyond which a little more than a thousand feet is the Vermillion River. In between the grassy expanse and the Vermillion River was a field of up to one foot-tall soybeans, the more elevated portions of which were formally surface surveyed. The negative results obtained from the surface survey of this area are inconclusive, as surface visibility was poor at the time. There are, however, several small knolls in the grassy area around the southeastern projection of the wetland that appear to have archaeological potential.

<table>
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<tr>
<td>Core</td>
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</tbody>
</table>

Table 7.14. 21DK120 artifact inventory.
Figure 7.13. 21DK120 debitage by lithic raw material.
Figure 7.14. 21DK120 PDC debitage by size grade.

Figure 7.15. 21DK120 Oneota PDC debitage by size grade.

Figure 7.16. 21DK120 Shakopee PDC debitage by size grade.
Site Number: 21DK121
Site Type: Single Artifact Find
SHPO Region: 2E

Methods Employed:
The site was discovered while conducting a surface survey in a field of half-foot to foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

Physical Setting:
21DK121 is located on a low rise that is virtually surrounded by wetland. The Vermillion River is to the east of the site. Rice Lake, a shallow, marshy body of water, is to the north. Standing about 50 feet above the surrounding lowlands, a large hill overlooks the site to the northwest.
Nearby Sites:
The nearest known sites (21DK122 and 21DK123) are small lithic scatters located on low rises to the east-southeast and south-southeast. 21DK107, a small lithic scatter, is located northeast near the Vermillion River. About five miles to the north, a single artifact find (21DK064) is on the north shore of Lake Marion. The artifact associated with 21DK064 is a lanceolate-shaped projectile point. 21SC085 and 21SC086 are a lithic scatter and single artifact find about five miles to the northwest, near Goose Lake. A single artifact find (21SC094) is located near a marsh to the southwest about five miles.

Results and Discussion:
A single, G2 sized flake of Prairie du Chien Chert was discovered at 21DK121. The site boundaries were well established except for the northern edge, beyond which was marshy, uncultivated ground.

<table>
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<tr>
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</tbody>
</table>

Table 7.15. 21DK121 artifact inventory.
Site Number: 21DK122
Site Type: Lithic Scatter
SHPO Region: 2E

Methods Employed:
The site was discovered while conducting a surface survey in a field of half-foot to foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

Physical Setting:
21DK122 is located on and at the base of a low rise that faces wetlands to the south, west, and north. The top of the rise is about 400 feet to the southeast of the site, and the Vermillion River is to the west of the site. Rice Lake, a shallow, marshy body of water, is to the north-northeast of the site.

Nearby Sites:
The nearest known sites (21DK121 and 21DK123) are a single artifact find and small lithic scatter located on low rises to the west-northwest and southwest. 21DK107, a small lithic scatter, is located to the north-northeast, near the Vermillion River. About five miles to the north, a single artifact find (21DK064) is on the shore of Lake Marion. The artifact associated with 21DK064 is a lanceolate-shaped projectile point. The nearest sites to the southeast are associated with Chub Lake and located about three to four miles away (21DK113, 21DK124, 21DK125, 21DK040, and 21DK028). The Chub Lake sites are four lithic scatters, including one which contains both Woodland and early Archaic/late Paleoindian components, and a single artifact find, which was a projectile point.

Results and Discussion:
Three artifacts were found at 21DK122. Two G2 sized flakes (quartz and Prairie du Chien Chert) were found within a few feet of each other near the base of the rise. A retouched flake made of Gunflint Silica was found about 200 feet to the northeast of the flakes, on a fairly level
area higher on the rise. The western, northern, and eastern boundaries of the site were well established. The southern border of the site is adjacent to a homestead. If 21DK122 is the edge of a more intensely utilized area, the site likely extends to the southeast, towards the top of the rise.

<table>
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</table>

Table 7.16. 21DK122 artifact inventory.

**Site Number:** 21DK123  
**Site Type:** Lithic Scatter  
**SHPO Region:** 2E

**Methods Employed:**
The site was discovered while conducting a surface survey in a field of half-foot to foot tall soybeans. The site and adjacent areas were walked in transects spaced two to five meters apart. Surface visibility was excellent in the area of the site at the time of the survey.

**Physical Setting:**
21DK123 is located on a low rise virtually surrounded by wetland. Between the site and wetlands are three small hills, just to the west, south, and east of the site. The Vermillion River is to the east of the site. Rice Lake, a shallow, marshy body of water, is to the north.
**Nearby Sites:**
The nearest known sites (21DK121 and 21DK122) are a single artifact find and small lithic scatter located on low rises to the north-northwest and northeast. The nearest sites to the southeast are associated with Chub Lake (21DK113, 21DK124, 21DK125, 21DK040, and 21DK028). The Chub Lake sites are four lithic scatters, including one which contains both Woodland and early Archaic/late Paleoindian components, and a single artifact find, which was a projectile point. A single artifact find (21SC094) is located near a marsh to the southwest about five miles.

**Results and Discussion:**
One G2 sized flake of Grand Meadow Chert and one quartz core were found at 21DK123, about 40 feet apart. The boundaries of the site were well established except for the southeastern edge, which was adjacent to a wooded, grassy area. Portions of the adjacent hills were surveyed (those in the agricultural field), amounting to most of the western hill (except for the top) and a little of the eastern and southern hills. It is possible that 21DK123 is associated with a more intensely utilized area on one or more of these hills.

<table>
<thead>
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<th>Artifact</th>
<th>Count</th>
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<tr>
<td>Core</td>
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Table 7.17. 21DK123 artifact inventory.
Site Number: 21DK124
Site Type: Lithic Scatter
SHPO Region: 2E

Methods Employed:
The site was discovered while excavating shovel tests in a pasture. The landowner indicated that the area had been an agricultural field until about 10 years ago. A total of seven shovel tests were dug at and adjacent to the site in a single transect. The shovel tests were squares, about 35 cm on a side. The shovel tests were dug to between 60 cm and 100 cm deep and spaced 10 meters apart.

Physical Setting:
21DK124 is located on an elevated finger that extends from the eastern edge of an upland area, overlooking Chub Lake. Fingers and knolls that are similar to the one associated with the site exist nearby to the north and south, along the upland edge. The uplands continue to the west for over a mile. The site sits about 20 feet below the nearest highpoint. Chub Lake is to the east of
the site and below it. Chub Lake has a surface area of about 225 acres and a maximum depth of around 10 feet. The lake is fairly isolated: the nearest lakes of a similar or larger size are about six miles away to the north-northwest and south-southwest. Also, there are no similarly sized collections of standing water between Chub Lake and the Mississippi River Valley, which is about 30 miles to the east, except for an artificial reservoir along the Cannon River (Lake Byllesby). Lake Byllesby is located about 10 miles to the east-southeast of 21DK124 and connects to Chub Lake via Chub Creek. A large wetland extends from the southern tip of Chub Lake for more than a mile, following Chub Creek.

**Nearby Sites:**
The nearest known Precontact site, a small lithic scatter (21DK125), is located on a similar rise to the north-northwest. A single projectile point (21DK040) was found to the southwest of the site. 21DK113, a Woodland and early Archaic/late Paleoindian component lithic scatter, is located on the other side of Chub Lake.

**Results and Discussion:**
Two of the seven shovel tests dug at the site were positive, not including one shovel test which contained wood charcoal at a depth of 65 cm. The artifacts found at the site consist of two pieces of lithic debitage, one of which is a G4 sized piece of Grand Meadow Chert and one of which is a heat treated, G3 sized piece of Galena Chert. The lithic artifacts were found from zero to 20 cm below the surface. A typical soil profile from the site contained loam or clayey loam down to around 20 cm below the surface, followed by loamy or gravelly clay.

The two pieces of chipping debris from the site were found in shovel tests approximately 100 feet apart. The length of the elevated finger associated with the site was shovel tested, and sterile shovel tests were dug at either end of it. The downslope is most gradual to the southwest of the site and almost immediately changes to an upslope. Otherwise, the site is surrounded by a steady to steep slope. Three sterile shovel tests were also dug (not included in the total shovel test count for the site) on a knoll to the southeast of the site, about 350 feet away.
Table 7.18. 21DK124 artifact inventory.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>2</td>
</tr>
</tbody>
</table>

Site Number: 21DK125  
Site Type: Lithic Scatter  
SHPO Region: 2E

Methods Employed:  
The site was discovered while excavating shovel tests in a pasture. The landowner indicated that the area had been an agricultural field until about 10 years ago. A total of three shovel tests were dug at and adjacent to the site in a single transect. The shovel tests were squares, about 35 cm on a side. The shovel tests were dug to between 60 cm and 100 cm deep and spaced 10 meters apart.

Physical Setting:  
21DK125 is located on a knoll along the eastern edge of an upland area, overlooking Chub Lake. The knoll associated with the site is connected to a larger elevated area to the north-northeast by a natural causeway. Uplands continue to the west for over a mile. The site sits about 20 feet below the nearest highpoint. Chub Lake is to the east of the site and below it. Chub Lake has a surface area of about 225 acres and a maximum depth of around 10 feet. The lake is fairly isolated: the nearest lakes of a similar or larger size are about six miles away to the north-northwest and south-southwest. Also, there are no similarly sized collections of standing water between Chub Lake and the Mississippi River Valley, which is about 30 miles to the east, except for an artificial reservoir along the Cannon River (Lake Byllesby). Lake Byllesby is located about 10 miles to the east-southeast of 21DK125 and connects to Chub Lake via Chub Creek. A
large wetland extends from the southern tip of Chub Lake for more than a mile, following Chub Creek.

**Nearby Sites:**
The nearest known Precontact site, a small lithic scatter (21DK124), is located on a similar rise to the south-southeast. A single projectile point (21DK040) was found near the highpoint to the south-southwest of the site. 21DK113, a Woodland and early Archaic/late Paleoindian component lithic scatter, is located on Chub Lake. Three small lithic scatters (21DK107, 21DK122, and 21DK123) and a single artifact find (21DK121) are located near the Vermillion River and Rice Lake, about three to three and a half mile to the northwest. Three single artifact finds (21GD069, 21GD070, and 21DK111) and a small lithic scatter (21GD110) exist about seven miles to the north-northeast of 21DK125, situated around the Vermillion River and small tributary streams. The artifact found at 21DK069 was a late Archaic, Raddatz-like, side-notched projectile point, and the artifact found at 21DK070 was a grit tempered, exfoliated sherd of pottery with a polished inner surface and a thickness of less than one centimeter.

**Results and Discussion:**
One of the three shovel tests dug at the site was positive. Four pieces of lithic debitage, one G1 sized and three G3 sized, were found in the positive shovel test. All three of the artifacts are made of Shakopee Formation Prairie du Chien Chert, and the largest is retouched. The artifacts were found from 50 to 70 cm below the surface. Loam or clayey loam was encountered in the shovel tests until depths of 20 to 30 cm, after which loamy or gravelly clay was reached.

A sterile shovel test was dug to both the east and west of the positive shovel test. Two sterile shovel tests (not included in the total shovel test count for the site) were also dug on a slightly lower portion of the knoll, a little over 200 feet to the east of the site. The site may extend to the north-northeast, towards the larger elevated expanse.
Table 7.19. 21DK125 artifact inventory.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>3</td>
</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Site Number: 21DK126
Site Type: Artifact Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while excavating shovel tests in a wooded area. A total of 13 shovel tests were dug at and adjacent to the site. The shovel tests were squares, about 35 cm on a side, and dug to 100 cm unless obstructed (e.g. by a large root).

Physical Setting:
21DK126 is situated along the bank of Chub Creek, about 10 feet above water level. A sharp drop and narrow, low terrace separates most of the site from the creek. Previously, Chub Creek had joined the Cannon River about a mile to the east of the site, under what is now Lake Byllesby. To the south and southeast of the site there is a short, gradual downslope, after which the ground surface rises for about 500 feet. An old oxbow of the Cannon River is to the south and southwest of the rise behind the site. The Cannon River itself is about south of the old oxbow.
Nearby Sites:
The nearest known site is a small lithic scatter (21DK127) located about to the southwest. A cluster of lithic scatters (21DK032, 21DK033, 21GD175, and 21GD179/21DK071) occurs to the east south-east, under the waters of Lake Byllesby. Single artifact finds (21DK134 and 21DK135) near Pine Creek, a tributary to the Cannon River, are around six miles to the east-northeast. A Terminal Woodland projectile point was found at both 21DK134 and 21DK135. The nearest known site to the northwest, a possible lithic scatter (21DKk), is about seven and a half miles away.

Results and Discussion:
Four out of 38 shovel tests were positive at the site, and a total of nine artifacts were found. The artifacts found at the site were two pieces of jasper debitage (G2 and G3 sized), two pieces of Swan River Chert debitage (G3 sized), two pieces of Prairie du Chien debitage (G2 and G3 sized), and two pieces of unidentified bone. A retouched flake of Prairie du Chien Chert was also found on the old railroad grade that runs along the eastern edge of the site. The artifacts were concentrated on the western and eastern ends of the site, with a sterile area of about 200 feet in between. Both pieces of bone were found in the same shovel test on the eastern end of the site.

The site appears to be intact. Loam and sandy loam was encountered in the shovel tests until termination, up to 100 cm below the surface, and the artifacts were found between depths of 0 cm and 80 cm. Most of the artifacts (6) were found 40 cm below the surface or deeper. The only apparent historic disturbance besides those railroad-related near the edges of the site is a hole/garbage dump in the eastern portion of the site.

The length of the site runs roughly northwest to southeast, following Chub Creek, and is about 450 feet. The width of the site is about 100 feet. The western and eastern ends of the site abut old railroad grades. Just to the north of the western grade is a railway line that is currently in use. The lower terrace between the site and creek is very small, except for a portion that projects out from the center of the site. Two shovel tests were dug on this projection and both were sterile except for large quantities of coal slag. It is possible that 21DK126 and 21DK127 are part
of a single, large and diffuse artifact scatter associated with multiple uses of this portion of Chub Creek.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>6</td>
</tr>
<tr>
<td>Faunal Remains</td>
<td>2</td>
</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.20. 21DK126 artifact inventory.

Figure 7.19. 21DK126 debitage by raw material.
Site Number: 21DK127
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while excavating shovel tests in a wooded area. A total of 13 shovel tests were dug at and adjacent to the site. The shovel tests were squares, about 35 cm on a side, and dug into the C horizon.

Physical Setting:
21DK127 is located near the top, of a low rise between Chub Creek and the Cannon River. Chub Creek is to the north and the east of the site. Previously, Chub Creek had joined the Cannon River to the east of the site, under what is now Lake Byllesby. An old oxbow of the Cannon River is to the south and southwest of the site. The Cannon River itself is south of the old oxbow. The rise the site is situated on narrows substantially to the west.

Nearby Sites:
The nearest known site is an artifact scatter (21DK126) located next to Chub Creek. A small lithic scatter (21DK117) is located on the side of the Cannon River to the southwest. A cluster of lithic scatters (21DK032, 21DK033, 21GD175, and 21GD179/21DK071) occurs to the east south-east, under the waters of Lake Byllesby. The nearest known site to the northwest, a possible lithic scatter (21DKk), is about seven and a half miles away.
**Results and Discussion:**

Five out of the 13 shovel tests were positive at the site, and a total of 12 Precontact artifacts were found. The artifacts were found at depths between 0 cm and 40 cm below the surface. Of the 12 artifacts, ten were unmodified pieces of debitage—six G3 sized Prairie du Chien Flakes, one G3 sized jasper flake, one G3 sized quartz flake, one G3 sized Swan River Chert flake, and one G4 sized Prairie du Chien flake. A retouched flake made of Prairie du Chien chert and a unifacial tool made out of jasper, possibly a scraper, were also found at the site.

21DK127 appears to be disturbed. Loam and sandy loam was encountered in the shovel tests until depths between 10 cm and 40 cm. Coarse to cobble sized gravel and sand was encountered in the shovel tests between depths of 10 cm and 40 cm. The artifacts were found at depths between 0 cm and 40 cm, including in the gravelly horizon. This includes a number of historic artifacts (screws, glass, metal, ceramics, brick, and a button). Precontact and Historic artifacts were found in the same shovel tests and at the same depths. Also, a roughly square hole, about 15 feet on a side and five feet deep, is located about 75 feet to the west of the site and may be an old foundation and/or garbage dump.

The length and width dimensions of 21DK127 are about 150 feet each. The site appears to be oriented toward Chub Creek rather than the Cannon River: 19 shovel tests (not included in the total shovel test count for the site) were dug along the old oxbow to the south and southwest of the site and were sterile.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>10</td>
</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
<tr>
<td>Unifacial Tool</td>
<td>1</td>
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</tbody>
</table>

Table 7.21. 21DK127 artifact inventory.
Figure 7.20. Jasper unifacial tool from 21DK127.

**Site Number:** 21DK128  
**Site Type:** Woodland Component Artifact Scatter  
**SHPO Region:** 3W

**Methods Employed:**  
The site was discovered while excavating shovel tests in a wooded area. A total of 71 shovel tests were dug at and adjacent to the site. The shovel tests were squares, about 35 cm on a side, and dug to 100 cm unless obstructed (e.g. by a large root or bedrock).

**Physical Setting:**  
21DK128 is located on a mid-level terrace in the Mississippi River Valley, east of the city of Hastings. The slope to the low terrace between the site and Vermillion River is fairly gradual in most places. A small drainage gully cuts through the western portion of the site, and a larger one cuts through the eastern portion. To the west, the terrace narrows before substantially widening in front of a large ravine that meets the Mississippi River Valley from the south. The Mississippi
River itself is about three-quarters of a mile to the north of the site. On the other side of the river to the north, the St. Croix and Mississippi rivers meet.

**Nearby Sites:**
A mound group and multicomponent (Archaic and Woodland) artifact scatter (21DK027 and 21DK072) are located to the northwest, in the Mississippi River Valley. The multicomponent artifact scatter (21DK072) includes grit-tempered pottery, debitage, faunal remains, and chipped and ground stone tools. A small lithic scatter (21DK129) is located to the west-southwest, against the Mississippi Valley wall. A single artifact find (21DK046) is located to the southwest, on a bluff top overlooking a ravine that enters the Mississippi River Valley to the west of the site. To the southeast, there are no known Precontact sites in or adjacent to the Mississippi River Valley on the Minnesota side until a possible mound or mound group (21DKal) about several miles to the southeast.

**Results and Discussion:**
Fifteen of the 71 shovel tests were positive at the site, not including shovel tests that contained only charcoal. A total of 26 artifacts were found, comprising 20 pieces of unmodified debitage, one endscraper made of the Shakopee variant of Prairie du Chien Chert, two whitetail deer incisors, an unidentified piece of bone, and two grit-tempered Terminal (Late) Woodland body sherds. The pottery is cord-marked, 3.4 mm thick, and contains a coarsely crushed granite temper. The majority of the debitage (17 out of 20) is Prairie du Chien Chert. The rest of the debitage is Swan River Chert and an unidentified material. Of the Prairie du Chien Chert debitage, 12 pieces appear to be associated with the Oneota Formation and four pieces appear to be associated with the Shakopee Formation. Regarding the size grades of the debitage, the ratio of G2 sized debitage to G3 sized debitage and G4 sized debitage to G3 sized debitage is about one to two in both cases.

21DK128 appears to be intact. Silty and sandy loams were encountered until depths between 15 cm and 70 cm. Nearer the Vermillion River, silty and clayey loams continued until 100 cm.
Weathered limestone bedrock was encountered in some of the shovel tests set back from the river on the mid-level terrace. The shallowest depth the weathered bedrock was encountered at was 20 cm. Artifacts were found between depths of 0 cm and 70 cm. The majority of the artifacts (21) were found between the surface and 40 cm deep. The only apparent historic disturbances are the drainage gullies and a well-trod canoe launch near the northwest corner of the site. An in-use railroad exists on the slightly higher terrace just to the south of the site.

The majority of the artifacts (17 pieces of debitage and the two teeth) were found in the eastern portion of the site, while far fewer (three pieces of debitage) were found throughout the center. The two pieces of pottery, the endscraper, and two pieces of the debitage were found on the western border of the site. The site is about one and a half acres in area, extending for about 550 feet along the terrace from west to east. The site is about 200 feet wide north-south. The northern and eastern boundaries were well established: multiple sterile shovel tests were dug to the north (towards the river) and east of the site. Charcoal was found in several of the shovel tests dug nearer the river but was determined to be non-cultural. The southern border of the site abuts a slightly higher, narrower terrace that was not tested. The western border of the site is a property line, the other side of which was not tested. Given the artifacts found on the western border and the landscape (the mid-level terrace the site is on juts out towards the Vermillion River just beyond the western boundaries of the site), it is likely the site continues to the west.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>20</td>
</tr>
<tr>
<td>Faunal Remains</td>
<td>3</td>
</tr>
<tr>
<td>Pottery</td>
<td>2</td>
</tr>
<tr>
<td>Endscraper</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.22. 21DK128 artifact inventory.
Figure 7.21. 21DK128 PDC debitage by size grade.

Figure 7.22. 21DK128 artifacts by depth.
Figure 7.23. 21DK128 debitage raw materials.

Figure 7.24. Pottery sherds from 21DK128, grit tempered, cord-marked surface.
Figure 7.25. Endscraper from 21DK128, Prairie du Chien Chert.

Site Number: 21DK129
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
The site was discovered while excavating shovel tests in a wooded area. A total of 11 shovel test were dug at and adjacent to the site in 10 meter intervals. The shovel tests were squares, about 35 cm on a side, and dug to 100 cm.

Physical Setting:
21DK129 is located against the wall of the Mississippi River Valley, near the junction of the valley and a ravine that extends to the south. The adjacent bluff tops stand about 150 feet above the site to the south, and a gravity spring emerges just to the north of the site. The Vermillion River is a little over half a mile to the north of the site, and the Mississippi River is a little over a mile to the northeast. On the other side of the Mississippi River to the north, the St. Croix River joins the Mississippi. The site is within the city limits of Hastings.
**Nearby Sites:**
The nearest known Precontact site is a single artifact find (21DK046) located a little over half a mile to the south, on a bluff top overlooking the ravine that enters the Mississippi River Valley near the site. A Woodland component artifact scatter (21DK128) is located to the east-northeast, next to the Vermillion River. A mound group and multicomponent (Archaic and Woodland) artifact scatter (21DK027 and 21DK072) are located about one mile to the north-northwest, in the Mississippi River Valley. The multicomponent artifact scatter (21DK072) includes grit tempered pottery, debitage, faunal remains, and chipped and ground stone tools. A single artifact find (21DK130) is located on a mid-level terrace at the junction of the Vermillion River and Mississippi River Valley, to the northwest.

**Results and Discussion:**
Four out of the 11 shovel tests were positive at the site, and a total of seven artifacts were found. These totals do not include two pieces of mammal bone found between 0 cm and 30 cm in one shovel test. At least one of the bones, a vertebra, appears to have been cut with a metal saw. Of the Precontact artifacts found at the site, five are G2 and G3 sized pieces of Prairie Du Chien Chert debitage, one is a G3 sized piece of debitage made of an unidentified material, and one is a retouched flake made out of an unidentified material.

21DK129 appears to be disturbed. Sandy, gravelly loam was encountered in the shovel tests until termination. The artifacts were found between depths of 0 cm and 70 cm. Most of the artifacts (5) were found between 40 cm and 70 cm below the surface. The site is about 80 feet long (east-west) and 40 feet wide (north-south). It appears the site once extended farther to the north. A gravel mine exists just north of the site, and artifacts were found in the topsoil spoil associated with the disturbance. The valley wall is about 100 feet to the south of the site.
<table>
<thead>
<tr>
<th><strong>Artifact</strong></th>
<th><strong>Count</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>6</td>
</tr>
<tr>
<td>Retouched Flake</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.23. 21DK129 artifact inventory.

**Site Number:** 21DK130  
**Site Type:** Single Artifact Find and Historic Structural Remnants  
**SHPO Region:** 3W

**Methods Employed:**  
The site was discovered while excavating shovel tests at a park owned and operated by the city of Hastings (C. P. Adams Park). The park is currently a disc golf course, consisting of open, grassy areas and woods. A total of 38 shovel tests were dug at and near the site. The shovel tests were squares, about 35 cm on a side, and dug to a depth of 100 cm unless obstructed (e.g. by a large root, bedrock, or dense concentration of historic materials).

**Physical Setting:**  
21DK130 overlooks the entrance of the Vermillion River into the Mississippi River Valley. The site is elevated around 30 to 50 feet above the nearby floodplains and wetlands. Bluffs rise to over 100 feet above the site. On the other side of the river to the northeast, the St. Croix and Mississippi rivers meet.

**Nearby Sites:**  
The nearest known Precontact sites, a mound group (21DK027) and multicomponent (Woodland and Archaic) artifact scatter (21DK072), are located in the Mississippi River Valley to the
northeast. A small lithic scatter (21DK129) is located near the junction of the Mississippi River Valley and a smaller valley, to the east-southeast of 21DK130. Overlooking the same secondary valley that is associated with 21DK129, a single artifact find (21DK046) is located on a bluff to the southeast. A Woodland component artifact scatter is located near the Vermillion River in the Mississippi River Valley, to the east-southeast of the 21DK130. Two single artifact finds (21DK083 and 21DK084) are located to the southwest of the site on a low-level terrace near the Vermillion River.

**Results and Discussion:**

A single Precontact artifact, a G3 sized piece of Knife River Flint debitage, was found at 21DK130. The artifact was found on the narrow, northern portion of the peninsula, between 40 cm and 50 cm below the surface. Silty and sandy loams were found throughout most of the shovel tests. Weathered bedrock was encountered, however, in two shovel tests near the western edge of the peninsula at a depth of 60 cm below the surface. Historic artifacts (e.g. glass, nails, bricks, and tile) were found throughout the areas shovel tested, as deep as 100 cm below the surface. Historic artifacts were particularly concentrated in the broad, southern portion of the peninsula. The historic artifacts are associated with the variously named “Hastings State Hospital”, which operated from 1900 to 1978.

The Precontact component of 21DK130 appears to have been largely disturbed by the construction and subsequent destruction of the structures associated with Hastings State Hospital. The relative scarcity of historic artifacts and the more intact appearance of the soils in the narrow, northern part of the peninsula does suggest, however, that this portion may be more intact. Also, historic aerials indicate (John R. Borchert Map Library 2015) that the southeastern corner of the peninsula may have been left undeveloped.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.24. 21DK130 artifact inventory.
Site Number: 21DK131
Site Type: Prehistoric Artifact Scatter and Historic Farmstead
SHPO Region: 3W

Methods Employed:
21DK131 was discovered while excavating shovel tests at a park owned and operated by Dakota County. The park is over 1600 acres in size and is mostly wooded. A total of 99 shovel tests were dug at and adjacent to the site in five and 10 meter intervals. The shovel tests were squares, about 35 cm on a side, and dug to 100 cm below the surface unless obstructed (e.g. by a large root).

Physical Setting:
21DK131 is located on a mid-level terrace in the valley of Trout Brook. The site sits about 10 feet above the current waterline. At about 400 feet across, the width of the terrace associated with the site remains consistent along its length. The length of the terrace is oriented northwest-southeast and is nearly 2000 feet in distance. The valley of Trout Brook is deeply incised, reaching depths of more than 100 feet. Limestone outcrops along the valley wall. The valley is also narrow, not exceeding 900 feet in width and averaging much less. The terrace the site is situated on overlooks the junction of a tributary to Trout Brook and Trout Brook. Trout Brook joins the Cannon River to the south-southeast of the site.

Nearby Sites:
The nearest known Precontact site, a lithic scatter (21DK132), is also located in the Trout Brook Valley, to the south-southeast. Five lithic scatters (21GD134, 21GD135, 21GD136, 21GD137, and 21GD190) are to the southwest, near the Cannon River and associated drainages. Seven lithic scatters (21GD132, 21GD133, 21GD0139, 21GD146, 21GD147, 21GD192, and 21GD193), two artifact scatters (21GD144 and 21GD145), a mound site (21GD069), a single artifact find (21GD191), and a combination artifact scatter/mound group/earthen embankment
site (21GD086) are also located near the Cannon River and associated drainages, to the east and southeast of 21DK131. The mound present at 21GD069 is elongated and partially composed of stone. Specific Precontact components are known for three of the above-mentioned sites (21GD0086, 21GD144, and 21GD145). 21GD086 and 21GD144 both contain Woodland and Mississippian components, while 21GD086 also contains an Oneota Tradition component. 21GD145 contains Archaic and Woodland components. Two single artifact finds (21DK134 and 21DK135) are located near Pine Creek, west-southwest of 21DK131. A Terminal (Late) Woodland, Koster/Mills type projectile point was found at both 21DK134 and 21DK135. Two more single artifact finds (21DK115 and 21DK116) are located to the northwest of the site, near tributaries to Trout Brook. Overlooking the Mississippi River Valley from a bluff top, a possible mound (21DKal) is located to the northeast.

Results and Discussion:
A total of 165 Precontact artifacts, not including charcoal, were found in 48 of the 99 shovel tests dug at 21DK131. Four of the Precontact artifacts are pieces of bone, at least two of which are mammal, and the remainder are pieces of unmodified lithic debitage. Of the pieces of lithic debitage, 141 consist of Prairie du Chien Chert. Prairie du Chien Chert of Shakopee Formation origin is much more prevalent at the site than Prairie du Chien Chert associated with the Oneota Formation, outnumbering the later 111 to 26 in terms of pieces of debitage (the remainder of the Prairie du Chien Chert debitage was not identified beyond general raw material type). Both variants of Prairie du Chien Chert occur most frequently as small pieces of debitage (i.e. G3 and G4 sized) at the site. Taken separately or together, nearly ninety percent of the Oneota and Shakopee Formation materials from the site are G3 or G4 sized. The rest of the debitage found at the site is also skewed towards smaller pieces. One piece each of Grand Meadow Chert, jasper, and quartz (all G3 sized), as well as a piece of silicified sandstone (G4 sized), two pieces of Knife River Flint (G3 and G4 sized), two pieces of Red River Chert (G3 sized), seven pieces of Swan River Chert (G2, G3, and G4 sized), and five pieces of an unidentified material or materials (G2 and G3 sized) account for the remainder of the debitage found at the site.
21DK131 appears to be largely intact. Artifacts were found up to 110 cm below the surface at the site. Most of the artifacts (86) were recovered between 20 cm and 60 cm below the surface. Sandy loams were present throughout most of the shovel tests on the northern two-thirds of the terrace, but sand was encountered near the bottoms of several. The southern third of the terrace slopes slightly downward in the direction of the valley wall and is lower, broader, and less level than the northern two-thirds. The soils revealed on the southern portion of the terrace contained higher concentrations of silt and clay than those in the northern portion, especially nearer the valley wall. The shovel tests dug on the lower terrace, which was culturally sterile, contained compact, gravelly loams. A passerby indicated that the low-level terrace along Trout Brook had been modified by activities associated with bank stabilization and road construction. The only other apparent human disturbances of the site are related to historic farming activities, which appear to have been concentrated on the northern portion of the terrace.

The boundaries of 21DK131 encompass nearly the entirety of the mid-level terrace, or about eight acres, extending about 300 feet north-south and 1600 feet east-west. The middle portion of the terrace contains the densest concentration of Precontact artifacts. Far fewer artifacts were found in the northern and southern portions of the terrace. The scarcity of Precontact artifacts in the northern portion might be related to the disturbances associated with the old farmstead, while the lack of artifacts in the southern portion is likely related to the lower and more irregular situation of that part of the terrace. Several small, natural benches extend towards Trout Brook from about halfway down the slope of the terrace on which the site is centered. One of the larger of these benches, projecting from about the middle of the higher terrace on which the site is mostly situated, was shovel tested, and prehistoric artifacts were found. It is possible that 21DK131 extends to the west along one or several more of these benches.

The lack of tools and the propensity for small-sized debitage is conspicuous, given the size of the site and the number of artifacts found. One explanation for this could be that the site was utilized briefly on multiple occasions. However, given the entrenched position of the site, as well as the distance up river from the Cannon, the location does not seem to be one through which groups of people would pass in route to a different location or area. Rather, the location of the site is suggestive of a destination unto itself. As such, if the site was utilized briefly on
multiple occasions, the occupations were likely related to specific activities that the valley of Trout Brook was particularly suited for. Another interpretation of the site is that it was used for more extended periods on multiple occasions but that these utilizations were moderate in nature (i.e. involving few individuals). More specifically, the site may represent a winter habitation. The Trout Brook Valley is well sheltered, and such valleys may have been preferred locations for cold season occupations.

Historic artifacts discovered at the site include nails, glass, ceramics, plastic, and pieces of metal. The historic artifacts were found down to 100 cm below the surface but mostly occurred in the upper 60 cm. All of the historic artifacts were located on the northern third of the terrace and appear to be related to a farmstead that once existed at the northern tip of the site. No building remnants were observed in the area at the time of the survey. Historic aerial photographs show that the buildings associated with the farmstead stood at least until the mid-1960s (John R. Borchert Map Library 2015). Charcoal found at the site was also isolated to the northern portion of the terrace and was most commonly encountered in the first 20 cm.

Although none of the buildings associated with the farmstead still stand, an extensive historic structure exists along the northern half of the sites eastern border. The structure is composed of limestone rubble and earth, reaches a height of about six feet, and has a maximum width of about eight feet. Curving with the valley wall, the length of the structure abruptly ends after a distance of around 1000 feet. Several small gullies cut through the northern portion of the structure. The limestone and earthen feature was likely created to divert the water that drained down from the uplands away from the farmstead.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>161</td>
</tr>
<tr>
<td>Faunal Remains</td>
<td>4</td>
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</tbody>
</table>

Table 7.25. 21DK131 artifact inventory.
Figure 7.26. 21DK131 PDC debitage by size grade.

Figure 7.27. 21DK131 Shakopee PDC debitage by size grade.

Figure 7.28. 21DK131 Oneota PDC debitage by size grade.
Figure 7.29. 21DK131 artifacts by depth.
Figure 7.30. 21DK131 debitage by lithic raw material.

**Site Number:** 21DK132

**Site Type:** Lithic Scatter

**SHPO Region:** 3W

**Methods Employed:**

21DK132 was discovered while excavating shovel tests at a park owned and operated by Dakota County. The park is over 1600 acres in size and is mostly wooded. A total of 19 shovel tests were dug at and adjacent to the site in 10 meter intervals. The shovel tests were squares, about 35 cm on a side, and dug to 100 cm below the surface unless obstructed (e.g. by a large root).
**Physical Setting:**

21DK132 is located in the valley of Trout Brook, situated on a mid-level terrace that abuts the valley wall and an adjacent, slightly lower terrace. The site sits about 10 feet to 20 feet above the current waterline. The portion of the higher level terrace that the site is located on is about 150 feet wide and hemmed by the valley wall. The width of the terrace is consistent the north, after which it narrows drastically for a short distance and then widens to the northwest. The lower terrace that is associated with the site is less level and more amorphous in outline than the terrace above it. Several small gullies and rills cut through the lower terrace. Abutting the lower terrace on the eastern edge of the site, a spring emerges from the base of the valley wall. To the northwest of the site an intermittently flowing ravine joins the Trout Brook Valley. The valley of Trout Brook is deeply incised, reaching depths of more than 100 feet. Limestone outcrops along the valley wall. The valley is also narrow, not exceeding 900 feet in width and averaging much less. Trout Brook joins the Cannon River to the southeast of the site.

**Nearby Sites:**

The nearest known Precontact site, an extensive lithic scatter (21DK131), is also located in the Trout Brook Valley, to the north-northwest. Five lithic scatters (21GD134, 21GD135, 21GD136, 21GD137, and 21GD190) are located to the southwest, near the Cannon River and associated drainages. Three lithic scatters (21GD132, 21GD133, and 21GD192) and a single artifact find (21GD191) are also located near the Cannon River and associated drainages south of the site. Other nearby sites associated with the Cannon River and drainages to it include four lithic scatters (21GD139, 21GD146, 21GD147, and 21GD193), two artifact scatters (21GD144 and 21GD145), a mound site (21GD069), and a combination artifact scatter/mound group/earthen embankment site (21GD086), these are to the east, southeast, or northeast of 21DK132. The mound present at 21GD069 is elongated and partially composed of stone. Specific Precontact components are known for three of the above-mentioned sites (21GD086, 21GD144, and 21GD145). 21GD086 and 21GD144 both contain Woodland and Mississippian components, while 21GD086 also contains an Oneota Tradition component. 21GD145 contains Archaic and Woodland components. Two single artifact finds (21DK134 and 21DK135) are
located near Pine Creek, to the west of 21DK132. A Terminal (Late) Woodland, Koster/Mills type projectile point was found at both 21DK134 and 21DK135.

**Results and Discussion:**

Six of the 19 shovel tests dug at or adjacent to 21DK132 were positive, producing nine artifacts. Ten artifacts were also found on the surface, just north of a bridge that spans the spring on the eastern border of the site. All 19 artifacts that were found at the site are pieces of unmodified lithic debitage. Most of the debitage (16 pieces) found at the site is made of Prairie du Chien Chert. Of the pieces of Prairie du Chien Chert debitage that were assigned a specific formation of origin, three are associated with the Oneota Formation and 11 with the Shakopee Formation. The Oneota Formation materials found at the site are G4 through G2 sized, while the assemblage of Shakopee Formation materials is comprised of a G4 sized piece, six G3 sized pieces, and four G2 sized pieces. A G3 sized piece of Jasperoid Cedar Valley Chert, a G2 sized piece of Red River Chert, and a G3 sized piece of an unidentified material account for the rest of the artifacts recovered from the site. Three shovel tests also produced charcoal (not included in the total artifact count for the site), one of which contained a particularly dense concentration from the surface to 85 cm deep.

The site appears to be largely intact. The shovel tests dug at and near the site mostly contained sandy loams, but sand was encountered near the bottom of some. Also, a thin layer of silt or sandy silt was encountered at or near the surface in several of the shovel tests. The soils in the lower portion of the site were slightly siltier than in the more highly elevated areas. The artifacts found at the site were recovered from as deep as 90 cm below the surface. Most of the artifacts discovered in the shovel tests (six of nine) were found between zero and 50 cm below the surface, however.

The boundaries of the site extend about 500 feet north-south and 200 feet east-west, encompassing an area of around two acres. The southern and western edges of the site are bound by the valley walls, while areas to the north and east of the site become progressively lower and damper. Twenty-two shovel tests were also dug to the northwest of the site (not included in the
total shovel test count for the site), all of which were culturally sterile. Twelve of the twenty-two shovel tests were dug just to the northwest of the site, on the expanded portion of the higher terrace. The rest of the sterile shovel tests excavated beyond the boundaries of the site were dug in the mid and low-level terraces on the other side of the intermittent drainage to the northwest. Although all of the shovel tests dug to the northwest of the site were sterile, a dark (10 YR 2/1), buried horizon was encountered at a depth of about 80 cm below the surface in two of the shovel tests dug on the mid-level terrace beyond the drainage. The shovel tests that contained the buried horizon were 10 meters apart, and one contained charcoal within the buried layer. The landforms the site is situated on are similar to those that were tested and found to be sterile to the northwest, the most apparent difference being the presence of the spring next to the site. As such, the site is likely the result of activities associated with the spring. The small quantity of artifacts recovered, as well as the spatial constraints of the site, suggest that the utilizations of the spring were moderate and short-term.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>19</td>
</tr>
</tbody>
</table>

Table 7.26. 21DK132 artifact inventory.
Figure 7.31. 21DK132 artifacts by depth.

Figure 7.32. 21DK132 PDC debitage by size grade.
Figure 7.33. 21DK132 debitage by lithic raw material.

Site Number: 21DK133
Site Type: Lithic Scatter
SHPO Region: 3W
Methods Employed:
The site was discovered while shovel testing in a park owned and operated by Dakota County. The park is about 450 acres in size and consists mostly of open, grassy areas, wetlands and woods. A total of 27 shovel test were dug at and adjacent to the site in 10 meter intervals. The shovel tests were squares, about 35 cm on a side, and dug into the C horizon.

Physical Setting:
21DK133 cuts across the approximate center of a narrow ridge, overlooking the shore of an artificial lake that was created at the junction of tributaries to the Vermillion River. The lake and surrounding area comprise a county park, which is about 450 acres in extent. The ridge the site is situated on projects from the northwestern uplands, is composed of several fingers, and is about 50 feet above the lake. The lake itself is in the middle of a wetland complex that extends to the northwest and south. Lowlands stretch between the site and the Vermillion River, which is to the south. To the south-southeast an isolated bluff abuts the Vermillion River.

Nearby Sites:
The nearest known site is a lithic scatter (21DK056) to the northeast, between the North Branch of the Vermillion River and a tributary to the North Branch of the Vermillion River. The next nearest known sites are single artifact finds and a lithic scatter (21DK057, 21DK108, and 21DK109) located along the Vermillion River, southeast and southwest of the site. 21DK076, a single artifact find, is located to the west, off North Creek.

Results and Discussion:
Four out of 27 shovel tests were positive at the site, and a total of four artifacts were found. 21DK133 appears to be intact. Sandy-gravelly loam was encountered in the shovel tests until depths between 20 cm and 50 cm, after which was sandy gravel. The artifacts were found 20 cm to 40 cm below the surface and were not found past the sandy-gravelly loam. All four of the artifacts found at the site are G3 sized pieces of debitage, three of which are made of Prairie du
Chien Chert and one of which is made of Swan River Chert. The length of the site runs roughly northwest to southeast, and is around 500 feet. The width of the site is less than 100 feet. Two of the artifacts were found on the western end of the site, and two of the artifacts were found on the eastern end of the site. The ridge associated with the site is extremely narrow and amorphous, composed of multiple fingers that are narrower still. While the finger that projects to the southeast of the site was tested and found to be negative, the others were not tested. The site may continue along any one of the untested fingers, which extend to the west, southwest, east, and northeast.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 7.27. 21DK133 artifact inventory.

**Site Number:** 21DK134  
**Site Type:** Woodland Component Single Artifact Find  
**SHPO Region:** 3W

**Methods Employed:**  
The site was discovered while excavating shovel tests in an open, grassy area. A total of 21 shovel tests were dug at and near the site. Seventeen of the shovel tests were dug in 20 meter intervals, paralleling Pine Creek. The other four shovel tests were dug in three meter intervals around the positive shovel test that defines the location and extent of the site. The shovel tests were squares, about 35 cm on a side, and dug to depths between 50 cm and 100 cm below the surface.
Physical Setting:
21DK134 is located southwest of Pine Creek. The site is situated in lowlands, about five feet above the creek. Pine Creek joins the Cannon River to the southeast of the site. In general, the area around the site is low-lying and topographically undramatic.

Nearby Sites:
The nearest known site (21DK135), a single artifact find of a Koster/Mills type, Terminal (Late) Woodland projectile point, is located on Pine Creek, to the southeast. Two single artifact finds (21GD115 and 21GD116) are located about to the north-northeast of the site, near tributaries of Trout Brook. A cluster of lithic scatters (21DK032, 21DK033, 21GD175, and 21GD179/21DK071) occurs to the southwest, under the waters of Lake Byllesby. A lithic scatter (21DK132) and artifact scatter (21GD131) are located in the Valley of Trout Brook, to the east of the site. To the north-northwest, an Archaic and Woodland component artifact scatter is located in uplands.

Results and Discussion:
The base of a projectile point was the only artifact found at 21DK134. The projectile point is side-notched, made of an unidentified material, and most closely resembles Koster/Mills type projectile points of the Terminal (Late) Woodland period (Morrow 1984:78). The artifact was found at a depth of 30 cm to 40 cm. Silty loam or muck was encountered in most shovel tests down to between 40 cm and 100 cm. If a soil transition was present, it typically involved more clayey soils. A thin layer of sandy soil was also encountered in several of the shovel tests between 20 cm and 50 cm below the surface.

21DK134 does not appear to extend along Pine Creek in either direction: 15 shovel tests were dug in 20 m intervals along the creek to the northwest of the site, one shovel test was dug 20 m to the southeast, and four shovel tests were dug in three meter intervals around the positive shovel test. Four sterile shovel tests were also dug (not included in the total shovel test count for the site) on slightly higher ground to the southeast of the site, about 700 feet away. Given the
location and condition of the projectile point, as well as the lack of other artifacts, the projectile was likely lost or discarded during use. The nearby presence of an isolated find of a similar projectile point (21DK135) suggests a pattern of use associated with this span of Pine Creek during the Terminal Woodland.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Projectile Point</td>
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</tbody>
</table>

Table 7.28. 21DK134 artifact inventory.

Figure 7.34. Projectile point from 21DK134.
**Site Number:** 21DK135  
**Site Type:** Woodland Component Single Artifact Find  
**SHPO Region:** 3W

**Methods Employed:**  
The artifact was donated to the Science Museum of Minnesota in the summer of 2017.

**Physical Setting:**  
21DK135 is located within a few hundred feet of Pine Creek. Gullies drain to the creek on either side of the site. Pine Creek joins the Cannon River to the southeast of the site. In general, the surrounding area is low-lying and topographically undramatic.

**Nearby Sites:**  
The nearest known site (21DK134), a single artifact find of a Koster/Mills type, Terminal (Late) Woodland projectile point, is located on Pine Creek, to the northwest. Overlooking Pine Creek from a rise, a small lithic scatter (21GD190) that includes a projectile point is located to the southwest of the site. Two single artifact finds (21GD115 and 21GD116) are located to the north-northeast of the site, near tributaries to Trout Brook. A lithic scatter (21DK132) and artifact scatter (21GD131) are located in the Valley of Trout Brook, to the east of the site.

**Results and Discussion:**  
The artifact donated to the museum from 21DK135 is a corner-notched projectile point. The projectile point is made of Burlington Chert and most closely resembles Koster/Mills type projectile points of the Terminal (Late) Woodland period (Morrow 1984:78). Although more artifacts may be associated with the site (the site was not visited as a part of this survey), the placement of the site in a low-lying area is consistent with an isolated find. The nearby presence
of an isolated find of a similar projectile point (21DK134) suggests a pattern of use associated with this span of Pine Creek during the Terminal Woodland.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Count</th>
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<tbody>
<tr>
<td>Projectile Point</td>
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</tbody>
</table>

Table 7.29. 21DK135 artifact inventory.

Figure 7.35. Projectile point from 21DK135.
Sites re-surveyed

Pedestrian survey was conducted at two previously identified sites where additional materials were collected: 21DK029 and 21DK038. Both are lithic scatters located in the Cannon Valley.

Site Number: 21DK029
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
A surface survey was conducted at the site in transects spaced two to five meters apart. The site was in a field of sprouted soybeans, and surface visibility was excellent at the time of the survey.

Physical Setting:
21DK029 is located on adjacent portions of low and mid-level terraces, which differ by a little more than ten feet in elevation. The Cannon River is to the northwest of the site. To the west and southwest of the site, a gully drains towards the river. The upper terrace begins about 350 feet to the southeast of the site.

Nearby Sites:
The nearest known site (21DK038) is a small lithic scatter located to the southwest, on the other side of the drainage gully, near the Cannon River. 21DK117, also a small lithic scatter, is located to the east-southeast on a higher terrace of the Cannon River. On the other side of the Cannon River, to the west-southwest, is a lithic scatter (21DK030) that includes scrapers and a hammerstone. A possible Precontact site (21DKc) is located to the south-southeast. 21DK126 and 21DK127, a lithic and artifact scatter near Chub Creek, are located to the east-northeast. A cluster of lithic scatters (21DK032, 21DK033, 21GD175, and 21GD179/21DK071) occurs to the east, under the waters of Lake Byllesby.
Results and Discussion:
Christina Harrison found six flakes and a core (all chert) within an area around 100 feet long and 65 feet wide at the site in 1978. Nine pieces of debitage, a Prairie du Chien endscraper, and a core of an unidentified material were found at the site during this survey. The majority of the debitage (seven pieces) is Prairie du Chien chert. Debitage of quartz and an unidentified material account for the rest. The majority of the artifacts (eight) were found within the area previously identified as the site. The core, endscraper, and unidentified piece of debitage were found to the west of the old site border, up to about 300 feet away, along the lower terrace. The estimated dimensions of the site are now a little over 400 feet north-south by about 450 feet east-west. The site may be partially intact. A soil probe near the center of the old site-area revealed loam (10YR 2/1) down to 45 cm, more clayey loam from 45 to 60 cm, and bedrock at 60 cm.

21DK029 is about three and a half acres in extent. The western border of the site is roughly defined by the Cannon River and drainage gully. The central portion of the site is in a patch of woods that juts out into the field from the drainage and was not surveyed. The southern and eastern borders of the site were well established. Although the terraces the site is situated on are fairly broad and run east, the site does not appear to continue in that direction. Rather, the site seems to focus around the junction of the Cannon River and gully.

<table>
<thead>
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<td>Core</td>
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</tr>
<tr>
<td>Endscraper</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 7.30. 21DK029 artifact inventory.
Figure 7.36. 21DK029 debitage by raw material.

Figure 7.37. Endscraper from 21DK029.
Site Number: 21DK038
Site Type: Lithic Scatter
SHPO Region: 3W

Methods Employed:
A surface survey was conducted at the site in transects spaced two to five meters apart. The site was in a field of sprouted soybeans, and surface visibility was excellent at the time of the survey.

Physical Setting:
21DK038 extends along a low to mid-level terrace of the Cannon River. The upper terrace begins about 300 feet to the south of the site. A drainage gully, which is fairly incised (more than 10 feet in places), meets the Cannon River to the northeast of the site.

Nearby Sites:
The nearest known site (21DK029) is a small lithic scatter located to the northeast, near the Cannon River. 21DK117, also a small lithic scatter, is located to the east on a higher terrace of the Cannon River. A possible Precontact site (21DKc) is located to the south-southeast. On the north side of the Cannon River is a lithic scatter (21DK030) that includes scrapers and a hammerstone.

Results and Discussion:
Christina Harrison found two utilized flakes (one of chert and one of quartz) within an area of about 100 feet by 65 feet at the site in 1978. Three Prairie du Chien flakes, G2 and G3 sized, were found at the site during this survey. The three artifacts were found over a fairly wide area, extending the boundaries of the site to the east and north. The site now has dimensions of about 165 feet north-south and 825 feet east-west. The site may be partially intact. A soil probe near
the center of the site revealed loam (10YR 2/1) down to 50 cm, more clayey loam from 50 to 70 cm, and bedrock at 70 cm.

21DK038 is about three acres in size. The northern boundary of the site is roughly defined by the Cannon River. The southern and eastern borders of the site were well established. The western border of the site was not well established, being against a field that was not surveyed. The gully just east of the site is the most obvious feature that differentiates this portion of the Cannon River from adjacent areas, although the site appears to end well before it. As the terrace the site is situated on widens to the west, it is also possible that 21DK038 is related to a more intensely utilized area in that direction.

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Unmodified Chipping Debris</td>
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</table>

Table 7.31. 21DK038 artifact inventory.

**Review of Alpha sites**

A total of 20 contact and Precontact-era Alpha sites were noted within Dakota County at the start of this project. Alpha sites are sites that are rumored to exist, but haven’t been evaluated by professional archaeologists. Our objective was to attempt to examine any rumored to be Precontact or Contact era sites and, if evidence is found, record them as actual sites. Of these Alpha sites, 11 were targeted for survey (21DKaa, 21DKag, 21DKah, 21DKal, 21DKb, 21DKc, 21DKk, 21DKl, 21DKx, 21DKu, and 21DKy). Two of the Alpha sites targeted for survey (21DKI and 21DKx) were the possible locations of historic Dakota villages, and two of the targeted sites (21DKc and 21DKk) were possible lithic or artifact scatters. The remainder of the Alpha sites targeted for survey were a single artifact find (21DKb) and six possible mounds and/or burials (21DKaa, 21DKag, 21DKah, 21DKal, 21DKu, and 21DKy). Two Alpha sites
(21DKak and 21DKh) were not targeted for survey because collections from the sites already existed but had not been formally reported.

Attempts were made to gain physical access to the Alpha sites selected for survey, except in the case of sites that were heavily dissected by roadways. Five of the Alpha sites targeted for survey were heavily dissected by roadways (21DKaa, 21DKah, 21DKl, 21DKu, and 21DKy) and were investigated via a digital elevation model, as well as driven through. Landowner permissions were pursued with regards to five of the targeted Alpha sites (21DKal, 21DKb, 21DKc, 21DKk, and 21DKx). None of the five landowners associated with 21DKal were reached, and the site was investigated via a digital elevation model, as well as driven through. The two main landowners associated with 21DKb and 21DKx were reached. Access to 21DKb and 21DKx was denied, however, and the sites were not surveyed. Four of twelve landowners associated with 21DKc and 21DKk were contacted and granted access, resulting in surface surveys of portions of both sites. No attempts were made to contact landowners with regards to 21DKag as the Alpha site was largely encompassed by public land. 21DKag was driven through, walked through, and investigated via a digital elevation model.

No archaeological remains or features were observed through the windshield and electronic investigations of 21DKaa, 21DKah, 21DKl, 21DKu, and 21DKy. The walk-through of 21DKag, however, resulted in the identification of two clusters of anomalous surface features. Although no archaeological features were noted through the windshield survey of 21DKal, anomalous surface features were observed on a digital elevation model of the bluff edge to the northwest of the site. No artifacts were recovered from the surface surveys of 21DKc and 21DKk; however, conversations with the grandson of the individual who reported 21DKc resulted in the acquisition of new information about the site. Archaeological collections associated with 21DKh (21DK138) and 21DKak (21DK139) were formally reported.
Site Number: 21DKal  
Site Type: Possible Mound  
SHPO Region: 3E

Methods Employed:
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through. An attempt was made to gain access to the site, but the attempt was unsuccessful.

Physical Setting:
21DKal is located on or near a bluff edge that overlooks the Mississippi River Valley from the west. The Vermillion River is east and north of the site. Upper Clear Lake is east of the site. A ravine enters the Mississippi River Valley at the northern edge of the site. The majority of the alpha site is in a wooded residential area.

Nearby Sites:
A large number of Woodland and Oneota component sites exist several miles to the southeast of the site, in and near the Mississippi River Valley. Heading up the valley to the northwest, the nearest known site (21DK128) is a Woodland component artifact scatter.

Results and Discussion:
The site form indicated that the mound would likely be destroyed by the housing development. No mounds or possible mounds were observed on the digital elevation model within the boundaries of the alpha site. However, a number of possible mounds were identified on the Digital Elevation Model along the bluff edge just to the northwest of the site, across the ravine. The drive through the site did not result in the identification of any mounds, but visibility was poor through the trees.
**Site Number:** 21DKaa  
**Site Type:** Possible Mound Group  
**SHPO Region:** 4E

**Methods Employed:**
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through.

**Physical Setting:**
21DKaa is situated on and around a rise between Early Lake and another small body of water. The Mississippi River Valley is a little over three miles to the north of the site. The site is located at the Interstate 35 East-West split, and the area is highly developed (commercial).

**Nearby Sites:**
A single Paleoindian projectile point (21DK039) was found south of the site. Two possible mound groups (21DKag and 21DKah) and a single artifact find of an Archaic or Woodland projectile point (21DK042) are located to the southeast. A lithic scatter (21DK044) is located on the shore of Alimagnet Lake, to the east. The possible location of Penichon’s Village (21DKx), a historic Dakota settlement, is located to the north, overlooking the Mississippi River Valley.

**Results and Discussion:**
No mounds or possible mounds were observed on the digital elevation model of the alpha site. The drive through the site also did not result in the identification of any mounds. Given the level of development in the area, it is possible that mounds once existed within the boundaries of the site but were destroyed.
Site Number: 21DKag
Site Type: Possible Mound Group
SHPO Region: 4E

Methods Employed:
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through. The southern half of the site was walked through.

Physical Setting:
21DKag is located between two lakes. The space between the lakes is low and in places marshy. The Mississippi River Valley is located about five miles to the north of the site. The majority of the northern portion of the site is a highly developed residential area. Portions of the southern area of the site may be relatively undisturbed, being a city park and beach.

Nearby Sites:
Another possible mound group (21DKah) is located near the shore of Crystal lake, to the west. A single artifact find of an Archaic or Woodland projectile point (21DK042) is located on an island in a lake, to the west-southwest. A lithic scatter (21DK044) is to the north-northeast. A single Paleoindian projectile point (21DK039) was found to the west of the site. 21DKaa, a possible mound group located near the shore of a lake to the northwest. The possible location of Penichon’s Village (21DKx), a historic Dakota settlement, is located to the north-northwest, overlooking the Mississippi River Valley.
Results and Discussion:
No mounds or possible mounds were observed on the digital elevation model of the alpha site. The drive through the site also did not result in the identification of any mounds. Two groups of anomalous surface features were observed during the walk through of the southern portion of the site. The first group of anomalous surface features that was observed is located on the shore of the lake. Four possible mounds (two conical and two slightly elongated), ranging from two to three feet in height and ten to 12 feet in circumference, were observed in this group. The other group of anomalous surface features that was identified is also located on the shore of the lake. Two possible conical mounds, ranging from four to six feet in height and 60 to 80 feet in circumference, were observed in this group. This second group of surface anomalies that was identified abuts the southwestern end of the beach parking lot, however, and may be spoil associated with the leveling of the area.

Site Number: 21DKah
Site Type: Possible Mound Group
SHPO Region: 4E

Methods Employed:
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through.

Physical Setting:
21DKah is located on the northern shore of a lake, situated around an elevated point. The Mississippi River Valley is about four miles to the north of the site. The site is within a highly developed residential area.
Nearby Sites:
A single artifact find of an Archaic or Woodland projectile point (21DK042) is located on an island in a lake, a little over a quarter mile to the south of the site. A possible mound group (21DKag) is located a little less than half a mile to the east. Another possible mound group (21DKaa) is located near the shore of a lake, about a mile to the northwest of the site. A single Paleoindian projectile point (21DK039) was found to the west. A lithic scatter (21DK044) is located about a mile and a half to the northeast of the site. The possible location of Penichon’s Village (21DKx), a historic Dakota settlement, is located about five miles to the north-northwest, overlooking the Mississippi River Valley.

Results and Discussion:
No mounds or possible mounds were observed on the digital elevation model of the alpha site. The drive through the site also did not result in the identification of any mounds. Due to the level of residential development, however, the topography within the boundaries of the site is rather erratic, making it difficult to read the landscape.

Site Number: 21DKu
Site Type: Possible Mound
SHPO Region: 4E

Methods Employed:
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through.
Physical Setting:
21DKu is located on a bluff that overlooks the Mississippi River Valley from the west. Pigs Eye Lake is to the northeast of the site. The site is within a highly developed residential area that is partially wooded.

Nearby Sites:
21DKu abuts the northern portion of the western border of 21DKl, the possible location of the historic Dakota settlement known as Kaposia. 21DK010 (a destroyed mound group) and 21DK016 (a disturbed mound group) are partially or completely within the boundaries of 21DKl. 21DKy, a possible Precontact burial area, to the northwest. A destroyed mound group (21DK009) is also to the northwest of the site.

Results and Discussion:
The site form indicated that the mound was completely destroyed in the 1930s. No mounds or possible mounds were observed on the digital elevation model of the alpha site. The drive through the site also did not result in the identification of any mounds, but visibility was poor through the trees.

Site Number: 21DKy
Site Type: Possible Burials
SHPO Region: 4E

Methods Employed:
A one meter digital elevation model (displayed with hillshading) of the site and surrounding area was examined, and the site was driven through.
Physical Setting:
21DKy is located on a bluff that overlooks the Mississippi River Valley. Pigs Eye Lake is to the northeast of the site. The site is within a highly developed residential area that is partially wooded.

Nearby Sites:
21DKu, a possible mound and burial area, to the southeast of the site. The northwestern corner of 21DKl, the possible location of the historic Dakota settlement known as Kaposia, is to the east of the site. 21DK010 (a destroyed mound group) and 21DK016 (a disturbed mound group) are partially or completely within the boundaries of 21DKl. A destroyed mound group (21DK009) abuts the northern portion of the site.

Results and Discussion:
The site form indicated that the burials were destroyed through excavation. No disturbed burials were observed on the digital elevation model of the alpha site. The drive through the site also did not result in the identification of any burials, destroyed or otherwise, but visibility was poor through the trees.

Site Number: 21DKb
Site Type: Possible Artifact Find Spot
SHPO Region: 4E

Methods Employed:
An attempt was made to gain access to the site, but the attempt was unsuccessful.

Physical Setting:
21DKb is situated around a rise that overlooks wetlands to the west and north. The Mississippi River Valley is to the northwest of the site. The southern portion of the site is a residential area, but the majority of the site is wooded and appears to be undisturbed.
**Nearby Sites:**
Two burial sites associated with Black Dog’s Village (21DK025 and 21DK026) overlook the Mississippi River Valley to the west of the site. A possible historic Dakota site (21DK036) is located in the Mississippi River Valley, to the northwest. 21DK035, a historic and Precontact artifact scatter, is located to the west-southwest and is also in the Mississippi River Valley. Another Mississippi River Valley site, a Woodland artifact scatter (21DK034), is located to the north. A single artifact find (21DK077) is located to the south-southeast, on the shore of a lake. To the east there are no known Precontact sites until near the Mississippi River Valley, which is about eight miles away.

**Results and Discussion:**
Mike Renstrom found a single groundstone tool at the site prior to 1989.

**Site Number:** 21DKc
**Site Type:** Possible Artifact Scatter
**SHPO Region:** 3W

**Methods Employed:**
The edges of the alfalfa fields on either side of the drainage ditch that cuts through the approximate center of the site were surface surveyed. Surface visibility in the alfalfa was poor. The field that abuts the side of Spring Creek and the border of 21DKc contained harvested soybeans and was surface surveyed in transects spaced five meters apart. Surface visibility was better in the harvested soybeans than in the alfalfa but still poor. The creek-side edge of the field that abuts the side of Spring Creek and the border of the alpha site was also surface surveyed. This field contained standing corn and good to excellent surface visibility.
Physical Setting:
21DKc is set in lowlands around Spring Creek. A drainage cuts through the approximate center of the site. Prairie Creek is to the south-southeast of the site. A low, fairly level expanse exists between the two creeks until Lake Byllesby is met, to the northeast. Bluffs hem the lowlands, running along the outer sides of Spring and Prairie creeks. Uplands also are present between the creeks to the southwest of the site. A small but prominent, isolated bluff is situated to the south of the site. The majority of the site is agricultural land.

Nearby Sites:
A small lithic scatter (21DK117) is located s to the north of the site, near the Cannon River. No known Precontact sites exist to the south, west, or east for several miles.

Results and Discussion:
The individual who reported the site, John Martin Thompson (the site form erroneously refers to him as “J.W. Thompson”), farmed the area beginning around 1917. Although no archaeological materials were found in the portions of the site and adjacent areas that were surface surveyed as a part of this project, some information was gleaned through an email correspondence with John Thompson’s grandson, Dr. Kirill Thompson (emails to author, October 16-31, 2017). Dr. Thompson stated that the “miniature ivory totem” referred to in the site form was most likely found just south of Spring Creek and that the projectile points referred to were actually found on or near the isolated bluff to the south of the alpha site. There is a nook on the east side of the bluff, and Dr. Thompson believes the arrowheads were found near a cliff in this area. Dr. Thompson stated that his grandfather found a mastodon tusk on the farm as well. Except for the ivory totem, which was given to Lloyd Wilford in 1947, John Thompson donated his artifacts and the tusk to Carleton College in the early 1960s. Dr. Thompson inquired about the collection around ten years ago and was informed that the state of provenience records from that period, as well as a break-in and robbery, made it difficult to locate the collection. An article about John Thompson’s discoveries was published in the Northfield News (publication date unknown) and possibly the Cannon Falls Beacon.
Site Number: 21DKk
Site Type: Possible Lithic Scatter
SHPO Region: 3W

Methods Employed:
The northern and eastern edge of a harvested corn field with poor surface visibility was surface surveyed. The southern portion of the eastern edge of the corn field falls within the boundaries of the alpha site. A portion of a harvested soybean field adjacent to the eastern border of the alpha site was surface surveyed in transects spaced five meters apart. A drainage ditch cuts through the soybean field, and the area to the west of the ditch was the portion of the field that was surveyed. Surface visibility was poor in the harvested soybean field at the time of the survey.

Physical Setting:
21DKk is set between the South Branch of the Vermillion River and the North Branch of Chub Creek. Running roughly west to east, uplands are immediately to the south of the site. To the north of the site, lowlands extend until the South Branch of the Vermillion River. The majority of the site is agricultural land.

Nearby Sites:
The nearest known sites are a lithic scatter (21DK110) and single artifact find (21DK111) located near the Vermillion River, to the north. To the southeast of the site, are a number of lithic scatters (21DK029, 21DK030, 21DK038, 21DK117, and 21DK127) and an artifact scatter (21DK126), which are located near the Cannon River. A Woodland and early Archaic/late Paleoindian component lithic scatter (21DK113), a lithic scatter (21DK028), and a single artifact find (21DK040) are located near Chub Lake, to the west-southwest of the site.
Results and Discussion:
No Precontact artifacts were found in the areas surveyed. The site form includes a letter written by the collector, Edith Pflaum, as well as drawings of some of the artifacts associated with the site. Although it is not entirely clear, the collection may have been donated to the University of Minnesota.

Site Number: 21DK1
Site Type: Possible Location of Historic Dakota Village
SHPO Region: 4E

Methods Employed:
The site was driven through.

Physical Setting:
21DK1 is located along a terrace in the Mississippi River Valley and on the adjacent bluffs that overlook the valley. A ravine cuts through the portion of the site that is situated on the bluffs. Pigs Eye Lake is to the northeast of the site. The site is in a highly developed residential, commercial, and industrial area.

Nearby Sites:
A destroyed mound group (21DK010) and a disturbed mound group (21DK016) are partially or completely within the boundaries of 21DK1. 21DKu, a possible mound and burial, abuts the northern portion of the western border of 21DK1. 21DKy, a possible Precontact burial area, is to the northwest. A destroyed mound group (21DK009) is just north of 21DKy. A single mound (21DK013) is located to the south of the site.
Results and Discussion:
21DK1 is the possible location of the historic Dakota Village known as “Kaposia”. Although the area is highly developed, remnants of the village may exist along the bluff edges that overlook the Mississippi River Valley and the ravine that runs through the site.

Site Number: 21DKx
Site Type: Possible Location of Historic Dakota Village
SHPO Region: 4E

Methods Employed:
An attempt was made to gain access to the site, but the attempt was unsuccessful.

Physical Setting:
21DKx is on a bluff that overlooks the Minnesota River Valley from the south. Black Dog Lake is to the northeast of the site. The eastern portion of the site is an industrial area, while the western portion is wooded and undeveloped.

Nearby Sites:
An Archaic component artifact scatter and burial site (21DK041) is located to the south-southeast, overlooking Black Dog Lake from the bluffs. A large, destroyed mound group (21DK008) is located in the Minnesota River Valley and on the adjacent bluffs that overlook Black Dog Lake, to the east-northeast. Two disturbed burial sites (21DK025 and 21DK026) associated with Black Dog’s Village, a historic Dakota settlement, are located on bluffs that overlook the Minnesota River Valley, to the northeast. A Woodland and Plains Village component artifacts scatter (21DK065) is also located to the northeast but is in the Minnesota
River Valley. A Precontact and historic component artifact scatter (21DK035) is located in the Minnesota River Valley as well, just to the east of 21DK065. A lithic scatter (21DK044) is located on Alimagnet Lake, to the south-southeast.

**Results and Discussion:**

21DKx is the possible location of the historic Dakota settlement known as “Penichon’s Village”. The eastern portion of the site was likely destroyed through industrial development (i.e. gravel mining). The western portion of the site is wooded and may be largely intact except for disturbances associated with past agricultural activities (John R. Borchert Map Library 2015).

**Materials Recovered**

**Lithic Artifacts.**

A total of 555 lithic artifacts were recovered from the 29 sites discovered and two sites revisited during field survey. Of the lithic artifacts found, about 92% are pieces of unmodified lithic debitage, 3% are retouched flakes, 3% are formal tools (i.e. drills, scrapers, and projectile points), and 2% are cores and informal bifaces. Roughly 75% of the lithic artifacts found during the survey were located at two large lithic scatters (21DK113 and 21DK120) and an artifact scatter (21DK131). The remainder of the lithic artifacts are associated with 11 single-artifact sites, 14 small lithic scatters, and three artifact scatters. *Stone Tools of Minnesota* (Morrow et al. 2015), a synthesis of observed lithic tool use-patterns in Minnesota, is the source for the information that follows with regards to lithic raw material availability.

A total of 15 tools were recovered during field survey. Of these, seven are diagnostic projectile points, three are biface fragments, one is a drill, and three are endscrapers, and one is a side-scraper. Additionally, seven cores were recovered. Three cores are quartz, one is Grand Meadow Chert, two are Prairie du Chein Chert, and one is unidentified.
Diagnostic projectile points in the collection were found at four sites, represent Late Paleoindian/Early Archaic through Terminal Woodland in time, and were made from a variety of local and non-local raw materials. Four points were found at 21DK113 on Chub Lake (Figure 7.38). These include a Late Paleoindian/Early Archaic Prairie du Chein Chert Dalton point, an Initial (Middle) Woodland, Hopewellian, Manker point of Prairie du Chein Chert, an Initial (Middle) Woodland Pelican Lake point of heat-treated Red River Chert, and a resharpened Terminal (Late) Woodland St. Croix style point of Prairie du Chein Chert. One projectile point each was found at 21DK114, 21DK134, and 21DK135. 21DK114 is located in the central moraine area of the county. Here a Grand Meadow Chert, Late Archaic Turin-style point was found on the surface (Figure 7.39, left). Grand Meadow Chert is not locally available in Dakota County, but can be obtained in southern Minnesota. 21DK134 and 21DK135 are adjacent sites located on both sides of a creek leading to the Cannon River. Projectile points found on these sites are both Terminal (Late) Woodland Koster or Mills style (Figure 7.39, center and right). One is Burlington chert and the other stone material is not known. Burlington Chert is not locally available in Dakota County, having to have been imported from southern Iowa or northern Missouri. Both of non-local materials (Grand Meadow and Burlington cherts) represented in the projectile point collection are relatively common in other collections from Dakota County, especially those from the Spring Lake area, as these materials were traded and dispersed widely.
Figure 7.38. Diagnostic projectile points from the Hoff site (21DK113) on Chub Lake.

Figure 7.39. Left, projectile point from 21DK114. Center and Right, projectile points from 21DK134 and 21DK135.
A little over 70% of the lithic artifacts found during the survey are made of Prairie du Chien Chert, a material available from both primary (outcrops and lag deposits) and secondary (till and outwash) sources within Dakota County. Possible primary sources of Prairie du Chien Chert within the county occur sporadically across the southern portion. Along the northern and eastern borders of the county, around the Minnesota and Mississippi River Valleys, possible primary sources of Prairie du Chien Chert more frequently. Of the 31 sites visited, 18 are associated with lithic assemblages comprised of at least 50% Prairie du Chien Chert by artifact count. In terms of overall ubiquity, at least one Prairie du Chien Chert artifact was found at 22 of the 31 sites investigated. About 64% of all Prairie du Chien Chert artifacts found contain oolites and are identified with the Shakopee Formation, compared to the about 32% that are identified with the Oneota Formation. Issues with the distinction between Oneota and Shakopee formation materials in Minnesota exist (Morrow et al 2015:249-250), however, and may not relate to differences in source.

Amounting to a little less than 20% of the lithics, 99 of the artifacts recovered during the survey are made of materials other than Prairie du Chien Chert that are available throughout the county within secondary deposits. The most prevalent of these materials in terms of number of artifacts found are Swan River Chert (31 artifacts), Quartz (23 artifacts), Red River Chert (17 artifacts), and a jasper (11 artifacts). Quartz, occurring at nine sites, is the most ubiquitous, followed by Swan River Chert (eight sites) and Jasper (seven sites). Although only five artifacts made of silicified sandstone, another material available in local secondary deposits, were found, the material occurred at the same number of sites (three) as Red River Chert. Over 80% of the Red River Chert artifacts were found at a single site (21DK113). Other lithic raw materials available in local secondary deposits that were encountered as artifacts include the red-yellow variant of Tongue River Silica (seven artifacts from one site), siltstone (two artifacts from one site), Gun Flint Silica (one artifact), Lake Superior Agate (one artifact), and quartzite (one artifact).

Artifacts made of lithic raw materials that were likely acquired from outside of Dakota County account for about 5% of all lithic artifacts. The lithic raw materials from outside of the county that are present in the lithic assemblages discovered as a part of this survey include Grand Meadow Chert (26 artifacts), Knife River Flint (five artifacts), Galena Chert (three artifacts),
Burlington Chert (one artifact), and Cedar Valley Jasperoid (one artifact). Grand Meadow Chert and Knife River Flint are the most ubiquitous of these materials, occurring at seven sites and four sites respectively. Over 70% of the Grand Meadow Chert artifacts are associated with one site (21DK113), however. All five of the above mentioned lithic raw materials occur in primary deposits to the southeast of Dakota County. The lithic raw materials from the southeast were not restricted to a specific area of the county that was surveyed. The presence of lithic raw materials from primary sources to the southeast does not necessarily mean that people living in Dakota County were focused more to the south than the north in terms of lithic raw material acquisition: the lithic raw materials present at primary sources to the north also exist in secondary sources within the county, and the difference in source is not easily distinguished from artifacts.

Several general patterns are apparent with regards to the Precontact use of lithic raw materials in Dakota County. Throughout time and space, Prairie du Chien Chert is the most widely and intensely used lithic raw material in the county. The widespread and consistent use of Prairie du Chien Chert throughout the county is likely related to the availability of the material (249). For lithic raw materials represented by at least one tool, Prairie du Chien Chert has the lowest tool to unmodified debitage ratio by count (0.05), followed by Red River Chert (0.06) and Swan River Chert (0.07). The lithic raw materials with the highest tool to unmodified debitage ratios by count are siltstone (1.0), jasper (0.22), Grand Meadow Chert (0.18), Tongue River Silica (0.17), and Quartz (0.15). Burlington Chert, Gunflint Silica, and quartzite are represented by one tool each and no unmodified debitage. In terms of weight versus count, quartz accounts for a disproportion percentage of the total weight of all recovered lithic artifacts: while quartz accounts for about 4% of all lithic artifacts by count, the material amounts to around 17% of the total weight of all recovered lithics. The high proportion of quartz by weight is due to three out of the seven cores found being made of quartz and likely relates to the toughness of the material.
<table>
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<tr>
<th>Lithic Raw Material</th>
<th>Weight</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
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</tr>
<tr>
<td>Shakopee PDC</td>
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<td>9</td>
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<tr>
<td>Swan River Chert</td>
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<tr>
<td>Unidentified Material</td>
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</tr>
<tr>
<td>Grand Meadow Chert</td>
<td>52.2</td>
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<tr>
<td>Quartz</td>
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<tr>
<td>Red River Chert</td>
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<tr>
<td>Prairie du Chien Chert</td>
<td>131.9</td>
<td>4</td>
</tr>
<tr>
<td>Jasper</td>
<td>58.8</td>
<td>2</td>
</tr>
<tr>
<td>Tongue River Silica</td>
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</tr>
<tr>
<td>Knife River Flint</td>
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<tr>
<td>Silicified Sandstone</td>
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<tr>
<td>Galena Chert</td>
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<td>Gun Flint Silica</td>
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<td>&lt;1</td>
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<tr>
<td>Cedar Valley Jasperoid</td>
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</tr>
<tr>
<td>Lake Superior Agate</td>
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<td>&lt;1</td>
</tr>
<tr>
<td>Quartzite</td>
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<td>&lt;1</td>
</tr>
</tbody>
</table>

All Lithic Artifacts By Weight (g)

Table 7.32. Raw materials by weight.

<table>
<thead>
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<th>Lithic Raw Material</th>
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<th>%</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Shakopee PDC</td>
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<td>6</td>
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<tr>
<td>Unidentified Material</td>
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<td>Grand Meadow Chert</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>Quartz</td>
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<td>3</td>
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<td>Jasper</td>
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<td>Tongue River Silica</td>
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<td>1</td>
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<tr>
<td>Knife River Flint</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Silicified Sandstone</td>
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<td>1</td>
</tr>
<tr>
<td>Galena Chert</td>
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<td>&lt;1</td>
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<td>Gun Flint Silica</td>
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<tr>
<td>Lake Superior Agate</td>
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<td>&lt;1</td>
</tr>
<tr>
<td>Quartzite</td>
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<td>&lt;1</td>
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All Lithic Artifacts By Count

Table 7.33. Raw materials by count.
**All Artifacts Made Of NonLocal Materials By Count**

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<th>Lithic Raw Material</th>
<th>Count</th>
<th>%</th>
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<tr>
<td>Burlington Chert</td>
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<td>3</td>
</tr>
<tr>
<td>Galena Chert</td>
<td>3</td>
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<tr>
<td>Grand Meadow Chert</td>
<td>26</td>
<td>72</td>
</tr>
<tr>
<td>Cedar Valley Jasperoid</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Knife River Flint</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 7.34. Non-local materials.

**Formal Tools (Scrapers, Projectile Points, And Drill) By Count**

<table>
<thead>
<tr>
<th>Lithic Raw Material</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
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<td>100</td>
</tr>
<tr>
<td>Oneota PDC</td>
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<tr>
<td>Shakopee PDC</td>
<td>3</td>
<td>25</td>
</tr>
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<td>Burlington Chert</td>
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<td>Grand Meadow Chert</td>
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<td>Quartzite</td>
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<td>8</td>
</tr>
<tr>
<td>Red River Chert</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 7.35. Tools by material.

*Ceramic artifacts.*

Very few ceramic artifacts were found during field survey. One thin sand-tempered vessel fragment with a smooth surface was found on the surface at 21DK114 (Figure 7.40). Although this fragment does not fit any clear classification, the thin profile, smooth surface and lack of shell-tempering suggests either a Plains Village or an early Silvernale affiliation. Two thin, grit-tempered body sherds were found in shovel tests at 21DK128. Both sherds are typical of the Terminal (Late) Woodland, but are not assignable to a type or other more narrow classification.
GIS Evaluation

Evaluation of GIS Site Selection Analyses

A combination of MnModel GIS results and supplemental GIS analyses were used to initially delineate potential site areas. However, as outlined previously in this report, actual survey locations in many cases were constrained based on accessibility and landowner permission, and were not always consistent with the GIS site selection areas. Yet, having an understanding of what GIS metrics and metric values were associated with positive sites could help better predict site locations in future archaeological investigations. As such, this section evaluates the supplemental GIS analyses undertaken in the Dakota Survey and reports general ranges of GIS metrics values that could be used for further identification of potential sites.
Evaluation Methodology

Sites surveyed by the Science Museum of Minnesota as well as those conducted previously were included in the evaluation analyses. GIS point files were created denoting whether a given site survey point was a previously documented vs. Science Museum site. Only positive survey points were included in the analysis. GIS metrics to evaluate were generated for each of these points by first generating a 3-meter radius buffer around each point. Next, these resulting site buffer circles were used as computational “zones” for ArcGIS Zonal Statistics operations on 3-meter resolution rasters of TPI, slope, Drainage Index (DI) and presence or absence of larger hill features (delineated using the inverted DEM analysis described in the GIS methodology section). Zonal Statistics operations resulted in mean values for TPI, slope, Drainage Index, and the presence/absence of larger hill features for each site. Additionally, each site’s Euclidean distance to current water sources (from MN DNR Public Waters Inventory of lakes and rivers) and presumed prehistoric water sources (assumed associated with a Drainage Index greater or equal to 81) was calculated using ArcGIS Near procedure. The resulting data were imported into R statistical software for further analysis.

Since some sites had many associated survey points while others had relatively few, the GIS values were grouped by site ID to reduce the influence of survey-dense sites and possible spatial correlation issues in the analyses. Sites with any missing GIS metrics were omitted from the analysis. The resulting dataset was composed of averaged GIS metrics (TPI, slope, Drainage Index, presence/absence of hill, distance to current water, distance to prehistoric water) for each of 76 sites – 21 Science Museum, 55 previously documented. For this analysis, all positive sites were lumped together regardless of whether a surface or shovel survey was positive. (Note: all previously documented sites were composed of positive site survey points.) GIS metrics per site are presented in Table 7.36.

Evaluation Results

Throughout the course of the survey we surveyed 24 different properties, of those only six were negative. From those 24 different properties, 32 new Precontact archaeological sites were
discovered. Creating points and polygons for the new sites, these were overlaid with the MnModel surface to one meter site preservation layer. Analyzing each site boundary with MnModel there were three different areas that they were in, 14 sites are in the ‘high potential’ areas (43%), three sites are in ‘no potential’ (9%), and 15 sites are in ‘no data’ areas (46%). The negative properties were also analyzed with the MnModel, three properties are in the ‘high potential’, and three are in the ‘no data’ areas. MnModel was not used as an absolute for where we surveyed for this project, it was used more as a guide for helping determine favorable landforms and areas to examine. The results of finding new sites with comparison to MnModel’s site prediction the accuracy is less than 50%. This could be skewed due to landowner permission to survey their property. The results could be different if we had better access throughout the county.

As discussed previously in the report, a Topographic Position Index (TPI) threshold of 0.5 or greater was used as a guideline to identify potential sites. However, in positively surveyed sites (Table 7.36) TPI ranged from -4.6 to 3.9 with a median of 0.2, indicating that lower TPIs (associated with lower, less prominent landscape positions) are often present at sites in Dakota County. Similarly, a relatively flat slope of 2% or lower was used as a guideline for identifying potential sites; however, positive site slopes ranged from 0% to 87% with a median of approximately 4% (90% of sites had slopes of 16% or less). As a result, excluding higher slopes (e.g., greater than 2%) may not be helpful as a criterion for potential site locations. Drainage Index (DI) was used as an indicator of prehistoric water (greater or equal to 81). It was assumed sites would not be located on prehistoric water. Positively surveyed sites generally followed the DI in that locations were not generally located on ground classified as prehistoric water (85% of sites had a DI less than 81). DI values ranged from 21 to 99 at surveyed sites with a median of 41. A Euclidean distance of one kilometer or less from sites to both prehistoric water and current water sources was used as a guideline for potential site locations. Positive sites distances to prehistoric water ranged from 0 to 3,800 meters with a median of 90 meters; distance to current water sources ranged with 0 to 4,500 with a median of about 200 meters. Distances to water sources generally followed the one kilometer threshold with 85% of sites located approximately 500 meters or less from prehistoric water and 650 meters or less from current water sources. Lastly, presence or absence of larger hill features at positively surveyed locations was evaluated.
In general, this approach did not predict site locations with about 10% of positive sites located on such features. Further investigation into this approach may be warranted if it is to be used as a predictor metric in the future.

The numeric ranges and percentiles of the five GIS metrics reported above (i.e., excluding presence/absence of large hill features) could serve as general guidelines for future assessment of higher potential site areas. One approach would be to constrain possible site areas by intersecting the minimum and maximum ranges of all five metrics (or a percentile range, e.g., site values from the 90% of the sites) within GIS to create a site potential map similar conceptually to that of the MnModel.
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Table 7.36. GIS metric values for sites identified during the 2017 survey and previously documented Precontact and Contact sites. When a site had more than one survey point, the reported values are averages of all surveyed points at a given site.
8. SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary and Discussion

One of the objectives of the Statewide Survey effort is to target poorly-known areas of the state, particularly counties with few recorded sites. Dakota County had 106 sites recorded prior to 2017, but many of those were concentrated along the Minnesota and Mississippi Rivers at the north side of the county. Because of that, coupled with the fact that much of the northern third of the county is highly developed by the ever-expanding City of Saint Paul and its suburbs, we decided to focus the majority of our attention on unexamined areas of the southern two-thirds of the county south of the Twin Cities Metro Area. Thirty-two new Precontact sites were recorded during this survey. As is often the case with archaeological survey across broad regions, one must bear in mind that our sample size is small, when considering the size of the county (587 square miles). Also, coverage across the county was unequal, due in part to accessibility issues. The 2017 field survey examined slightly more than 2,200 acres (about 3.5 square miles) by pedestrian or shovel test survey between April and October. Still, coupled with the review of previously identified Precontact and Contact era sites, some conclusions and interpretations can be posed.

The actions of the glaciers of the last ice age and subsequent post-glacial outwash forged much of the Dakota County backdrop. But, today, and for much of the county’s human past, the landscape of the county is defined and dominated by rivers. This riverine landscape can be described in tiers of watersheds moving north to south: Minnesota/Mississippi Rivers, Vermillion River, and Cannon River.

At the north of the county, three large rivers converge – Minnesota, Mississippi, and St. Croix. This convergence has attracted populations to settle and travel through for 10,000 years or more and continues to the present day. The greatest concentration of Precontact sites lines the rivers of this area from the lower Minnesota and Bdote (Minnesota/Mississippi confluence) to the Spring Lake area and the St. Croix/Mississippi confluence. An ancient abandoned channel
connects these two locations, the outlets of which bear many springs and regionally unusual flora. Many of the known habitation sites along this stretch of rivers are multi-component, having been attractive areas for periodic and repeated settlement for centuries. The cultural significance of this region to native peoples cannot be understated. Archaeologically, this fact is, or was, highly visible in 199 recorded burial mounds in the county are located here. Many of those 199 mounds, and surely many others, have been destroyed over the last 150 years. Additionally, Bdote, Oheyawahi (Pilot Knob), and other points in this region are vital places to the Dakota and others historically and continue to be today. We did not survey in this area due to the large number of sites already known. However, we did record two sites based on collections at the Science Museum of Minnesota from work completed but unreported in the 1950s.

Crossing the central portion of the county from its headwaters in adjacent eastern Rice County is the Vermillion River. This small drainage has two main branches, north and south, before converging and draining northward to cut a gorge to the valley of the Mississippi River at Hastings. Topographically, this area is characterized by tall moraines to the south and rolling hills and low-lying plains to the north. At the outset of the survey, a handful of individual lithic flakes and lithic scatters had been recorded along the Vermillion. Our objective was to expand on that work to better understand the use of this little known (archaeologically) river that bisects the county. Property access was a challenge here, as was commonly the case during the survey, and we were unable to examine any properties along the southern branch. Along the northern branch and tributary streams, only diffuse artifact scatters were located, suggesting the Vermillion, while perhaps a draw for resource acquisition, was not a prominent region for longer-term habitation.

It should be noted that the central Dakota County moraine area was the first ice-free region in the county during the Pleistocene. Finds of paleoelephant remains and a fluted point in this area indicates a likelihood of additional Paleoindian materials here, and should be investigated. Additionally, Prairie Du Chein chert abounds on and near the surface in this region.
At the southern border of Dakota County is the Cannon River and its watershed. The Cannon is a much more substantial and navigable river than the Vermillion. The Cannon River near its juncture with the Mississippi River in Goodhue County at Red Wing was the site of dense populations of Native peoples during the Precontact times. The Red Wing area is best known for the many large Late Precontact villages and thousands of burial mounds concentrated on both sides of the Mississippi River near Prairie Island and the head of Lake Pepin (Fleming 2009). Upstream, at least in Dakota County, the archaeology tells a different story. While in the Red Wing area, below the town of Welsh, river terraces along the Cannon commonly hold dense artifact scatters and substantial evidence for habitation, sites upstream into Dakota County consist only of lithic scatters with a few diagnostic artifacts. A noteworthy exception is in the Meisville Ravine area of southeastern Dakota County. Although sites along the ravine also consist of scatters of lithic chipping debris, here the quantities of materials are substantial. It is probable that the sheltered valleys and creek terraces were attractive options for habitation, and this area deserves additional study.

Finally, along the western margin of Dakota County, within both the Vermillion and the Cannon watersheds are several large pothole lakes. The more northerly lakes, such as Lake Marion in Lakeville, have seen substantial residential development. Isolated artifact finds have been reported from the shores of these lakes by landowners. Chub Lake, which drains to the Cannon, has a cluster of sites that range in time from Late Paleoindian/Early Archaic to Woodland or Late Precontact, indicating the long-term use of this and other lakes in the western half of the county. Numerous small lakes exist in the uplands of northern Dakota County within the suburbs of West Saint Paul, Mendota Heights, Sunfish Lake, and Eagan. These areas are highly developed and are outside of our field survey objective. Still, some lakes have preserves around them and probably hold archaeological materials.

To summarize, archaeological resources are distributed across Dakota County, but not in an equal manner. The dominant landscape feature in the region is the Mississippi River and its major tributaries (Minnesota and St. Croix). The valleys of the large rivers at the north of the county are the most archaeologically rich areas of Dakota County, especially for sites that can be
defined as habitation sites. Many of the non-burial sites along these corridors are multi-
component, being locations for settlements that span many millennia. Should a thorough survey
be conducted along these stretches of rivers, especially on level river terraces near springs, we
would expect dozens of new sites to be discovered. To contrast, the Vermillion and the Cannon
river valleys, while offering consistent biological resources, appear to not have been very highly
populated, likely due in part to the proximity of the nearby Mississippi River valley. Diffuse
artifact scatters and isolated finds of projectile points abound along the Vermillion, but
concentrations of artifacts are scarce before it enters the Mississippi Valley. Likewise, habitation
site density along the Cannon increases significantly as one approaches the Mississippi Valley in
Goodhue County. Lloyd Wilford posited the likely scenario that the Cannon was a route of
transportation between the Red Wing area and the Blue Earth Valley, another population center
during the Late Precontact. If that was the case, one would expect periodic habitations at
regularly spaced intervals along the route. These may exist, and we need to sample more
thoroughly along this course beyond Dakota County. The central moraine area of the county
contains scatters of Prairie Du Chein chert and sheltered areas along perennial drainages, but,
like the Vermillion and Cannon valleys in Dakota County, provided little archaeological
evidence beyond occasional artifact scatters and isolated finds. Areas around the larger lakes in
the north and the west, as well as the deeply cut ravines near Miesville, contain densities of
materials and ranges in time to suggest more regular and permanence to the occupations.

People have been living in Dakota County for 10,000 years or more. Every major chronological
period framing Precontact and Contact times in the Midwest is represented in Dakota County.
Like the geographical distribution of sites, archaeological evidence is not evenly distributed
across time. As is often the case, due in part to time, and also to the kinds of material culture that
is typically preserved, the Paleoindian and Archaic periods are poorly represented.
Archaeological remains from these traditions are less visible than those of subsequent times, and
tend to be composed of diagnostic projectile points and associated chipping debris from making
stone tools. During Woodland and Late Precontact times, on the other hand, ceramic sherds are
common. Ceramics are essentially human-made metamorphic rocks and, as such, are resilient to
decomposition. Earthen mounds are another visible form of material culture of the Woodland
and later times, adding to the sites attributed to these periods. Still, many Woodland Period sites
line the Minnesota and Mississippi rivers, with few known outside of these valleys, suggesting a population increase and a direct orientation toward the big rivers. The many burial mounds in these areas attributed to Woodland peoples may also be attributable to later populations as well, as cemeteries are known to have been re-used over generations and honored by all native peoples. Non-mound Late Precontact and native Contact era sites are concentrated at the Bdote and Spring Lake areas only. This follows the pattern of population consolidation and aggregation at large villages near river confluences during this time in the Upper Mississippi Valley in regions such as Red Wing and LaCrosse.

**Recommendations for future research**

Several potential directions for future research come to mind after completing the 2017 survey of Dakota County. Dakota County should figure in research project broader than the county boundaries, but these suggestions focus on only Dakota County and are directions that either we would have liked to pursue, but time restraints or access prohibited them, or that emerged while considering the results of the survey.

- **Paleoindian in Dakota County.** A Paleoindian presence exists in the county, but is little known, as mentioned in several places above. Finds of a fluted point and paleoelephant remains in the central Dakota County moraine area, coupled with the understanding that this was the first ice-free area in the county, suggests that systematic survey in this area would be a fruitful endeavor.

- **Kenneth Klink collection from Spring Lake.** Mr. Klink holds a massive collection made over decades from numerous sites in the Spring Lake area. The collection includes materials not represented in other collections and from sites now destroyed. Mr. Klink has been meticulous about maintaining records of where he recovered the artifacts, so this is an extremely important collection. Should we convince him to allow his collection to be
examined in detail would like to document it within the broader context of excavated collections from the Spring Lake region.

- Survey of the Miesville Ravine area. Miesville Ravine is mostly public property managed by Dakota County Parks. Our sampling resulted in several sites along the Spring Creek in the park. There are many opportunities for survey, and evaluation of existing sites, in the sheltered valleys of this area.

- Pothole lakes of northern and western Dakota county. The northern part of the county was not looked at during this survey due to the many sites already known in the area and the extent of urban development. But, small lakes abound, some with public lands and private preserves abutting them. These areas probably hold additional sites.

- Buried channel and springs across the north of the county. A buried channel crosses the north of Dakota County from Bdote to the Spring Lake area. This area has many springs and unusual (for the region) flora (see Chapter 2). Survey of the channel area may produce deeply buried old sites, and the outlets at springs are likely places for more recent and multi-component occupations.

- Minnesota and Mississippi valleys. There are many sites along these rivers. Any undisturbed areas along the floodplain, terraces, and bluff tops of these valleys are likely to hold archaeological sites. Deeply buried sites are likely to exist here, too. Any ground disturbing activities should proceed cautiously in these areas.

- South fork of the Vermillion and Chub Creek. These two areas were high on our list of areas to survey, but we were not provided access. Chub Creek drains from Chub Lake, where there are several sites, to the Cannon. The head of the south fork of the Vermillion
River was a backwater area in the mid-1850s, so could have been an attractive area for habitation. Survey along these two small channels could alter our interpretations.

- MnModel update. MnModel was consulted at the beginning and evaluated at the end of the 2017 survey. We found that our data are largely compatible with MnModel’s predictions, where the model had data. New sites located where MnModel did not have site data should be incorporated.

- Fine-grain paleoenvironmental study. A comprehensive, fine-grain paleoenvironmental study tied to the archaeology of the county will assist with interpretations and guide future research. Soil core studies from the Kirschner Marsh are an excellent asset. Additional lake and marsh cores from other areas of the county, including Spring Lake/River Lake would complement these.
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