

Exhibit O
Cultural Resources Technical Memorandum
Cardno

February 8, 2021



Technical Memorandum

Cardno, Inc.

3901 Industrial Boulevard

Indianapolis, Indiana
46254
USA

Phone +1 317 388 1982
Fax +1 317 388 1986
www.cardno.com

Date Monday, 8 February 2021

Project No: E320301702

To: Josh Hreha
Yellow Wood Solar Energy LLC

cc: Ryan Rupprecht

From: Ryan Peterson

RE: Yellow Wood Solar LLC – Cultural Resources

Cultural Resources Tasks and Status

In response to a request from Yellow Wood Solar Energy LLC (Yellow Wood), Cardno, Inc. (Cardno) proposes to conduct a Phase I archaeological and historic architecture reconnaissance (Phase I) for the proposed Yellow Wood Solar Energy Project (Project). The Project is located within approximately 3,851 acres of privately-owned lands (Project Area) in Clark and Jefferson Townships, Clinton County, Ohio. The Project consists of the proposed development of an up to 300 megawatt (MW) solar energy project consisting of ground mounted photovoltaic arrays and associated infrastructure.

A cultural resource literature review focused on a 3.2 km (2 mi) radius (study area) around the proposed Project Area. Research identified multiple previous surveys, archaeological sites, cemeteries, National Register of Historic Places (NRHP) listed resources, NRHP Determination of Eligibility resources (NRHP-DOE), and historic structures within the study area.

Prior to completing field investigations, a revised cultural resources work plan (Attachment A) was submitted to the OH-SHPO for review via e-mail on December 21, 2020. The OH-SHPO reviewed the plan and provided written approval via e-mail on January 14, 2021.

To date, approximately 1,083 acres of the project area has been investigated, but completion of fieldwork has been delayed due weather and ground surface visibility. As a result, a Programmatic Agreement (Attachment B) was prepared that provided commitments to complete the investigation in accordance with the approved work plan. The signed and fully executed PA was finalized on February 8, 2021.

In addition, Historic Architecture Reconnaissance Survey, Yellow Wood Solar Energy Center Project, Clark and Jefferson Townships, Clinton County, Ohio was submitted February 5, 2021 and is currently under review by the OH-SHPO.

Attachment A

Yellow Wood Solar Energy Project

Cultural Resource Work Plan

Phase I Cultural Workplan

**Yellow Wood Solar Energy Project,
Clark and Jefferson Townships,
Clinton County, Ohio**

E320301702



Table of Contents

Management Summary.....	1
1 Introduction	2
2 Background Research	4
2.1 Literature Review.....	4
2.1.1 National Historic Landmarks List	4
2.1.2 National Register of Historic Places (NRHP).....	4
2.1.3 Ohio Historic Inventory (OHI).....	4
2.1.4 Ohio Archaeological Inventory (OAI)	5
2.1.5 Ohio Genealogical Society (OGS) Cemetery Data.....	6
2.1.6 Cultural Resource Management (CRM) Reports.....	7
2.1.7 Historic Maps and Atlases	7
2.2 Prehistoric Cultural Setting.....	10
2.2.1 Paleoindian Period (ca. 13,000 – 10,000 B.P.).....	10
2.2.2 Archaic Period (10,000 – 3,500 B.P.)	11
2.2.3 Woodland Period (2,500 – 500 B.P.)	11
2.2.4 Protohistoric Period (500 B.P. – contact).....	13
2.3 Historic Cultural Setting	13
2.3.1 Clinton County.....	14
2.4 Summary and Discussion.....	15
2.5 Archaeology Survey Research Design.....	16
2.5.1 APE for Direct Effects	16
2.5.2 Archaeological Sensitivity Assessment	16
2.5.3 Phase I Archaeological Survey Methodology	21
2.5.4 Historic Resources Survey Research Design.....	22
3 Applicable Regulations and Guidelines.....	29
4 Conclusion and Recommendations	29
5 References Cited.....	31

Tables

Table 1. Previously Recorded Historic Structures within the Study Area	4
Table 2. Previously Recorded Archaeological Sites within the Study Area.....	5
Table 3. Previously Recorded Cemeteries within the 3.2 km (2 mi) Study Area	6
Table 4. Previously Cultural Resources Investigations within the 2 miles of the Project Area.....	7

Figures

Figure 1	Project Location	3
Figure 2	Previously Identified Cultural Resources and Cultural Resources Investigations in the 3.2 km (2 mi) study area	9
Figure 3	Project Area Soils.....	19
Figure 4	Prehistoric and Historic Archaeological Sensitivity Model	20
Figure 5	First Return Model with APE for Indirect Effects.....	24
Figure 6	Bare Earth Model with APE for Indirect Effects	25
Figure 7	Aerial Photo with APE for Indirect Effects.....	26

Appendices

Appendix A	Historic Maps
Appendix B	Previously Recorded Cultural Resources within 8.0 km (5.0 mi) of the Project Area

Management Summary

In response to a request from Yellow Wood Solar Energy, LLC (Yellow Wood), Cardno, Inc. (Cardno) proposes to conduct a Phase I archaeological and historic architecture reconnaissance survey (Phase I) for the proposed Yellow Wood Solar Energy Project (Project). The Project is located in Jefferson and Clark Townships, Clinton County, Ohio. The Project is located on the Martinsburg and Lynchburg, Ohio 7.5' USGS topographic quadrangle maps. The Project consists of the proposed development of an up to 300 megawatt (MW) solar energy project consisting of ground mounted photovoltaic arrays and associated infrastructure. The area that encompasses the Project measures approximately 1,324 hectares (ha) (3,272 acres [ac]) and consists of agricultural fields, fallow grasslands, and remnant woodlots (Project Area).

State and Federal Agencies involved with the Project include the Ohio Power Siting Board (OPSB) and the Ohio State Historic Preservation Office (OH-SHPO).

The Project Area is defined as the vertical and horizontal space (the area within and immediately adjacent to planned construction) that will be impacted by Project activities. This constitutes the Area of Potential Effects (APE) for direct effects.

The APE for Indirect (Visual) Effects represents portions of the Cultural Resources Study Area where there is potential Project visibility, which will be based upon visual impact analysis.

A cultural resources literature review focused on a 3.2 km (2 mi) radius (study area) around the proposed Project Area. Research identified multiple previous surveys, archaeological sites, cemeteries, a National Register of Historic Places (NRHP) listed resource, and historic properties within the study area. None of these resources are within the Project Area and no cultural resources investigations have been conducted within the Project Area.

1 Introduction

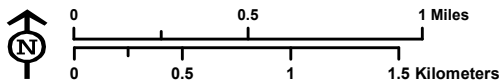
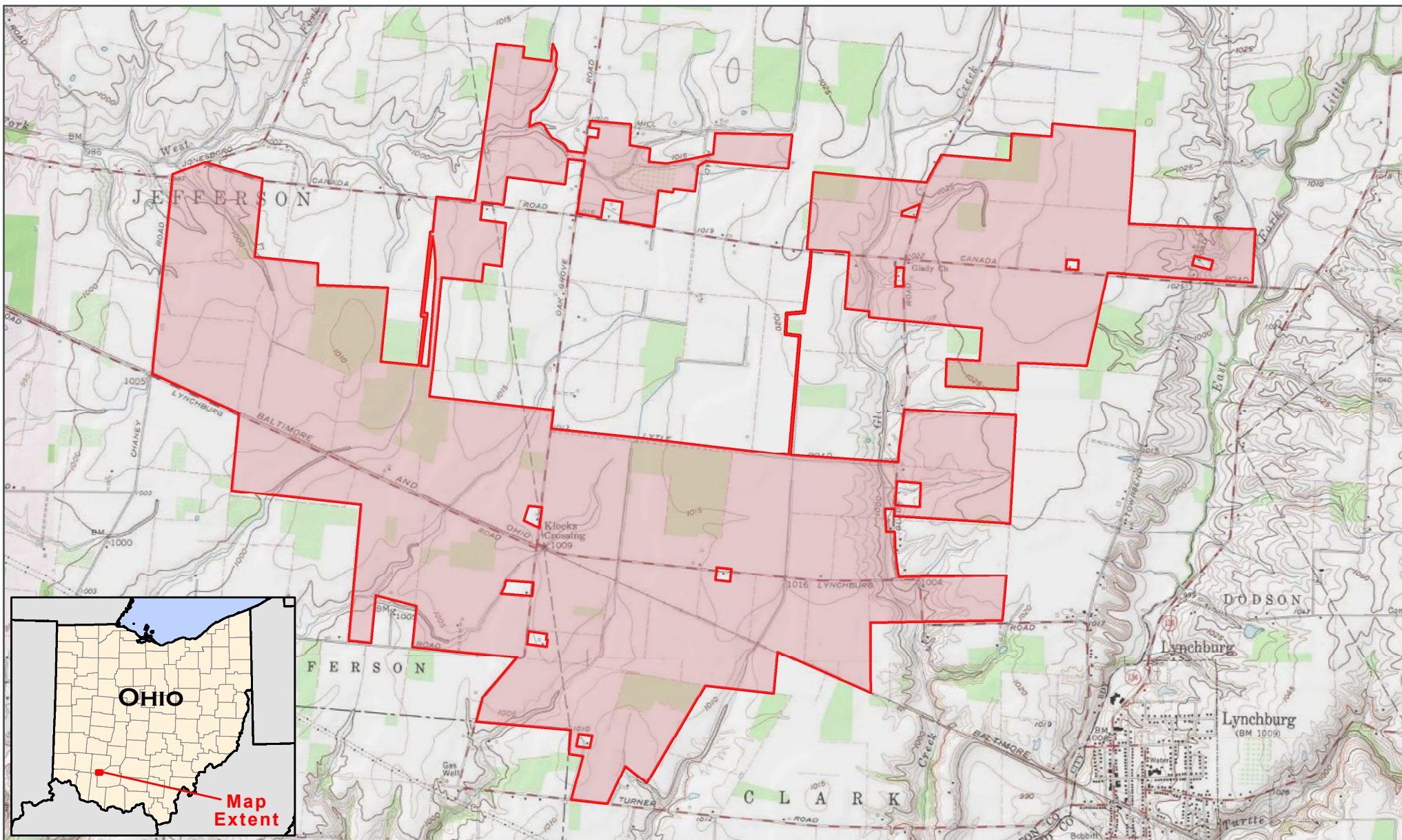
In response to a request from Yellow Wood, Cardno has prepared a Phase I archaeological and historic architecture reconnaissance workplan for the Yellow Wood Solar Energy Project (Project) in Clinton County, Ohio. The Project is located on the Martinsburg and Lynchburg, Ohio United States Geological Survey (USGS) 7.5' quadrangle maps in Clinton County, Ohio (Figure 1).

Based on information provided by Yellow Wood, the Project Area encompasses approximately 1,324 ha (3,272 ac). The Project consists of an up to 300 megawatt (MW) solar energy project. The Project Area includes solar arrays and associated infrastructure such as access roads, electrical collection lines, and a Project switchyard.

The Project Area is defined as the vertical and horizontal space (the area within and immediately adjacent to planned construction) that will be impacted by Project activities. This constitutes the Area of Potential Effects (APE) for direct effects. A cultural resources literature review focused on a 3.2 km (2 mi) buffer (study area) around the proposed Project Area. Research identified 3 previous archaeological surveys, 26 previously identified archaeological sites, 11 cemeteries, and 9 historic properties, 1 of which is listed in the NRHP, within the study area. None of these resources or surveys are located within the Project Area.

Key personnel committed to the Project include Principal Investigator and workplan co-author Ryan Peterson and report co-authors Kaye Grob and Rachel Kennedy. Mr. Kevin Gable created the report graphics.

This report presents the results of the background research and archaeological and architectural workplan models in Section 2.0. Section 3.0 outlines the applicable laws and guidelines. Section 4.0 discusses the conclusions and recommendations. The references cited in this report appear in Section 5.0. Appendix A provides historic maps documenting the use of the Project Area through time and Appendix B lists previously recorded cultural resources within a 5-mi study area.



■ Project Area

7.5' Quadrangles:
Martinsville, OH (1960)
Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Date: 9/29/2020

File Path: C:\share\gis\env\energy\Yellowwood Solar\mxd\Yellowwood Fig1 Project Location - Topo.mxd

Basemap: Copyright© 2013 National Geographic Society, I-cubed

Project Location - USGS Topographic Quad

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project

Yellow Wood Solar Energy, LLC

Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com

GIS Analyst: Kevin Gabel

2 Background Research

The literature review was directed toward identifying previously recorded archaeological sites, historic structures, and other cultural resources. Research was conducted using online data provided by the OH-SHPO in September 2020 (Ohio History Connection 2020). Cardno focused on previously recorded resources within 3.2 km (2 mi) of the Project Area, but also examined the larger region where appropriate. For the literature review, we consulted the following resources:

- National Historic Landmark list;
- National Register of Historic Places (NRHP) list;
- Cultural Resource Management reports;
- County Histories and Atlas Maps;
- Ohio Archaeological Inventory (OAI) files;
- Ohio Genealogical Society (OGS) cemetery files
- *Archaeological Atlas of Ohio* (Mills 1914).

In addition to the cultural resources within the 3.2 km (2 mi) study area, discussed below, Appendix B includes tabular data listing the cultural resources within 8.0 km (5.0) mi of the Project Area.

2.1 Literature Review

Records provided by OH-SHPO revealed that there are 26 previously identified archaeological sites, 11 cemeteries, and 5 historic structures, one of which is listed in the NRHP, located within the 3.2 km (2 mi) study area. None of these resources were recorded within or adjacent to the Project Area. The majority of the resources were recorded southeast of the Project Area within the town of Lynchburg.

2.1.1 National Historic Landmarks List

There are no National Historic Landmarks within the study area.

2.1.2 National Register of Historic Places (NRHP)

There is one NRHP listed resource within the 3.2 km (2 mi) study area (Figure 2). The Lynchburg Covered Bridge (NPS Ref. No. 73001526, OHI HIG0003507) consists of a wooden thru truss covered bridge, located approximately 0.63 mi southeast of the Project Area. The bridge was built circa 1870 and was listed in the NRHP in 1976.

2.1.3 Ohio Historic Inventory (OHI)

A total of five properties have been documented within the 3.2 km (2.0 mi) study area (Table 1; Figure 2). None of the properties are located within the Project Area; however, they may be located within the viewshed for indirect effects.

Table 1. Previously Recorded Historic Structures within the Study Area

Structure Number	Name	Function	Location
CLI0021113	Mitchell House/ Bateman House	Single Dwelling	2467 Wise Rd
HIG0029807	Williams House/ Bobbitt House	Single Dwelling	311 S Main St
CLI0018313	Doak Ralph Farm/	Single Dwelling/ Smokehouse	190 Townsend Rd

Table 1. Previously Recorded Historic Structures within the Study Area

Structure Number	Name	Function	Location
HIG0003507	Lynchburg Covered Bridge	Bridge	W High St over Little Miami River
HIG0028807	Mathias Coffman Log House	Single Dwelling	269 N Main St

2.1.4 Ohio Archaeological Inventory (OAI)

The OAI files indicate a total of 26 archaeological sites within the 3.2 km (2 mi) study area (Table 2). The majority of the previously recorded sites are located southeast of the Project Area near the town of Lynchburg in proximity to the East Fork of the Little Miami River. No archaeological sites have been previously identified within the Project Area. Sites outside the Project Area are not depicted on Project mapping due to the sensitive nature of the archaeological resources.

Table 2. Previously Recorded Archaeological Sites within the Study Area

Site Number	Cultural Affiliation	Description	NRHP Status
33-CN-0041	Unidentified Prehistoric and Historic	Prehistoric Camp, Historic Scatter	Not evaluated
33-CN-0440	Early, Middle, and Late Archaic, Middle Woodland	Prehistoric Scatter	Not evaluated
33-CN-0441	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-CN-0442	Archaic and Historic	Prehistoric Scatter and Historic Isolate	Not evaluated
33-CN-0443	Prehistoric, Middle Woodland/Hopewell	Prehistoric Scatter and Possible Mound	Not evaluated
33-CN-0444	Unidentified Prehistoric	Prehistoric Scatter	Not evaluated
33-CN-0445	Unidentified Prehistoric	Prehistoric Scatter and Historic Isolate	Not Evaluated
33-CN-0471	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-CN-0472	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-HI-0039	Paleolithic and Early Woodland	Prehistoric Scatter	Not evaluated
33-HI-0040	Woodland	Prehistoric Scatter	Not evaluated
33-HI-0041	Unidentified Prehistoric and Historic	Prehistoric Scatter and Historic Isolate	Not evaluated
33-HI-0042	Protohistoric	Prehistoric and Protohistoric Scatter	Not evaluated
33-HI-0320	Unidentified Prehistoric and 19 th to 20 th Century Historic	Prehistoric and Historic Scatter	Not evaluated
33-HI-0321	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-HI-0322	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-HI-0323	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-HI-0324	Late Woodland, Late Prehistoric, and Historic	Prehistoric Scatter and Historic Isolate	Not evaluated

Table 2. Previously Recorded Archaeological Sites within the Study Area

Site Number	Cultural Affiliation	Description	NRHP Status
33-HI-0325	Early Archaic	Prehistoric Scatter	Not evaluated
33-HI-0326	Late Archaic	Prehistoric Isolate	Ineligible
33-HI-0327	Unidentified Prehistoric	Prehistoric Scatter	Not evaluated
33-HI-0328	Historic	Historic Isolate	Ineligible
33-HI-0329	Unidentified Prehistoric	Prehistoric Isolate	Ineligible
33-HI-0330	Unidentified Prehistoric	Prehistoric Scatter	Not evaluated
33-HI-0331	Unidentified Prehistoric	Prehistoric Scatter	Not evaluated
33-HI-0332	Unidentified Prehistoric	Prehistoric Isolate	Ineligible

2.1.5 Ohio Genealogical Society (OGS) Cemetery Data

The OGS files indicate a total of 11 cemeteries within the 3.2 km (2 mi) study area (Table 3; Figure 2). The cemeteries are located outside the Project Area and they will not be directly affected by the proposed Project; however, they may be located within the viewshed for indirect effects.

Table 3. Previously Recorded Cemeteries within the 3.2 km (2 mi) Study Area

OGS Number	Name	Burial Condition	Location
1969	West Chapel	Highly Maintained	0.4 mile northeast of SR 134. On northwest side of West Road. Between West Road and East Fork of Little Miami River
1976	Westboro Friends-Quaker	Highly Maintained	North edge of Westboro. At northeast intersection of Hale's Branch Road and Jonesboro Road
5185	Lynchburg Masonic		In village of Lynchburg. On north side of High Street
5178	Baptist-Connell-Hundley-Masonic-Methodist-Murrell		On north side of village of Lynchburg. East of SR 134
1967	Troutwine	Highly Maintained	Straddles Highland County line. 4 miles southwest of Lynchburg. On north side of CR 29
1171	Alexander		East of SR 251. South of Kernan Road. East side of Aubrey Road
5341	Runk	Endangered	About 0.5 mile south of TR 246A. South side of CR 11A. On farm
5183	I.O.O.F.	Gone	On southeast side of village of Lynchburg. North of abandoned CSX Railroad right-of-way. South of Short Street and CR 11A
5180	Bobbitt-Morrow		On southwest side of village of Lynchburg
1962	Betterton Farm-Walt Betterton	Low Maintenance	1.5 miles south of SR 28. 250 feet west of Farmer's Road
5184	Lutheran-Troutwine/Trautwein		Straddles Clinton County line. Near intersection with CR 65A. North side of CR 29

2.1.6 Cultural Resource Management (CRM) Reports

Records on file at OH-SHPO indicate that six previous cultural resource investigations have been conducted within 3.2 km (2 mi) of the Project Area (Addington 1978, Addington and Davidson 1978, Beamer 1992, Manson 2007, Meyer 2013, and Weller 2018) (Figure 2). None of these investigations are located within the current Project Area. Reporting associated with Addington and Davidson (1978) and Manson (2007) was never filed at OH-SHPO; however, preliminary mapping was available for each of these projects.

Table 4. Previously Cultural Resources Investigations within the 2 miles of the Project Area

Report Number	Year	Author	Title	Distance from Project Area
None	1978	Addington, James E. and Paul Davidson	Preliminary Archaeology Survey Report for the Lynchburg Sanitary Sewer System	Southeast of Project Area in Lynchburg
13105	1978	Addington, James E.	Phase II Archaeological Survey for the Lynchburg Sanitary Sewer System, Highland County, Ohio	Southeast of Project Area in Lynchburg
12807	1992	Beamer, Herb	Literature Review and Reconnaissance Survey: County Road 29 Bridge Replacement, Clark Township, Clinton County, Ohio	1.09 mi south southeast
None	2007	Manson, J.L.	A Phase I Literature Review and Archaeological Survey of Approximately 123 acres for a Proposed Ecological Mitigation Bank Project In Clark Township in Clinton County and Dodson Township in Highland County, Ohio	Approximately 0.92 mi southeast of Project Area, mapping not precise
19246	2013	Meyer, Elaine	Phase I Archaeological Survey for the Westboro CLTN-124 Wireless Cellular Tower in Jefferson Township, Clinton County, Ohio	1.91 mi northwest
20783	2018	Weller, Ryan J.	Phase I Archaeological Investigations for the Hillsboro-Hutchings Tap 138kV Rebuild Project in Highland, Clinton, Warren, and Butler County, Ohio	0.2 mi south of Project Area

2.1.7 Historic Maps and Atlases

Five historic maps showing the Project Area were consulted to gain an understanding of land use within the Project Area over time. (Walling 1859; Lake, Griffing, and Stevenson 1876; Sutton and Company 1903; and USGS 1960a and 1960b) (Appendix A).

Referenced mapping from 1859 depicts individual landowners and residential structures. Houses are located within the Project Area on property owned by C. Wallis, S. Moore, Charles A. Davis, C. Weaver, M. Segline, M. Weisflech, A. Washburn, W. Hamrick, J. Sanderson, and D. Strech (sp.?). In addition, a sawmill is mapped on the property of E. Vance. The property of C. Wallis is also labelled as “Union Shakers” possibly indicating that the religious organization held partial title of the property. A railroad travels through the Project Area (Walling 1859; Appendix A).

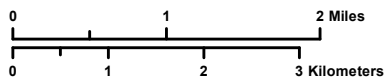
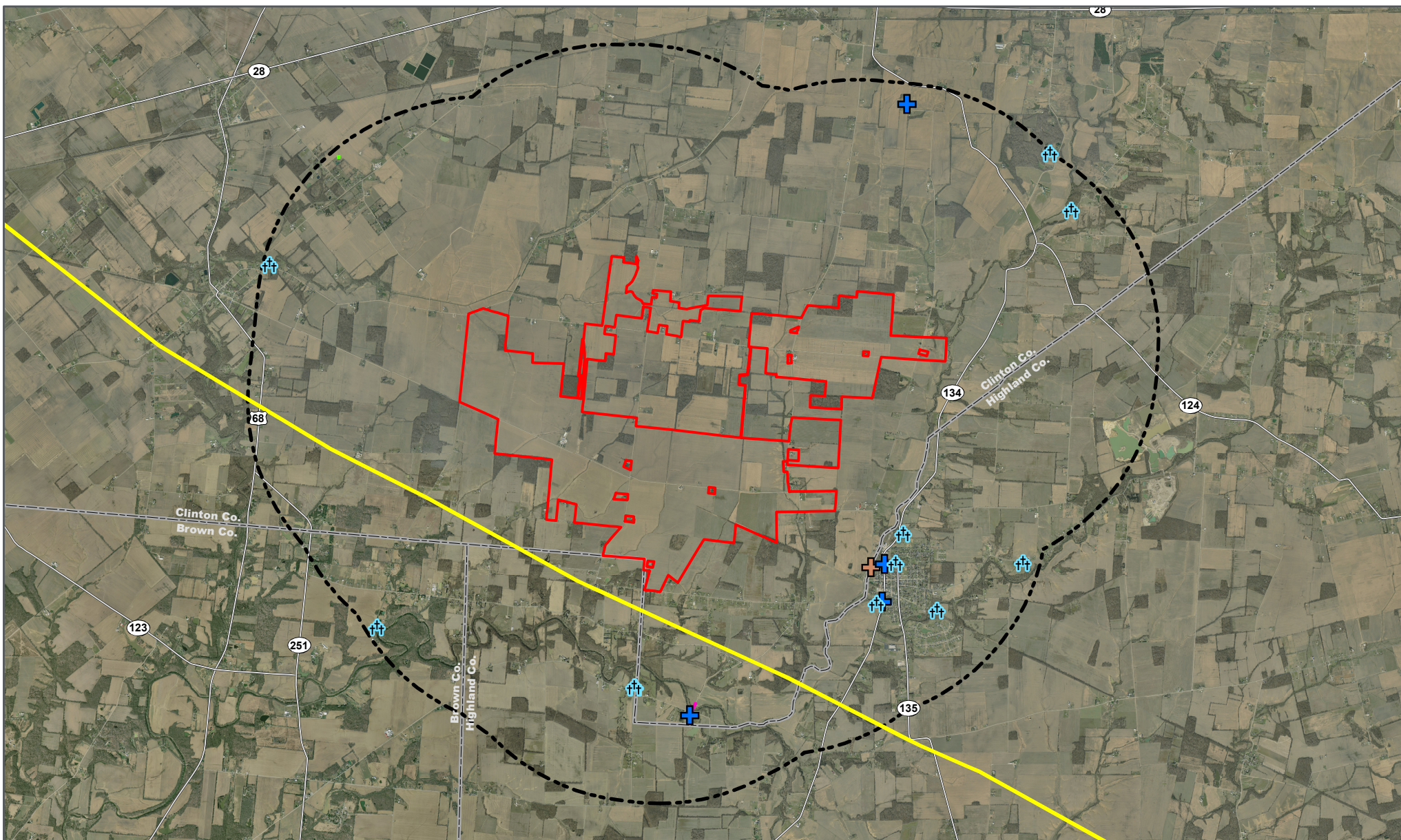
The 1876 map of Clinton County, Ohio depicts individual homes and land ownership. Multiple structures are located in the Project Area on land owned by W. Scott, J. Hixon, L. Hagg, J.J. Terrell, W.L. Dudley, J. Melson, C. Wallace, H. Barker, H. Stiritz, F. Cashatt, H. Crampton, D. Murphy, and C. Lippott, amongst others. School No. 4 is depicted within the Project Area, as well as the M&G Hillsboro Branch Railroad (Lake, Griffing, and Stevenson 1876) (Appendix A).

The 1903 mapping does not depict landowners; however, it depicts individual land ownership. A railroad and multiple roads traverse the Project Area. A school is also marked in the location of School No. 4 from the 1876 mapping (Sutton and Company 1903) (Appendix A).

The 1960 Lynchburg and Martinsburg 7.5' topographic maps depict individual structures and features. At least ten structures are depicted within the Project Area. The Baltimore and Ohio Railroad travels through the Project Area and a location labelled "Klocks Crossing" is mapped along the railroad (USGS 1960 a and 1960b; Appendix A). Klocks Crossing is described as "whistle stop" along the railroad. No structures are mapped at the location on the mapping, nor are any structures currently located at this location.

The mapped structure, sawmill, and school locations represent an increased probability of historic archaeological sites as well as extant historic structural resources at these locations, although the maps are not at a scale that would represent precise site locations.

In addition to the historic atlas maps, one early archaeological map was also consulted (Mills 1914). Similar to other historic archaeological maps of its time, this map depicts archaeological resources at a county-wide scale which provides an overview of sites across the county, but limits the locational accuracy of these features. The *Archaeological Atlas of Ohio*, Mills (1914) lists a total of 112 prehistoric sites in Clinton County including 93 mounds, 10 enclosures, 1 village site, and 8 burial sites. One mound is mapped in Jefferson Township and four mounds and one enclosure are mapped within Clark Township. None of these resources are mapped within or adjacent to the Project Area.



Archaeological sites outside the Project Area are not depicted due to the sensitive nature of the resources.

- Cemetery
- Historic Structure
- NRHP Listed Historic Structure

- Beamer Survey (1992)
- Meyer Survey (2013)
- Weller Survey (2018)

- Project Area
- 2-mile Buffer
- Highway/Freeway
- County Boundary

7.5' Quadrangles:
Martinsville, OH (1960)
Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

File Path: C:\share\gis\in\energy\Yellowwood Solar\mxd\Yellowwood Fig2 Cultural Resources within 2-mile buffer.mxd

Previously Identified Cultural Resources and Cultural Resources Investigations with a 2-mile Study Area

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project

Yellow Wood Solar Energy, LLC

Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com

2.2 Prehistoric Cultural Setting

This section will outline the prehistoric cultural setting of southwestern Ohio. The goal of this discussion is to present a context through which to examine the prehistory of the region in and around the Project Area. For the purposes of this report, prehistory is defined as the time beginning with the initial human occupation of the region and continuing up to the period of European contact.

The prehistoric occupation of Ohio is generally divided into four broad periods, Paleoindian, Archaic, Woodland, and Mississippian. The Paleoindian period encompasses the cultural remains of the earliest recorded occupations of the region, after about 13,000 B. P., during early postglacial times. The Archaic is identified by archaeologists as the period where more localized seasonal settlement and subsistence patterns replaced the broad seasonal migration patterns of the Paleoindian period. Broad exchange patterns, the innovation of ceramic technology, the emergence of cultigens, and an increasing shift toward sedentism generally identify the transition to the Woodland time period. The Mississippian period is marked by continued population growth, large villages, and subsurface storage pits resulting from an increased reliance on maize agriculture. The following sections will outline each of these broad time periods, including temporal divisions within each.

Clinton County lies within the dividing ridge between the Scioto River and Little Miami River drainages and water from the county flows into both of these rivers (Beers 1882). This division is located at the Reesville Moraine, in the northeast quarter of the county (USDA/SCS 2005). Several creeks and tributaries travel through the Project Area, including Glady Creek, tributaries of West Fork, and multiple tributaries of the East Fork of the Little Miami River. The East Fork of the Little Miami River is located adjacent to the easternmost boundary of the Project Area. Although there are no major rivers within Clinton County, prehistoric populations would have utilized the creeks and Little Miami River for resources.

2.2.1 Paleoindian Period (ca. 13,000 – 10,000 B.P.)

Paleoindians consisted of nomadic groups comprised of small kin-based bands that primarily practiced a foraging subsistence strategy. The term “Paleoindian” refers broadly to a pattern of nomadic mobility and foraging rather than to a discrete group of people. Research suggests that these Paleoindian groups repetitively moved within a geographic range to intercept large herd animals during their migratory cycles (Gramly 1988; Stothers 1996). Over time, the focus likely shifted from large-scale expeditions to more regular, smaller-scale hunting, along with a decrease in the overall size of territory exploited by these groups.

Paleoindian sites are recognized in the archaeological record by the presence of narrow, lance-shaped spear points. These points may or may not have a flute (a large flat flake) removed from each side of the point. Early Paleoindian projectile points are often made of high-quality materials, usually from a widely dispersed area, which suggests a high level of mobility (Speth et al. 2010). Later Paleoindian points are more often made from local chert types, which may reflect a reduction in this mobility.

Paleoindian groups occupied the southern Great Lakes region circa 11,500 to 10,800 B.P. (Waters and Stafford 2007). Fluted projectile points have been found in the Great Lakes region and generally date from 11,000 to 10,000 B.P. In Ohio, Paleoindians lived in small groups and moved south to west across the state, advancing northward as the Wisconsin glacier retreated (Gordon 1996). Paleoindians hunted megafauna common to the area such as mastodon, caribou, giant beaver, musk-ox, and ground sloth (Gordon 1996). Due to their small group size and mobility, few sites have been studied and many of the artifact finds are isolates. A Paleoindian antler spear point uncovered in Hancock County dated to 11,000 B.P. is among the oldest artifacts discovered in Ohio (Gordon 1996). The retreat of the Wisconsin glacier and the changing ecology to a warmer and dryer climate ended the Paleoindian culture (Gordon 1996).

2.2.2 Archaic Period (10,000 – 3,500 B.P.)

The Early Archaic (10,000 – 8,000 B.P.) time period is often identified in the archaeological record by the transition from large, lanceolate bifaces of Paleoindian assemblages, to smaller, notched and bifurcated bifaces (Stothers 1996; Stothers et al. 2001). Groundstone tools and other lithic tools such as graters, scrapers, and notched knives are also observed in the Early Archaic. Local cherts continue to be utilized as a resource. Early Archaic subsistence strategies continued the focus on large migrating Pleistocene herd animals, but Early Archaic groups also began to exploit more local environmental resources, including smaller game animals. Early Archaic artifacts tend to display more diversity in style and function, which also may reflect diversity in resource exploitation.

Archaeologists observe minimal change between the Early and Middle Archaic periods. The Middle Archaic period (8,000 – 5,000 B.P.) is reflected by changes in projectile point and blade types, but these variations are more prominent in southern portions of the U.S., and are not evident in central Ohio (Vickery and Litfin 1992). The Middle Archaic may be described as a transitional period between the Early and Late Archaic periods.

During the Late Archaic (6,000 – 3,500 B.P.) there is a period with increased focus on regional mobility patterns, as well as an increase in resource diversity. Late Archaic groups incorporated plants as a larger part of their subsistence strategy. Late Archaic sites often represent repeated occupation over a long period of time, which suggests a regular, more localized pattern of movement across the landscape. Projectile points and other lithic tools also show increases in variation. Small side-notched and corner-notched points and side and end scrapers appear frequently in Late Archaic assemblages. Groundstone tools are also increasingly evident. Pottery begins to appear in the transition between the Late Archaic and Early Woodland periods.

2.2.3 Woodland Period (2,500 – 500 B.P.)

Populations in the Woodland Period tended to be broad spectrum hunter-gatherers, living in semi-sedentary occupations made up of small groups, likely based on kinship. These occupations were typically located around riverine environments and organized around communal burials. Innovations such as pottery, horticulture, and the bow and arrow occur during the Woodland time period.

2.2.3.1 Adena Culture (800 B.C. to A.D. 1)

The Early Woodland period (2,500 – 1,900 B.P.) marks the transition from the nomadic Archaic subsistence strategy to a more localized, semi-sedentary subsistence strategy. The Adena culture is representative of the Early Woodland period in southern Ohio. The Adena culture is named after the estate of Ohio Governor Thomas Worthington, which was located approximately 1.5 miles northwest of Chillicothe, in which a 26 foot tall burial mound was present. This mound site exemplified all of the significant features of the culture, and so became the namesake (OHC n.d.a).

Adena people continued the hunter gathering practices of earlier periods, but also began to domesticate crops, such as squash, sunflower, sumpweed, maygrass, and tobacco (OHC n.d.a). Societies lived in small villages; however, frequently moved to follow animal herds and other seasonally available food resources (OHC n.d.a). Cultural material associated with the Adena include stemmed projectile points with weak shoulders, thick-walled ceramic vessels with flat bottoms and lug handles, drills, scrapers, and a variety of ornamental and ceremonial materials (Tuck 1978). The earliest earthworks and burial mounds in central and southern Ohio are attributed to the Adena. These earthworks were often constructed over another structure, indicated by the presence of postmold features. Burials are often associated with a variety of exotic materials, such as cut mica, copper, beads, gorgets, and shell. It is important to note, however, that “Adena,” like “Hopewell” in the Middle Woodland, refers more to a pattern of mortuary practices and exchange of goods, rather than to a discrete group of people.

2.2.3.2 Hopewell Culture (200 B.C. to 400 A.D.)

While the Early Woodland/Adena lifestyle persisted into the Middle Woodland period in some peripheral areas, archaeologists generally describe the Middle Woodland period in Ohio (1,900 – 1,400 B.P.) as the period associated with the development of the Hopewell culture. The Hopewell culture seems to have developed simultaneously across the Midwest, in places such as Nebraska to Mississippi, Indiana to Minnesota, and from Virginia to Ohio, which is considered the epicenter of the Hopewell culture (OHC n.d.b). The Hopewell influences were strongest in the southern part of the state, specifically in the Ohio, Scioto, and Miami valleys. Residential patterns of the Hopewell culture differed from the previous Adena culture, as people tended to reside in one location, normally near major waterways, until the resources were exhausted in that area, before moving to a new location (OHC n.d.b).

The subsistence strategy was organized around a seasonal pattern of resource procurement and an increasing reliance on horticulture. The Middle Woodland period saw a continued increase in population and social organization, reflected in the numerous earthworks constructed in this period. These earthworks, often constructed in geometric figures, may have represented ceremonial centers, which suggests that populations may have been organized at some larger scale. The prehistoric trade of exotic materials also reached a high during the Middle Woodland as populations within the “Hopewell Interaction Sphere” traded materials from as far away as the Upper Peninsula of Michigan (copper), the Gulf Coast (shell and shark teeth), and the Carolinas (mica). It is likely that the Hopewell Interaction Sphere represents a broad but loosely organized pattern of exchange rather than a well-defined system of trade (Pacheco 1996). Around 400 A.D., the Hopewell culture began to decline, though the reason for this is unknown (OHC n.d.b). A prominent theory is due to a cultural collapse, as societies then shifted to larger, permanent, communities, which were more isolated from each other (OHC n.d.b).

2.2.3.3 Late Woodland Societies

A significant reduction in the extensive, extra-regional trade of exotic goods and materials marks the Late Woodland period (1,400 – 1,000 B.P.). The construction of large ceremonial earthworks also ended in this period, as mortuary practices shifted to the interment of burials into existing, older mounds or small stone mounds. Isolated, individual burials are also observed. Late Woodland villages are located well to the north, east, and south of the Hopewell core (Seeman and Dancey 2000).

This period also is characterized by an increasingly sedentary residential pattern of large nucleated villages supported by a growing reliance on maize and other cultigens as a substantial part of the Late Woodland diet. Palisades or ditches were sometimes constructed around these villages. This need for defensive structures suggests an increasing instability at times. These villages, however, appear to be relatively brief occupations, generally lacking overlapping features (Seeman and Dancey 2000). Resource diversity also continued to increase, although reliance on aquatic resources was less pronounced in southern Ohio than in other areas of the Midwest. Some representative Late Woodland artifacts include small triangular points, scrapers, mortars and pestles, celts, and hoes. A distinct technological innovation of the period was the use of earthen ovens for steaming or baking food (Seeman and Dancey 2000). The Late Woodland is also represented by well-developed lithic, bone, fiber, and ceramic industries. Pottery in the early portion of the Late Woodland is generally thin, vertically cordmarked with angular shoulders (Newtown shoulder), while Middle Woodland containers typically have thicker walls and curved, indistinct shoulders (Seeman and Dancey 2000). The bow and arrow also became prevalent, though likely in the later portion of the Late Woodland.

The Cole Complex has been occasionally been described as a Late Woodland society, which gave way to the Fort Ancient culture (Dancey and Seeman 2005; Lentz 2003). Originally, the Cole Complex was defined by Baby and Potter (1965:5-6) as “a post-Hopewellian manifestation of a basic Woodland or Scioto tradition present in the Ohio Valley from Late Adena to Fort Ancient times.” Study of several sites within Ohio revealed that the Cole Complex was defined by distinctive cord-marked and plain pottery styles. The cord-marked vessels exhibited full cord-marking with rounded shoulders, an inverted and

collared rim, and four castellations, which were evenly spaced around the rim (Dancey and Seeman 2005). The Cole Complex communities were noted to not have participated in elaborate Hopewellian ceremonialism, but practiced a more simple existence. They did not bury their dead in mounds; rather in glacial kames and escarpments, grave goods were plain, and community enclosures were small when compared to the large villages of the Hopewell and later Fort Ancient peoples.

Recently; however, criticism of the definition of Cole being a “complex” have surfaced (Dancey and Seeman 2005). It has been said that sites exhibiting Cole Complex artifacts cover too long of a timespan (1000 years), the excavated deposits have yielded conflicting dates, and non-ceramic artifacts are found to be more similar to those excavated in northern areas, such as the Great Lakes region, rather than the Ohio Valley. Instead, it has been suggested that the Cole Complex be placed within ceramic manufacture through the Woodland and Late Prehistoric periods, rather than a specifically defined complex or culture (Dancey and Seeman 2005).

2.2.4 Protohistoric Period (500 B.P. – contact)

The Protohistoric period is at the terminus of the Late Woodland prehistoric time period and just before the earliest arrival of Europeans in northern Ohio. At this time, Native Americans are receiving European material indirectly from intermediate sources, but have never actually had physical contact with Europeans. The European material appears to be coming from French sources in the St. Lawrence River region and/or English sources in the Chesapeake Bay region (Pendergast 1985, 1990; Stothers et al. 1994). Some researchers have also suggested a third, as of yet unproven, Spanish source from the American southeast (Drooker 1997; Stothers and Abel 1991).

In southern Ohio, the Protohistoric period is dominated by the Fort Ancient peoples. This culture has been associated with Mississippian cultures to the west and throughout the southeastern United States; however, Mississippian groups are noted to be larger with more complex practices (Fort Ancient 2013). It is currently unclear whether the Fort Ancient peoples originated from the Mississippian groups, or if they are their own separate culture, though the Fort Ancient peoples are considered descendants of Late Woodland peoples (Fort Ancient 2013; USDA/SCS 2003).

Fort Ancient groups relied heavily on maize agriculture. Their villages were densely occupied, being home to approximately 100-500 people (Fort Ancient 2013). The villages would vary in population throughout the year, as groups would leave villages in the winter to live in hunting camps. Village structures included a pattern of concentric circles with a central plaza, defined boundaries for cemeteries, and stockades. Residences were usually rectangular in shape. In addition to the villages, Fort Ancient peoples are known for their animal effigy mounds, specifically Alligator Mound in Granville and Serpent Mount in Peebles, Ohio (Fort Ancient 2013).

The Fort Ancient peoples abruptly disappear from the archaeological record around 1650 A.D. Potential theories include the decimation of the population from European explorers or they were driven out by warring contemporary groups, though there is no hard evidence for either theory (Fort Ancient 2013).

By the mid-1700s, European explorers had begun to make contact with the tribes occupying the Ohio River Valley, which included the Shawnee, Miami, and Delaware, among others (Fort Ancient 2013). While none of these groups have been able to be definitively linked to the Fort Ancient culture, the Shawnee is often described as the most likely historical descendent. These Native American groups were spread out across the United States at the time of European contact, while the Shawnee were specifically encountered in Maryland and Pennsylvania prior to European contact in Ohio (Fort Ancient 2013).

2.3 Historic Cultural Setting

The establishment of Detroit (1701) as a major center for fur trade and as the seat of European political and military power in the region led to an increase of non-Native people and a resurgence of Native Americans in the Ohio area throughout the eighteenth century (Nester 2000). By the mid-eighteenth

century, British and French traders began to rival each other in the Ohio region. Following the French and Indian War (1756-1763), the French relinquished control of all Ohio lands to the British (Nester 2000). In the years following the treaty that ended the war, British colonists were often engaged in skirmishes and battles with the Native Americans, who were disgruntled with the postwar policies of the British. In an attempt to maintain peaceful relations with the tribes that participated as allies to the French during the war, Great Britain passed the Royal Proclamation of 1763, which restricted settlement west of the Appalachian Mountains (OHC 2015a). The proclamation only served to anger the colonists, who continued to move west and settle. The British victory in the French and Indian War and the events that followed shortly thereafter sparked the upheaval that would lead to the American Revolution against Great Britain (OHC 2015a). After the Revolutionary War (1775–1783), most of the Native American territory was ceded to the United States through a series of treaties, including the Treaty of Fort McIntosh (Pennsylvania) in 1785 and the Treaty of Greenville (Ohio) in 1795 (OHC 2015b).

Multiple states laid claim to the territory that is now Ohio, including New York, Connecticut, and Virginia; the latter laid claim to all territory northwest of the Ohio River (Bennett 1902). The Virginia Military District wanted these lands reserved for the purpose of rewarding honorably discharged Revolutionary soldiers, in case the territory reserved by the state south of the Ohio River was insufficient for the number of soldiers who fought for the state. Virginia was found to require the land, which were distributed by the Old Dominion. These lands lay between the Scioto and Little Miami rivers, from which were organized the following counties: Adams, Brown, Clinton, Clermont, Highland, Fayette, Madison, and Union counties. In addition, portions of multiple counties, including Ross, were formed from this territory (Bennett 1902).

2.3.1 Clinton County

Clinton County was formed in February 1810 and named after George Clinton, the Vice President of the United States at the time (OHC n.d.c). The first settlers in the region arrived circa 1797 and were mostly from Kentucky, Pennsylvania, and North Carolina (USDA/SCS 2005). Quakers were prevalent in the early settlers of the county and played a large part in the Underground Railroad in the 1830s through 1860s (OHC n.d.c). Aaron Betts and Christopher Hiatt were known abolitionists within Clark Township (Beers 1882). Aaron and Ann Betts graves, the Christopher Betts Homestead, and the Martinsville Friends Meeting House are all located north of the Project Area in the town of Martinsville, and are listed as locations associated with Underground Railroad Conductors within Clinton County. Christopher Hiatt's farm is located west of Martinsburg in Clinton County (CCHC 2020).

The first permanent settlers within Clinton County consisted of Morgan VanMeter in Green Township, Amos Wilson of Wilson Township, and David Sewell of Vernon Township. These settlers are reported to have arrived in Clinton County in 1799 (Beers 1882). The earliest settler of Clark Township was Thomas Johns who settled three miles south of Martinsville on the East Fork of the Little Miami River, circa 1800 (Beers 1892). The first reported settler of Jefferson Township was Samuel Jackson circa 1812 (Beers 1882). The first railroad within the county was completed in 1853 and travelled from Cincinnati to Wilmington and was extended to other locations such as Washington in Fayette County, and Lancaster in Hocking County in the following years (Beers 1882).

The County Seat of Clinton County was established in 1810 in Clinton, which was soon renamed Wilmington (Beers 1882). In 1840, the population of Clark Township was 1,297 and by 1850, it was 1,654 (Beers 1882). In 1840, the population of Jefferson Township was 474, and by 1850, it was 810 (Beers 1882). Wilmington College was established by the Quakers within the county in 1870 and remains extant, open to people of all religious affiliations. Today, Clinton County remains largely rural with Wilmington being the largest town, followed by Blanchester (OHC 2015c). As of 2010, approximately 42,040 people resided in Clinton County. Caesar Creek State Park and Cowan Lake State Park are popular activity locations.

2.4 Summary and Discussion

This section presented the results of the cultural resources records review. The records check indicates that 26 previously identified archaeological sites, 11 cemeteries, and 5 historic structures, one of which is listed in the NRHP, have been recorded within the 3.2 km (2 mi) study area. None of these resources are located within or adjacent to the Project Area. In addition, there have been no previous cultural resources investigations within the Project Area and three archaeological surveys within the study area. The cultural context of the region suggests that additional unidentified cultural resources persist in this area.

These unidentified resources may represent a variety of time periods ranging from prehistoric Paleoindian period sites through protohistoric Native American sites. These sites may represent a variety of site types, including isolated artifacts to larger occupational sites. Terrace remnants and topographical rises, particularly in association with drainages or other water sources, are local landforms likely to contain archaeological deposits.

The historic context of the region suggests that unidentified historic archaeological sites may represent a variety of activities ranging from historic dump and debris discard areas to residential sites, a sawmill site, and a site associated with a historically mapped school. Historic sites also tend to occur in conjunction with transportation features such as drainages, railroads, and roads. Additionally these types of transportation features can be considered cultural resources. Cemeteries are also common historic resources in rural areas.

2.5 Archaeology Survey Research Design

2.5.1 APE for Direct Effects

The Project Area is defined as the vertical and horizontal space (the area within and immediately adjacent to planned construction) that will be impacted by Project activities. The APE for direct effects is defined as the 1,324 ha (3,272 ac) where proposed ground disturbing Project activities may occur. The solar panels will be mounted on racks with a relatively small area of ground disturbance. Additional ground disturbance will occur during installation and construction of the Project's electrical collection lines, access roads, and other Project infrastructure.

2.5.2 Archaeological Sensitivity Assessment

The vast majority (>95 percent) of the Project Area is located in active agricultural fields. The model developed by Cardno to determine areas to be subject to Phase I archaeological reconnaissance survey is outlined below.

2.5.2.1 *Precontact and Historic Archaeological Sensitivity*

The Yellow Wood Project Area is situated in portion of Clinton County that was occupied throughout prehistory. Prior to initiating the current investigation, only 30 archaeological sites with prehistoric components have been documented within a 5-mile radius of the Project Area. The Project Area lies within the Illinoian Till Plain physiographic province. The Illinoian Till Plain is described as having "rolling ground moraine of older till, generally lacking ice-constructional features such as moraines, kames, and eskers" (Brockman 1998).

The Project Area is located within the Little Miami River watershed. Clinton County lies within the dividing ridge between the Scioto River and Little Miami River drainages and water from the county flows into both of these rivers (Beers 1882). This division is located at the Reesville Moraine, in the northeast quarter of the county (USDA/SCS 2005).

Several factors were considered in the development of a plan for testing the Project Area. Distance to water, soil type, and topography were considered in developing a model that could be used to identify areas with a higher likelihood for prehistoric sites. Distance to streams was first considered in the development of a plan. Buffers with distances ranging from 500- 1,000 feet around streams and rivers were generated. Several creeks and tributaries travel through the Project Area, including Gladys Creek, tributaries of West Fork, and multiple tributaries of the East Fork of the Little Miami River. The East Fork of the Little Miami River is located adjacent to the easternmost boundary of the Project Area. Although there are no major rivers within Clinton County, prehistoric populations would have utilized the creeks and Little Miami River for resources. Approximately 87 percent of the previously recorded prehistoric archaeological sites within the 5-mile buffer are located within 1,000 feet of streams and rivers.

Thirty seven previously recorded archaeological sites identified within 5 miles of the Project Area, 30 have a prehistoric component. Of these 30 sites, 10 consist of prehistoric isolate finds and 20 represent prehistoric scatters and/or prehistoric mounds. The previously recorded prehistoric mounds within the 5-mi study radius (N=3) are all located between 300 and 1500 feet of a waterbody, with 2 of the mounds being within 1000 feet of a waterbody. One prehistoric village site was identified with 165 feet of a waterbody. Of the remaining 16 prehistoric scatters, 11 are within 500 feet of a waterbody, 3 are within 1000 feet of a waterbody, and 2 are over 1000 feet from a waterbody. Of the 10 prehistoric isolate find sites, 7 are within 500 feet of a waterbody, 2 are within 1000 feet of a waterbody, and 1 is over 1000 feet from a waterbody.

The results of the analysis of archaeological sites within a 5-mile study area indicate that 67 percent of the prehistoric archaeological sites are within 500 feet of a waterbody. A 1000 foot boundary around waterbodies captures 87 percent of previously recorded archaeological sites and 13 percent are over

1000 feet of a waterbody. Due to the limited number of sites within the study radius, resulting from a lack of professional level survey, the small sample size has only provided minimal information regarding this particular Project Area; however, prior use of this modeling for other survey efforts has resulted in a strong association of distance from waterbodies and the ratio of prehistoric archaeological sites. The current workplan draws on multiple factors to create a predictive model using topography, a 500 ft radius around streams and waterways, and soil drainage.

Topography was assessed to determine range of elevations that represent topographical rises, which might have a higher likelihood of prehistoric deposits. Within the current project area, the elevations ranged from between 299 to 315 meters AMSL (16 increments). The top 20 percent of these elevations were considered to be high probability, between 20 and 40 percent of the elevations were determined to be moderate probability, and below the 40th percentile of elevation was determined to have low archaeological potential. Contour files were created only including the 20th percentile of elevations and only the 40th percentile of elevations then these layers were overlaid on a map with the hydric soils. Approximately 398 ac within the Project Area were located within the top 40th percentile of elevation in non-hydric soil units, which was defined as moderate and high prehistoric archaeological sensitivity areas. Hydric and poorly drained soils were determined to have low archaeological potential while moderately well drained and well drained soils were determined to have moderate to high archaeological potential. Within the Project Area, 2,131.2 ac of the 3,272 acre Project are within hydric soil units (Figure 3). Areas within 500 ft of a stream or waterway were determined to have high prehistoric archaeological potential, in particular, well drained soils with topographical rises within this buffer have the highest probability of containing prehistoric deposits.

Archaeological modeling based on these factors indicates that 1,727 ac of the 3,272 ac Project Area were determined to have moderate or high prehistoric archaeological deposit potential. A total of 1,545 ac of the Project fall outside of high and moderate potential utilizing topography and soils, a 500 ft watercourse buffer, and a 200 ft radius around historically mapped structure locations (Figure 4). Cardno proposes to survey 100 percent of the high and moderate prehistoric probability areas and a minimum of 50 percent of the low prehistoric probability areas (773 ac), resulting in a minimum of 2,500 acres of the project area being subject to archaeological investigation.

It should be noted that in the low probability areas, which predominantly consist of hydric soil units, it is likely that many of the fields are artificially drained by drainage tiles or other agricultural piping drain systems. The installation of these systems in agricultural fields is very invasive and would heavily impact the integrity of prehistoric subsurface deposits at a depth significantly greater than the plowzone.

In developing a historic model to determine areas with increased likelihood for historic sites, Cardno referenced a series of historic maps available for Clinton County. Using this data, a 200 foot buffer was placed around structures visible on mapping from the mid-nineteenth century through the mid-twentieth century. Cardno has utilized this methodology on previous surveys and the results have yielded numerous previously unrecorded historic archaeological sites. The 200-foot buffer has routinely proved effective to identify historic sites even if older maps contains minor location errors.

Referenced historic maps utilized for the current workplan include the 1859 Map of Clinton County, Ohio (Walling 1859), the 1875 Illustrated Historical Atlas of Clinton County, Ohio (Lake, Griffing, and Stevenson 1876), the 1903 Historical Directory and Atlas Clinton County, Ohio (Sutton and Company 1903), the 1907 Blanchester and 1917 Sardinia, Ohio 15' topographical quadrangles (USGS 1907 and 1917), and the 1960 Martinsville and Lynchburg, Ohio 7.5' topographic quadrangles (USGS 1960a, 1960b).

These maps indicated numerous mapped historic structures within the Project Area, several of which remain extant and will be excluded from Project activities; therefore, no archaeological reconnaissance will be conducted within the yardlots. Associated artifacts may be located in adjacent agricultural fields. The majority of the fields adjacent to extant historically mapped structures within the Project Area are within archaeological sensitivity areas and will be surveyed as part of the current workplan (Figure 3).

Currently, the archaeological investigation has been initiated at the Yellow Wood Solar Project. A total of approximately 1,094 ac of the 3,272 ac Project Area have been surveyed, resulting in the identification of 30 archaeological sites. Of these sites, 7 consist of prehistoric isolate finds and 1 consists of a historic isolate find.

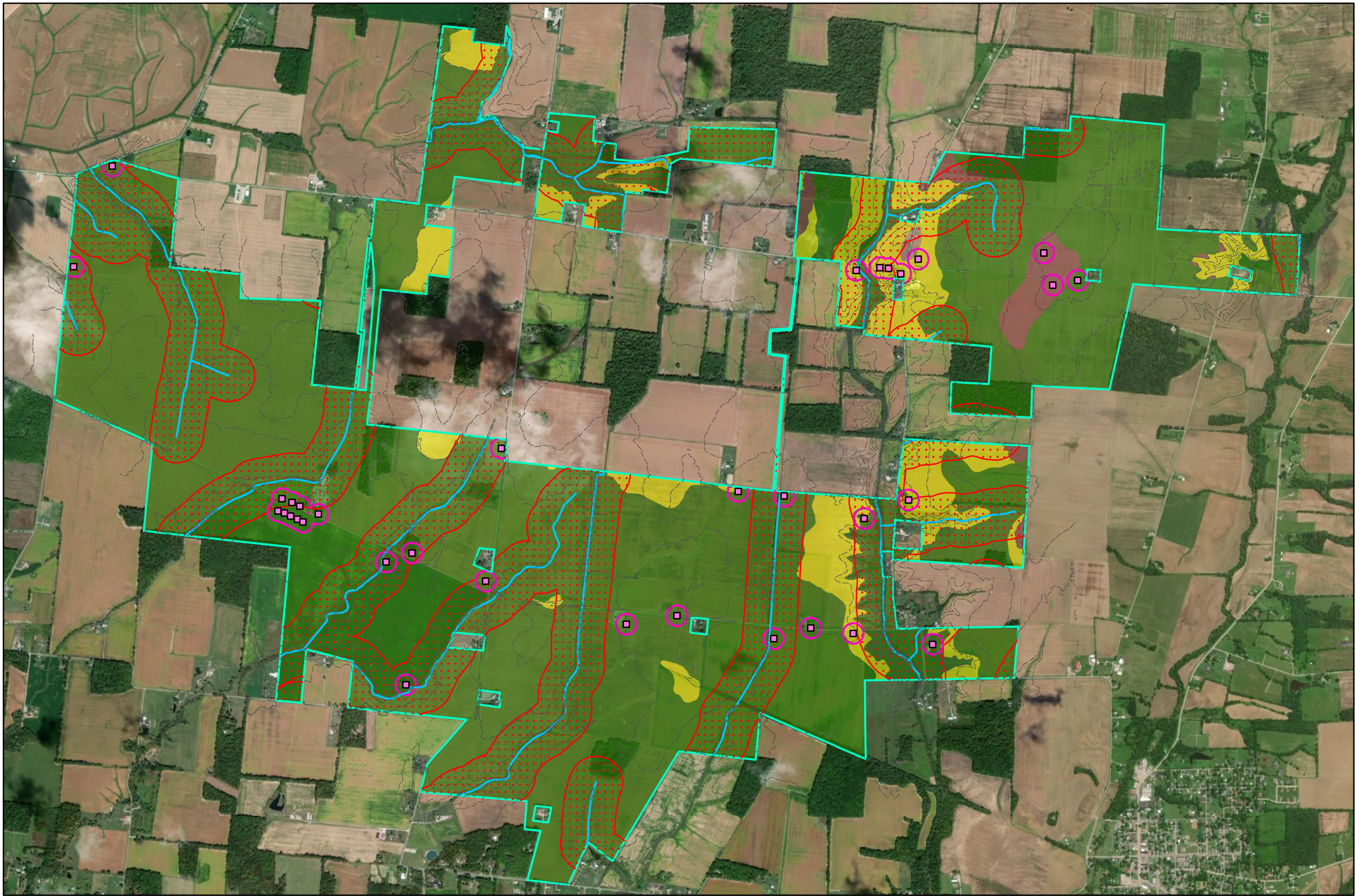
Seven sites consisted of multicomponent prehistoric and historic sites. Three of these sites with large historic artifact concentrations were located in proximity to historically mapped structures. Twelve sites consisted of historic scatters and of these, 6 were in proximity to historically mapped structures which were no longer extant. Three sites consisted of prehistoric scatters, only one of which produced more than 10 artifacts.

This data reflects that approximately 50 percent of historic sites were identified at the locations of historically mapped structures. There are discrepancies in the historic maps and accuracy is variable, and this variability often results in the same structure from different map years, may located in several different positions in proximity to one another. The remainder of the sites with historic components appeared to represent plowed refuse disposal or the potential locations of former outbuildings which had been razed. Only one extant historic feature was identified, which consisted of a stone-lined stock well adjacent to a road. No other architectural remains were present at the historic sites.

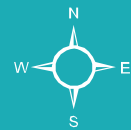
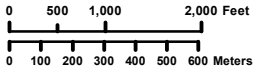
The prehistoric sites and site components generally reflected an ephemeral use of the landscape, and contained either isolate find flakes, or small scatters of less than 10 artifacts. Only one identified prehistoric site produced a moderate amount (approximately 45-50 artifacts) of prehistoric material. This site was identified at the confluence of two waterways, within 500 ft of the waterways, in an area with a combination of well-drained and hydric soils. The site is situated in portions of an area which produced a moderate level of prehistoric archaeological potential when considering the soil and topographical data.

Of the identified sites with prehistoric components, only two sites with prehistoric isolate finds and one site containing a prehistoric scatter, fell outside of the 500 ft stream and river buffer, indicating there is a strong correlation between distance to water and sites within this region. This prehistoric scatter and one of the isolate find sites was, however, within an area defined as having moderate probability when considering the soils and topographical data.

In total, Cardno proposes to investigate a minimum of 2,500 ac of the 3,272 ac Project Area (Figures 1 and 4). The investigated areas will included 1,727 acres of defined prehistoric and historic moderate and high probability areas within the Project Area, and 50 percent of the remaining low probability areas (773 ac), as well as additional areas defined by the Principal Investigator. The total area of proposed Phase I investigation meets, or exceeds, the level of effort completed for other solar development projects in Ohio over the past two years.



- Legend**
- Historic Structure
 - Existing Grade
 - Watercourse
 - Historic Structure Buffer (200ft radius)
 - Watercourse Buffer (500ft)
 - HIGH (Well-drained Soil, Elev 311.8+)
 - MODERATE (Well-drained Soil, Elev 308.6 -311.8)
 - LOW PROBABILITY
 - Yellow Wood



Project No.
E320301702

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Date: 11/24/2020 File Path: C:\share\gis\nt\Yellow Wood Solar\mxd\Yellow Wood Precontact & Historic Arch Sensitivity wStructures.mxd
Basemap: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 4. Precontact and Historic Archaeological Sensitivity

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project
Yellow Wood Solar Energy, LLC
Clinton County, Ohio



3901 Industrial Blvd., Indianapolis, IN 46254 USA
Phone (+1) 317-388-1982 Fax (+1) 317-388-1986
www.cardno.com

Saved By: Kevin Gabel

2.5.3 Phase I Archaeological Survey Methodology

Cardno will conduct the archaeological fieldwork using methods consistent with the OH-SHPO guidelines and in consultation with OH-SHPO (OH-SHPO/OHC 2014). Cardno will perform the Phase I in order to identify archaeological sites and other cultural resources throughout the Project Area.

2.5.3.1 Pedestrian Surface Survey Methodology

In areas with greater than 50 percent surface visibility, Cardno will conduct a controlled surface survey. This survey will be conducted in transects spaced at a maximum 10 m (33 ft) interval. When the field crew identifies cultural material on the surface, additional survey on a 5 m (16 ft) grid surrounding the artifacts will be conducted. Artifacts will be marked with pin flags mapping the artifact distribution across the ground surface. These locations will be assigned individual Provenience Numbers (PN). At prehistoric sites, Cardno will record and collect all materials located within the Project Area. Archaeologists will record the artifact distribution, along with relevant landscape features, with a Trimble R1 GNSS Receiver unit capable of sub-meter accuracy. The majority of the Project Area is anticipated to be investigated through pedestrian surface survey.

2.5.3.2 Shovel Test Survey Methodology

In areas with less than 50 percent surface visibility, Cardno will conduct systematic shovel probe excavation. STPs will be excavated in transects spaced at 15 m (49.2 ft) intervals. Adherence to these intervals will be maintained as closely as possible, although STPs may be occasionally off set due to the presence of wetlands, subsurface utilities, and hardscape features. Pursuant to OH-SHPO guidelines, shovel tests will be 50 centimeters (cm) (19.6 inches [in]) in diameter and extend into undisturbed soils. Soils removed from the probes will be screened for cultural materials through ¼-in hardware mesh and immediately backfilled. The crew will document and characterize soil stratigraphy according to the Munsell color guide (Munsell 1994). STPs that exhibit disturbance such as mixed and mottled “A” and “B” horizons or subsoil present at the ground surface will be noted, but not fully excavated. Shovel tests located in wet soils will be treated in the same fashion.

When the crew identifies an archaeological site, they will excavate STPs at a 5 m (16.4 ft) interval until two negative test probes have been excavated in each cardinal direction along the grid. The crew then will collect and bag artifacts by individual shovel probe, record relevant information such as soils and depth of deposits, map features with a GPS, and take photographs. Archaeologists will record the artifact distribution, along with relevant landscape features, with a Trimble R1 GNSS Receiver unit capable of sub-meter accuracy.

2.5.3.3 Artifact Analysis

Artifacts will be transferred to Cardno’s archaeological laboratories. Following review and concurrence of all reports of investigations by OH-SHPO, Cardno will return the artifacts to the individual property owners associated with the artifacts. If the property owner wishes to donate the artifacts for curation, a signed Deed of Gift letter will accompany the artifacts and associated records to the curation facility. Thorough documentation of artifacts will be conducted prior to returning artifacts to landowners.

Ohio Archaeological Inventory forms will be submitted for each site identified during the course of the investigation.

2.5.3.4 Archaeological Site Avoidance/ Minimization

It is anticipated that archaeological sites that are considered potentially eligible for the NRHP, identified during the Phase I survey will be avoided or minimized by Project design. If a potentially NRHP eligible archaeological site cannot be avoided by the proposed Project, then additional Phase II archaeological evaluation and, potentially, Phase III mitigation would be conducted at the site. The nature of the required

additional archaeological investigations associated with a resource considered potentially eligible for the NRHP would be determined based on consultation with the OH-SHPO.

Some archaeological sites are not typically considered NRHP-eligible and will not require avoidance or additional archaeological investigations. These site types include isolate prehistoric and historic finds, small, low-density prehistoric scatters that lack subsurface features or diagnostic artifacts, and historic scatters that cannot be associated with specific households, historic contexts, or historic events.

2.5.4 Historic Resources Survey Research Design

The historic resources survey design follows guidance in the *Guidelines for Conducting History/Architecture Surveys in Ohio* (rev. 2014), the *NPS Guidelines for Local Surveys: A Basis for Preservation Planning, Parts 1 and 2* (rev. 1985), National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation (rev. 1995), and National Register Bulletin 16A, How to Complete the National Register Registration Form (rev. 1997). In addition, given the number of rural properties expected to be examined in this project, NRHP Bulletin 30, *Guidelines for Evaluating and Documenting Historic Rural Landscapes* (rev. 1999) will be utilized.

The goal of this historic resources survey research design is to:

- Define the APE for Direct and Indirect Effects on historic resources (see Section 2.5.4.1)
- Establish the criteria by which historic resources will be evaluated (See Section 2.5.4.2)
- Propose a methodology for reconnaissance and intensive survey of historic resources (See Section 2.5.4.3)
- Establish expectation regarding resource typologies and survey results (See Section 2.5.4.4)
- Define the deliverables for the historic resource survey (See Section 2.5.4.5)

2.5.4.1 APE for Direct and Indirect Effects

The Yellow Wood Phase 1 project APE has an area of direct impact that measures 3,272 acres. There are no previously documented resources or NRHP-listed resources within this footprint. However, there will likely be unrecorded resources within the direct project area that will be identified and evaluated for NRHP listing. Direct effects to any NRHP eligible properties will be evaluated per 36 CFR 800.5, Assessment of Adverse Effects. Direct effects are not anticipated as the project will shift to avoid any eligible properties.

Indirect effects for the project were determined through a preliminary viewshed analysis as well as prior experience of the effects of vegetation and topography on visibility. Per 36 CFR 80.5, Assessment of Adverse Effects, the most likely indirect effects would be (2)(v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of a property's significance historic features. Visual impacts are considered most likely, as utility-scale solar farms produce minimal noise and atmospheric conditions. Therefore, potential visual effects were taken into consideration when developing the project's APE. As always, all relevant adverse effects will be applied to any listed and eligible resources within the project's APE.

In order to accurately determine the Project's APE, given what is known about potential indirect effects, a preliminary viewshed analysis was prepared using the Environmental Systems Research Institute (ESRI) ArcGIS software with Spatial Analyst Extension. The viewshed analysis was based on a digital elevation model (DEM), which considers the screening effects of topography, vegetation, and buildings (Figure 5). Results are reported in a first-run LiDAR, given a six feet tall observer and are restricted to a five-mile radius, as has been customary for solar projects in Ohio. The DEM used for this examination was

downloaded from the Ohio Geographically Referenced Information Program (<http://gis5.oit.ohio.gov/geodatadownload/>).

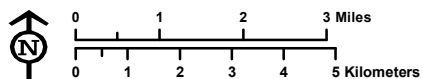
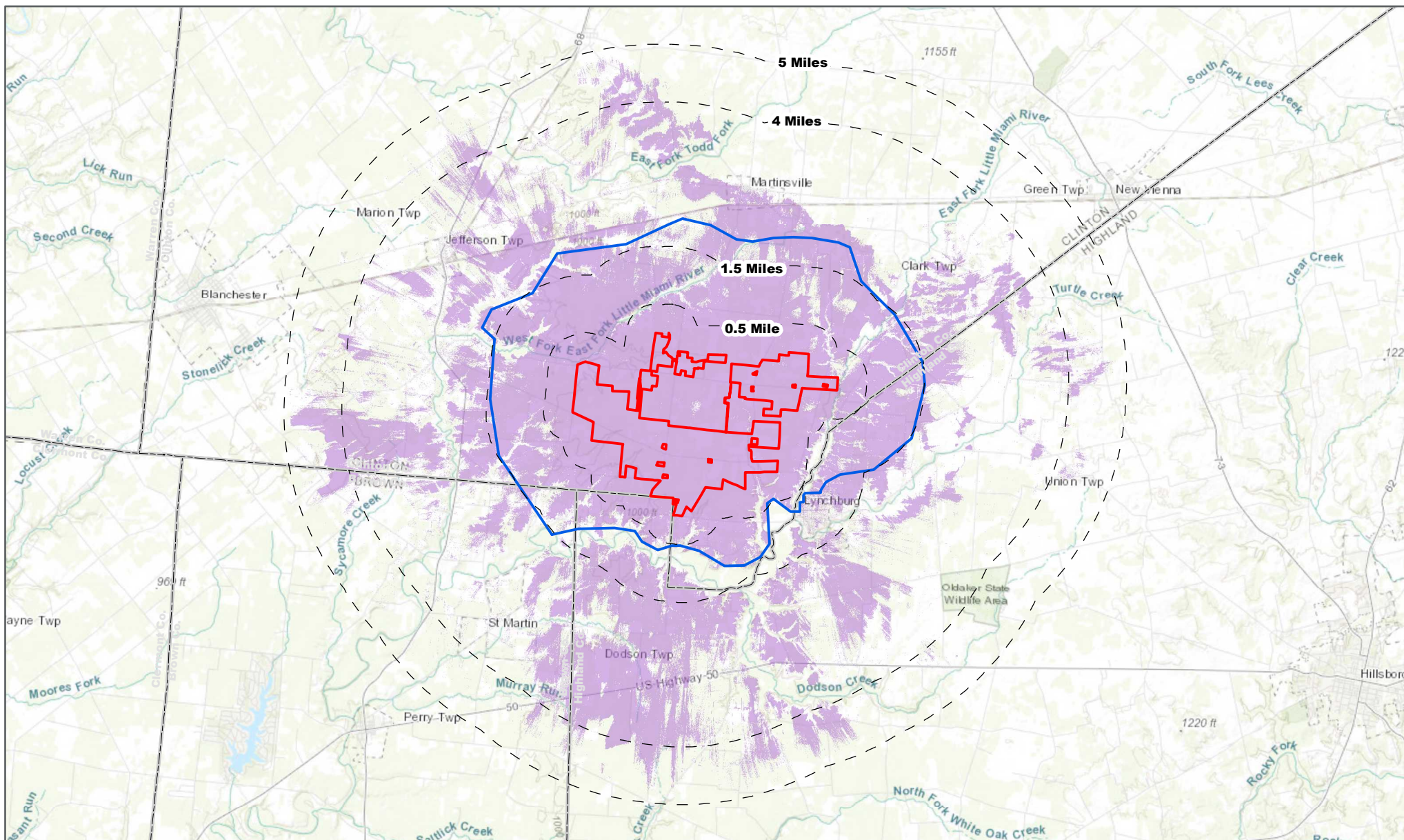
In addition to the DEM model, Bare Earth modeling was conducted with the same parameters (Figure 6). Bare Earth modeling only accounts for topographical variations which may impede the viewshed, rather than including extant buildings, vegetation, and other vertical viewshed impediments.

The two models were merged to create an APE which ranged between 0.5 miles and 2.0 miles (Figure 7). The majority of prohibiting factors within the Bare Earth model consists of elevation changes associated with waterways. In addition, although the entire town of Lynchburg falls within the Bare Earth viewshed modeling, the associated buildings, which measure approximately 15 to 20 feet tall, create a more-than adequate visual barrier, so that only the town limits on the western side of Lynchburg were included within the APE.

Simulations prepared for previous solar projects indicate that a two-mile study area range is appropriate for solar projects in southwestern Ohio's topographic conditions. Visual resource analysis for this project determined that the practical limits for panel visibility end at approximately a half-mile to 2.0 miles due to the relatively low height of the panel array, which is estimated at 20 feet. As can be seen in Figures 4 and 5, visibility is most pronounced north, northeast, and west of the project area, up to between 1.5 and 2.0 miles. To the south and southeast, visibility is limited to approximately a half mile to one mile, due to the presence of significant vegetation and forested river valleys. Given these conditions, the proposed APE is curtailed on the south and east, and expanded on the west, northeast, and north, as can be seen in Figures 5 through 7 below.

Areas within the Bare Earth modeling that extend into the 2.0 mile study area are not consistently visible and were not included in the APE hybrid of the Bare Earth and DEM modeling. Cardno architectural historians will, however, examine the entire 2.0 mile study area, outside the proposed APE, and document eligible resources, as well as previously recorded resources regardless of their eligibility. Outside the APE (within the 2.0 mile study area), ineligible properties will not be recorded. As noted above, the portion of Lynchburg that falls within the 2.0 mile radius outside the APE will be examined for potentially eligible resources and districts. Other properties, older than 45 years in age, will not be documented due to the lack of NRHP eligibility and therefore effects.

Cardno's architectural historians approach the concept of APE with fluidity; that is, areas directly adjacent to the APE will be included if on-the-ground conditions merit this expansion. Field survey will be limited to eligible properties that exist in proximity to, although directly outside the APE.



- Project Area
- Proposed Historic APE
- Visibility Range Rings

■ Area within which panels are visible*

* Based on first-return LiDAR, given a 20-foot panel height, a 6-foot tall observer, and restricted to a 5-mile radius.

7.5' Quadrangles:
Martinsville, OH (1960)
Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Figure 5. First Return Viewshed Model with APE for Indirect Effects

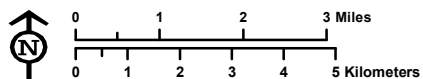
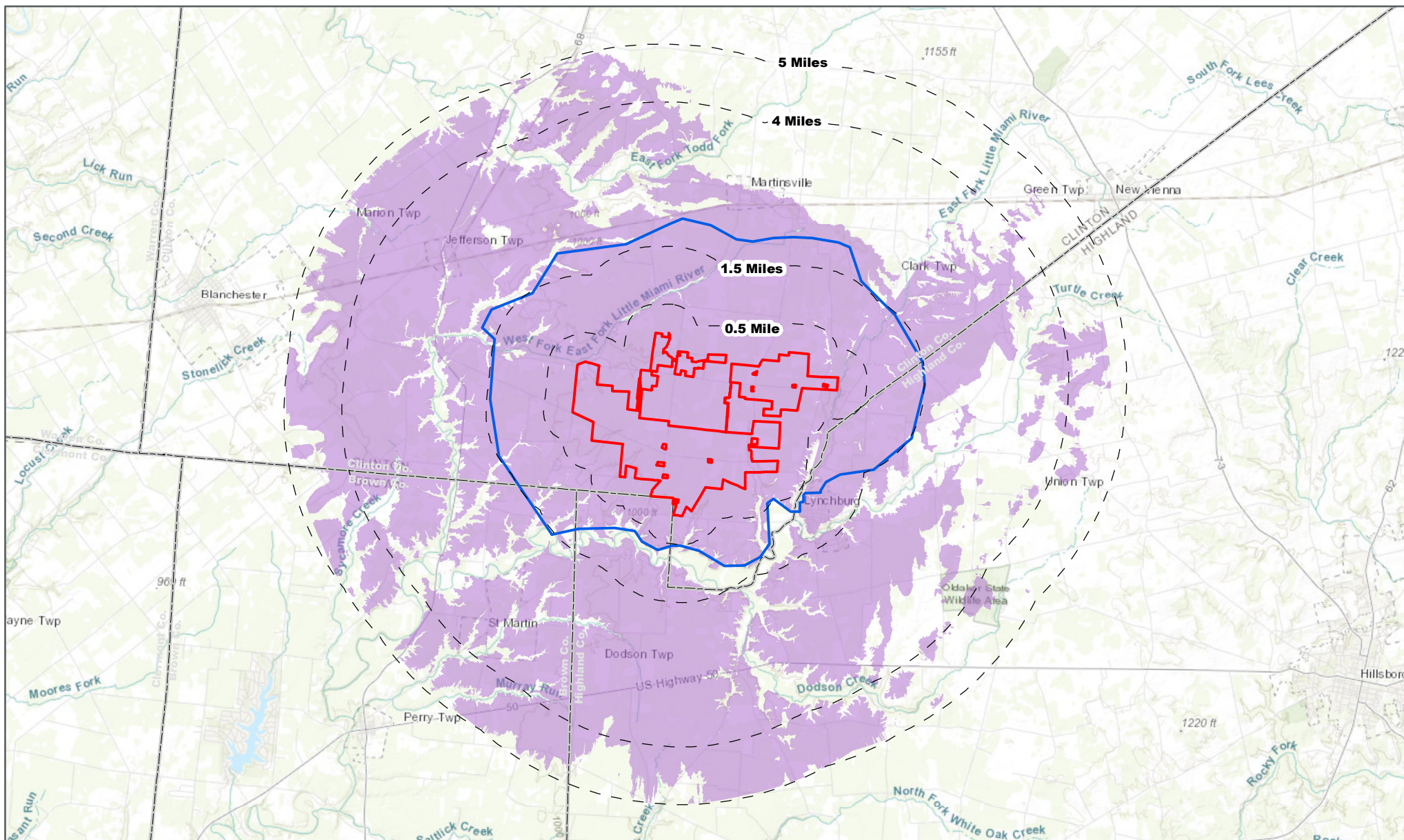
Phase I Cultural Workplan for the Yellow Wood Solar Energy Project

Yellow Wood Solar Energy, LLC

Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com



- Project Area
- Proposed Historic APE
- Visibility Range Rings

■ Area within which panels are visible*
 * Based on bare earth LiDAR, given a 15-foot panel height, a 6-foot tall observer, and restricted to a 5-mile radius.

7.5' Quadrangles:
 Martinsville, OH (1960)
 Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Figure 6: Bare Earth Viewshed Model with APE for Indirect Effects

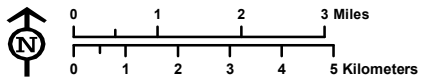
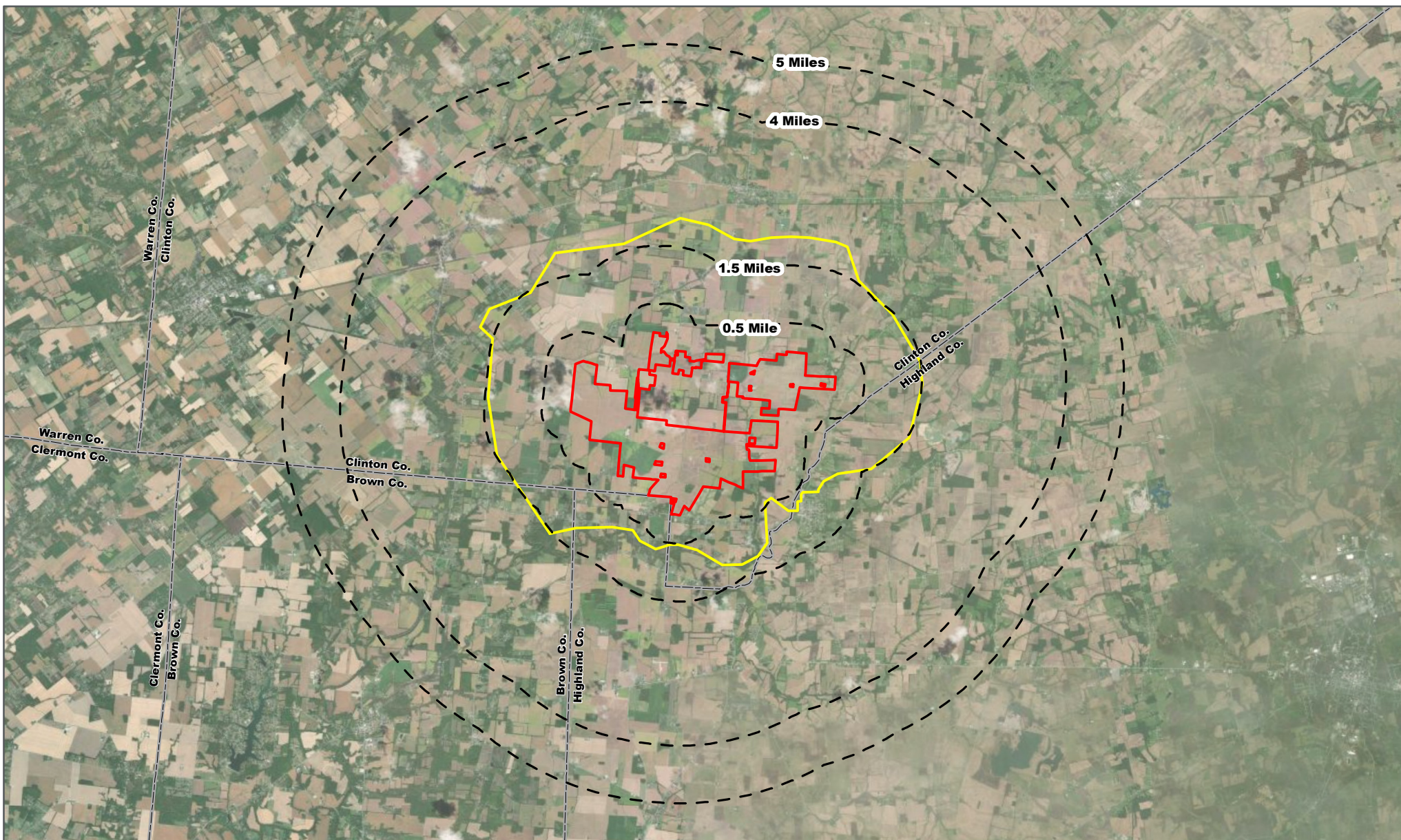
Phase I Cultural Workplan for the Yellow Wood Solar Energy Project

Yellow Wood Solar Energy, LLC

Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
 Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com



- Project Area
- Proposed Historic APE
- Visibility Range Rings

7.5' Quadrangles:
Martinsville, OH (1960)
Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Figure 7: Aerial Photo with APE for Indirect Effects

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project
Yellow Wood Solar Energy, LLC
Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com

2.5.4.1 Criteria for Evaluating the Significance for Historic Resources

Cardno will conduct reconnaissance architectural history survey using methods consistent with both the NPS guidelines and the Ohio State Historic Preservation Office/ Ohio History Connection (OH-SHPO/OHC) guidelines (Derry et al. 1977; OH-SHPO/OHC 2014). Eligibility will be assessed based on the historic context and following the guidance outlined in Section 2.5.4 above.

Historic/architectural survey work will determine the presence of resources that are listed in or potentially eligible for the NRHP. During the course of the investigation, Cardno will evaluate the documented properties for potential eligibility that warrant further investigation, based on the NRHP Criteria for Evaluation (36 CFR Part 60.4), which states “The quality of significance in American history, architecture, archaeology, and culture is possible in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association” and meet at least one of the following four criteria defined by the NPS:

Criterion A: Are associated with events that have made a significant contribution to the broad patterns of our history; or

Criterion B: Are associated with the lives of persons significant in our past; or

Criterion C: Embody the distinctive characteristics of a type, period, or method of construction or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

Archaeological sites are primarily assessed under Criterion D.

Buildings less than 50 years old do not meet the NRHP criteria unless they are of exceptional importance under Criterion Consideration G, as described in NPS Bulletin No. 22, *How to Evaluate and Nominate Potential National Register Properties That Have Achieved Significance Within the Last 50 Years* (rev 1998).

2.5.4.2 Historic Resources Survey Methodology

A combination reconnaissance and limited intensive survey work will incorporate archival research to identify and evaluate resources over 47 years in age. The 47 year mark is utilized to allow for analysis of resources that may turn 50 years old prior to the project review or construction. Documentation of resources between 47 and 50 years old will be restricted to situations in which the resources in question are recommended eligible, and have ability to be NRHP-listed within the project’s review and construction period. In addition, resources that are less than 50 years in age will be analyzed to determine if they meet NRHP Criterion Consideration G, properties that have achieved significance within the last 50 years.

All county roads and a few farm roads will be driven within the APE to identify potentially eligible properties. The focus of field survey will be to assess NRHP eligibility. Properties that meet one or more of the NRHP criterion above will receive an intensive level survey, documenting all buildings, outbuildings, structures, and objects on the property, regardless of contributing or non-contributing status. An integrity assessment will be included within the NRHP analysis as well. Properties that will not be recommended eligible will likely form the bulk of the survey work. In these instances, reconnaissance survey will photo-document examples of properties that will not be recommended eligible to provide a representative sampling of the types of properties within the APE. Survey of properties will include documentation by qualified architectural historians using field notes and photographs. Survey work will photograph and assess properties from public right-of-way and evaluate solely based on the visible exterior of the

properties. No inspections or evaluations requiring access to the interior of buildings, or any portion of private property, will be conducted as part of the survey effort.

2.5.4.3 *Expected Survey Results*

Due to the relative size of the APE and the early nineteenth century Euro-American and African American settlement of the area, Cardno expects to find a few resources potentially eligible for listing in the NRHP. The landscape was historically agricultural in nature and for the most part remains that way today. There is one NRHP listed property within the larger two-mile study area, which is located within the APE (Lynchburg Covered Bridge). Five previously identified OHI-recorded buildings and 11 OGS-designated cemeteries identified within the two-mile study area suggests likeliness that additional historic buildings and cemeteries will be identified within the APE. Buildings may include those typical of agricultural landscapes such as farmhouses, barns and agricultural support buildings as well as other residential dwellings. Based on the current research, it is not expected that any OGS-identified cemetery would be eligible for NRHP listing based on Criterion Consideration D.

The project area itself does not include any population centers or major industries. Southeast of the Project Area is the town of Lynchburg, approximately 0.6 mi southeast, north of the Project Area is Martinsville, approximately 2.5 mi north, and west of the Project Area is Westboro, approximately 2.0 mi west. It is expected that additional historic residential resources will be newly identified within the APE, and possibly associated with these population centers.

2.5.4.4 *Historic Resources Survey Report and Inventory Forms*

Per the Survey Report Submission Requirements, one color hard copy and one digital PDF copy of the survey report which will include GIS data, will be submitted to the OH-SHPO for project review. In addition, Ohio Historic Inventory forms will be updated for previously inventoried resources within the APE. New forms will be submitted only for properties identified during the survey which are recommended for inclusion in the NRHP.

3 Applicable Regulations and Guidelines

The proposed Project will require a Certificate of Environmental Compatibility and Public Need from the Ohio Power Siting Board (OPSB). The Project is not a federal undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA); however, the Phase I archaeological reconnaissance will be conducted in a way consistent to satisfy requirements of Section 106 of the NHPA.

OPSB OAC 4906-4-08 requires the provision of information on cultural resources. Specifically, registered landmarks and significant cultural resources within 10 miles of the Project Area must be indicated on a map and described. The Project will seek a waiver from this rule and will investigate the Project footprint, in accordance with OHC expectations for archaeological investigations. Significant cultural resources include “those districts, buildings, structures, and objects that are recognized by, registered with, or identified as eligible for registration by the... Ohio historical society [sic]” [OAC 4906-4-08 (D)]. It is further required that the impact of the proposed facility on the preservation and continued meaningfulness of these landmarks be evaluated and plans described to avoid or mitigate any adverse impact [OAC 4906-4-08 (D)].

Pursuant to Ohio Revised Code §149.53, if archaeological artifacts or human remains are identified during Project activities in any location, work within the area must stop and the OH-SHPO must be notified within two (2) business days.

4 Conclusion and Recommendations

Yellow Wood has contracted Cardno to conduct a Phase I archaeological and architectural reconnaissance prior to the construction activities related to the Yellow Wood Solar Energy Project in Clinton County, Ohio and the enclosed workplan details the proposed cultural resources effort for this project.

The proposed Project involves the installation of up to a 300 MW solar energy project. The Project is located in Clinton County, Ohio, on the Martinsville and Lynchburg, Ohio 7.5' topographic quadrangle maps and totals approximately 1,324 ha (3,272 ac).

Cardno conducted a records search using data on file at the OH-SHPO in September 2020. Cardno focused on previously recorded resources within 3.2 km (2 mi) of the proposed Project Area, but also examined the larger region where appropriate. The records check indicates that 26 previously identified archaeological sites, 11 cemeteries, and 5 historic structures, one of which is listed in the NRHP, have been recorded within the 3.2 km (2 mi) study area. No cultural resources have been previously recorded within the Project Area and there have been no cultural resources investigations within the Project Area.

The Project Area consists of agricultural land, fallow grasslands, and remnant woodlots in Clinton County, Ohio. The workplan proposes to conduct Phase I archaeological reconnaissance on a minimum of 1,012 ha (2,500 ac) of the approximately 1,324 ha (3,272 ac) Project Area. The archaeological reconnaissance testing strategy is based upon the probability model outlined within this document.

In addition, an APE for the historic properties viewshed is proposed within this workplan, which will define the areas to be investigated for above ground resources. The APE was designed based upon visual analysis of the project area in conjunction with aerial photos, which was used to outline the maximum viewshed to and from the Project Area.

The records review and workplan presented within this document is provided to OH-SHPO for approval in advance of the completion of cultural resource investigations, to evaluate the proposed sampling strategy,

field methodologies, as well as to ensure that the proposed scope of the survey is consistent with OH-SHPO's standards. Please provide a formal response indicating OHPO's concurrence with and/or comments regarding the workplan presented within this document.

5 References Cited

Addington, James E.

- 1978 Phase II Archaeological Survey for the Lynchburg Sanitary Sewer System, Highland County, Ohio. Copy on file at the Ohio History Connection, State Historic Preservation Office.

Addington, James E. and Paul A. Davidson

- 1978 Preliminary Archaeology Survey Report for the Lynchburg Sanitary Sewer System. Final report not filed at the Ohio History Connection, State Historic Preservation Office.

Baby, Raymond S. and Martha A. Potter

- 1965 Cole Complex: A Preliminary Analysis of Late Woodland Ceramics in Ohio and Their Relationship to the Ohio Hopewell Phase. Ohio Historical Society Papers in Archaeology, no. 2. Columbus.

Beamer, Herb

- 1992 Literature Review and Reconnaissance Survey: County Road 29 Bridge Replacement, Clark Township, Clinton County, Ohio. Prepared by ASC Group. Copy on file at the Ohio History Connection, Ohio State Historic Preservation Office.

Beers, W.H.

- 1882 *History of Clinton County, Ohio*. W.H. Beers and Company. Electronic copy, <https://archive.org/details/historyofclinton01dura>, accessed September 2020.

Brockman, C. Scott

- n.d. Physiographic Regions of Ohio. Electronic document, http://www.epa.state.oh.us/portals/27/SIP/Nonattain/F2-physiographic_regions_of_Ohio.pdf, accessed September 2020.

Clinton County Historical Center (CCHC)

- 2020 Clinton County Underground Railroad Map. Electronic map, <https://clintoncountyhistory.org/clinton-county-underground-railroad-map/>, accessed September 2020.

Dancey and Seeman

- 2005 Rethinking the Cole Complex, a Post-Hopewellian Archaeological Unit in Central Ohio. In *Woodland Period Systematics in the Middle Ohio Valley*. Edited by Darlene Applegate and Robert C. Mainfort Jr., pp. 134-149. University of Alabama Press, Tuscaloosa.

Derry, Anne, H. Ward Jandl, Carol D. Shull and Jan Thorman

- 1977 National Register Bulletin: Guidelines for Local Surveys: A Basis for Preservation Planning. U.S. Department of the Interior, National Park Service.

Drooker, P.

- 1997 *The View from Madisonville: Protohistoric Western Fort Ancient Interaction Patterns*. Memoirs of the Museum of Anthropology No. 21. The University of Michigan, Ann Arbor.

Fort Ancient

- 2013 Ohio Prehistory: Late Prehistoric Period AD 1000 – 1750. Electronic document, <https://www.fortancient.org/archaeology/ohio-pre-history?showall=&start=5>, accessed May 2020.

Gordon, J.

- 1996 Aboriginal Cultures and Landscapes. In *A Geography of Ohio*, edited by Leonard Peacefull, pp. 64-78. The Kent State University Press, Kent, Ohio. Originally Published 1990, The Changing Heartland: A Geography of Ohio, Ginn Press.

Gramly, R.

- 1988 Paleoindian Sites South of Lake Ontario, Western and Central New York State. In *Late Pleistocene and Early Holocene Paleoecology and Archaeology of the Eastern Great Lakes Region*, edited by R.S. Laub, N. Miller and D. Steadman, pp. 265-280. Bulletin of the Buffalo Society of Natural Sciences 33.

Lake, Griffing, and Stevenson

- 1876 An Illustrated Historical Atlas of Clinton County, Ohio. Electronic documented provided by www.historicmapworks.com, accessed September 2020. Used with permission.

Lentz, Ed

- 2003 Columbus, The Story of a City: The Making of America Series. Arcadia Publishing, an imprint of Tempus Publishing, Charleston, South Carolina.

Manson, J.L.

- 2007 A Phase I Literature Review and Archaeological Survey of Approximately 123 acres for a Proposed Ecological Mitigation Bank Project In Clark Township in Clinton County and Dodson Township in Highland County, Ohio. Final copy not filed at OH-SHPO.

Meyer, Elaine

- 2013 Phase I Archaeological Survey for the Westboro CLTN-124 Wireless Cellular Tower in Jefferson Township, Clinton County, Ohio. Prepared by EMH&T. Copy on file at the Ohio History Connection, Ohio State Historic Preservation Office.

Mills, W.

- 1914 *Archaeological Atlas of Ohio*. Ohio State Archaeological and Historical Society, Columbus.

Munsell Soil-Color Charts

- 1994 *Munsell Soil-Color Charts with genuine Munsell color chips*. Munsell Color, Grand Rapids.

Nester, William

- 2000 *The Great Frontier War: Britain, France, and the Imperial Struggle for North America, 1607-1755*. Praeger Publishers. Westport, Connecticut.

National Park Service (NPS)

- 1983 *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. United States Government Printing Office, Washington, D.C.

Ohio History Connection

- 2020 Ohio State Historic Preservation Office Online Mapping System. Electronic database, <https://www.ohiohistory.org/preserve/state-historic-preservation-office/mapping>, accessed September 2020.

Ohio History Central (OHC)

- 2015a Ohio History Central: French and Indian War. Electronic document, http://www.ohiohistorycentral.org/w/French_and_Indian_War, accessed September 2015.
- 2015b Ohio History Central: Treaty of Greeneville (1795). Electronic document, [http://www.ohiohistorycentral.org/w/Treaty_of_Greeneville_\(1795\)](http://www.ohiohistorycentral.org/w/Treaty_of_Greeneville_(1795)), accessed September 2015.
- n.d.a Adena Culture. Ohio History Connection. Electronic document, https://ohiohistorycentral.org/w/Adena_Culture, accessed May 2020.
- n.d.b Hopewell Culture. Ohio History Connection. Electronic document, https://ohiohistorycentral.org/w/Hopewell_Culture, accessed May 2020.
- n.d.c Clinton County. Ohio History Connection. Electronic document, https://ohiohistorycentral.org/w/Clinton_County, accessed September 2020.

Ohio State Historic Preservation Office/Ohio History Connection (OH-SHPO/OHC)

- 2014 Guidelines for Conducting History/Architecture Surveys in Ohio. State Historic Preservation Office.

Pacheco, P.

- 1996 Ohio Hopewell Regional Settlement Patterns. In *A View From the Core: A Synthesis of Ohio Hopewell Archaeology*, edited by P. J. Pacheco, pp. 18-35. Ohio Archaeological Council, Columbus.

Pendergast, J. F.

- 1985 Were the French on Lake Ontario in the Sixteenth Century? *Man in the Northeast* 29:71-85.
1990 Native Encounters with Europeans in the Sixteenth Century in the Region Known as Vermont. *Vermont History* 58(2):99-124.

Seeman, M. and W. Dancey

- 2000 The Late Woodland Period in Southern Ohio: Basic Issues and Prospects. In *Late Woodland Societies: Tradition and Transformation Across the Midcontinent*, edited by T. E. Emerson, D. L. McElrath, and A. C. Fortier, pp. 583-611. University of Nebraska Press.

Speth, J., K. Newlander, A. White, A. Lemke, and L. Anderson

- 2010 Early Paleoindian Big-game Hunting in North America: Provisioning or Politics? *Quaternary International* (2010).

Stothers, D.M.

- 1996 Resource Procurement and Band Territories: A Model for Lower Great Lakes Paleoindian and Early Archaic Settlement Systems. *Archaeology of Eastern North America* 24: 173-216.

Stothers, D.M., and T.J. Abel

- 1991 Earliest Man in the Southwestern Lake Erie Basin: A 1990 Perspective. *North American Archaeologist* 12(3):195-242.

Stothers, D.M., T.J. Abel, and A.M. Schneider

- 2001 Archaic Perspectives in the Western Lake Erie Basin. In *Archaic Transitions in Ohio & Kentucky Prehistory*, edited by O. H. Prufer, S. E. Pedde, and R. S. Meindl, pp. 233-289. The Kent State University Press. Kent, Ohio.

Stothers, D.M., J.R. Graves, S.K. Bechtel, and T.J. Abel

- 1994 Current Perspectives on the Late Prehistory of the Western Lake Erie Region: An Alternative to Murphy and Ferris. *Archaeology of Eastern North America* 22:135-196.

Sutton and Company

- 1903 Historical Directory and Atlas Clinton County, Ohio. Electronic document provided by www.historicmapworks.com, accessed September 2020. Used with permission.

Tuck, J.

- 1978 Regional Cultural Development, 3,000-300 B.C. *Handbook of North American Indians* (15). Smithsonian Institution Press, Washington, D.C.

USDA/SCS

- 2005 *Soil Survey of Clinton County, Ohio*. United States Department of Agriculture/Soil Conservation Service. In cooperation with Ohio Department of Lands and Soil, and Ohio Agriculture Research and Development Center.

United States Geological Survey (USGS)

- 1907 Blanchester, Ohio [map]. 1:62,500. 15 Minute Series. United States Department of the Interior. Clinton County, Ohio (WCI). Photorevised in 1931. Electronic document, <https://ngmdb.usgs.gov/topoview/viewer/>, accessed September 2020.
- 1917 Sardinia, Ohio [map]. 1:62,500. 15 Minute Series. United States Department of the Interior. Clinton County, Ohio (WCI). Photorevised in 1946. Electronic document, <https://ngmdb.usgs.gov/topoview/viewer/>, accessed September 2020.
- 1960a Martinsburg, Ohio [map]. 1:24,000. 7.5 Minute Series. United States Department of the Interior. Clinton County, Ohio (WCI). Photorevised in 1962. Electronic document, <https://ngmdb.usgs.gov/topoview/viewer/>, accessed September 2020.
- 1960b Lynchburg, Ohio [map]. 1:24,000. 7.5 Minute Series. United States Department of the Interior. Clinton County, Ohio (WCI). Photorevised in 1962. Electronic document, <https://ngmdb.usgs.gov/topoview/viewer/>, accessed September 2020.

Vickery, K. and J. Litfin

- 1992 *A Proposed Revision of the Classification of Midwestern Paleoindian, Early Archaic, and Middle Archaic Projectile Points*. Department of Anthropology, University of Cincinnati, Cincinnati.

Walling, H.F.

- 1859 *Map of Clinton County, Ohio*. Walling, Rice and Moon Publishers. Copy provided by, www.historicmapworks.com, used with permission. Accessed September 2020.

Waters, Michael R. and Thomas W. Stafford Jr.

2007 Redefining the Age of Clovis: Implications for the Peopling of the Americas. Science 23. Vol. 315, No. 5815: 1122-1126.

Weller, Ryan J.

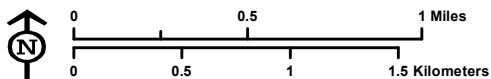
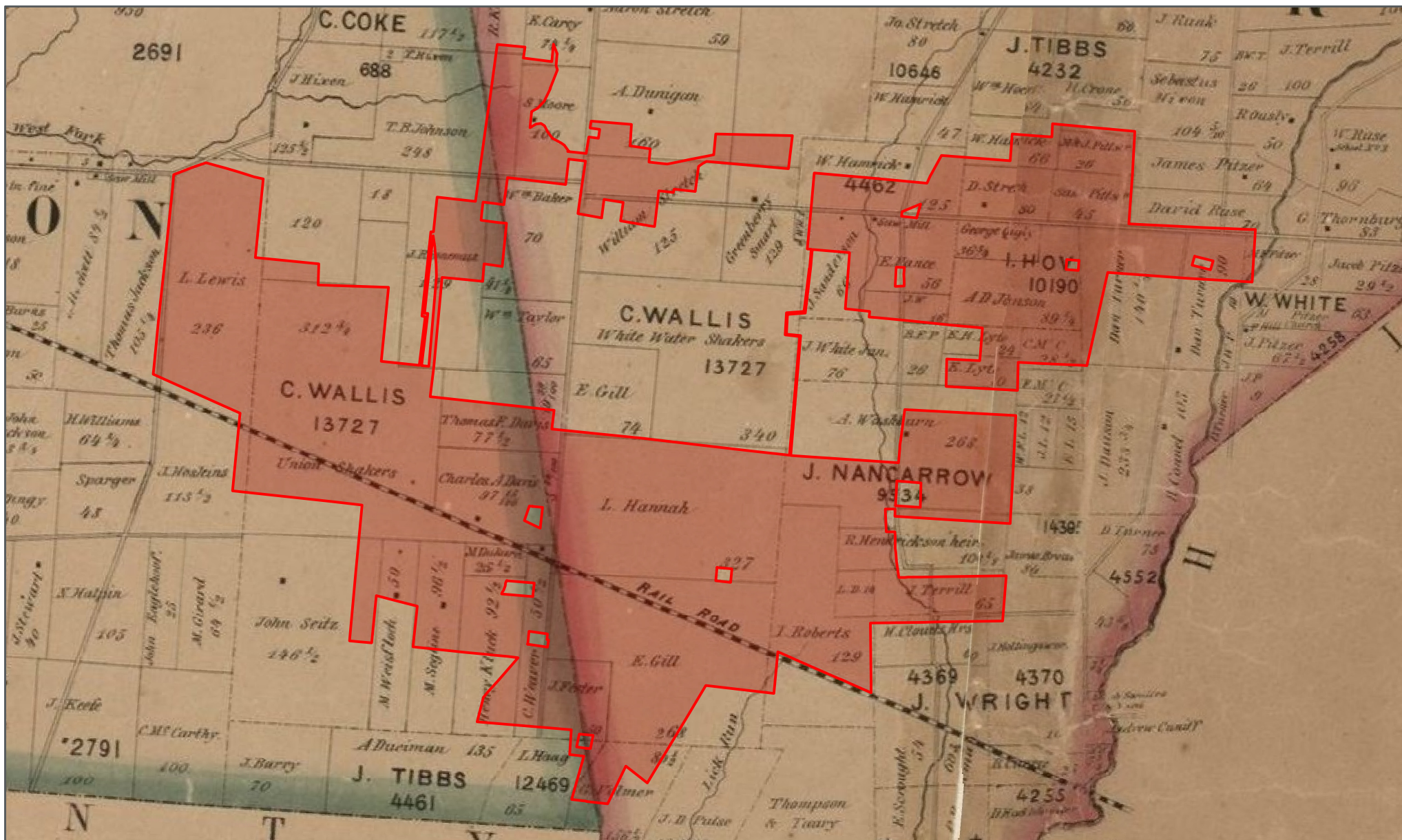
2018 Phase I Archaeological Investigations for the Hillsboro-Hutchings Tap 138kV Rebuild Project in Highland, Clinton, Warren, and Butler County, Ohio. Prepared by Weller and Associates. Copy on file at the Ohio History Connection, Ohio State Historic Preservation Office.

Phase I Cultural Workplan for the
Yellow Wood Solar Energy Project
Clinton County, Ohio

APPENDIX

A

HISTORIC MAPS



 Project Area

Basemap:
Clinton County, OH (1859)

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Date: 9/29/2020

File Path: C:\share\gis\Invenery\Yellowwood Solar\mxd\Yellowwood AppA1 Clinton County 1859.mxd

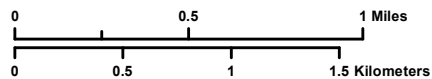
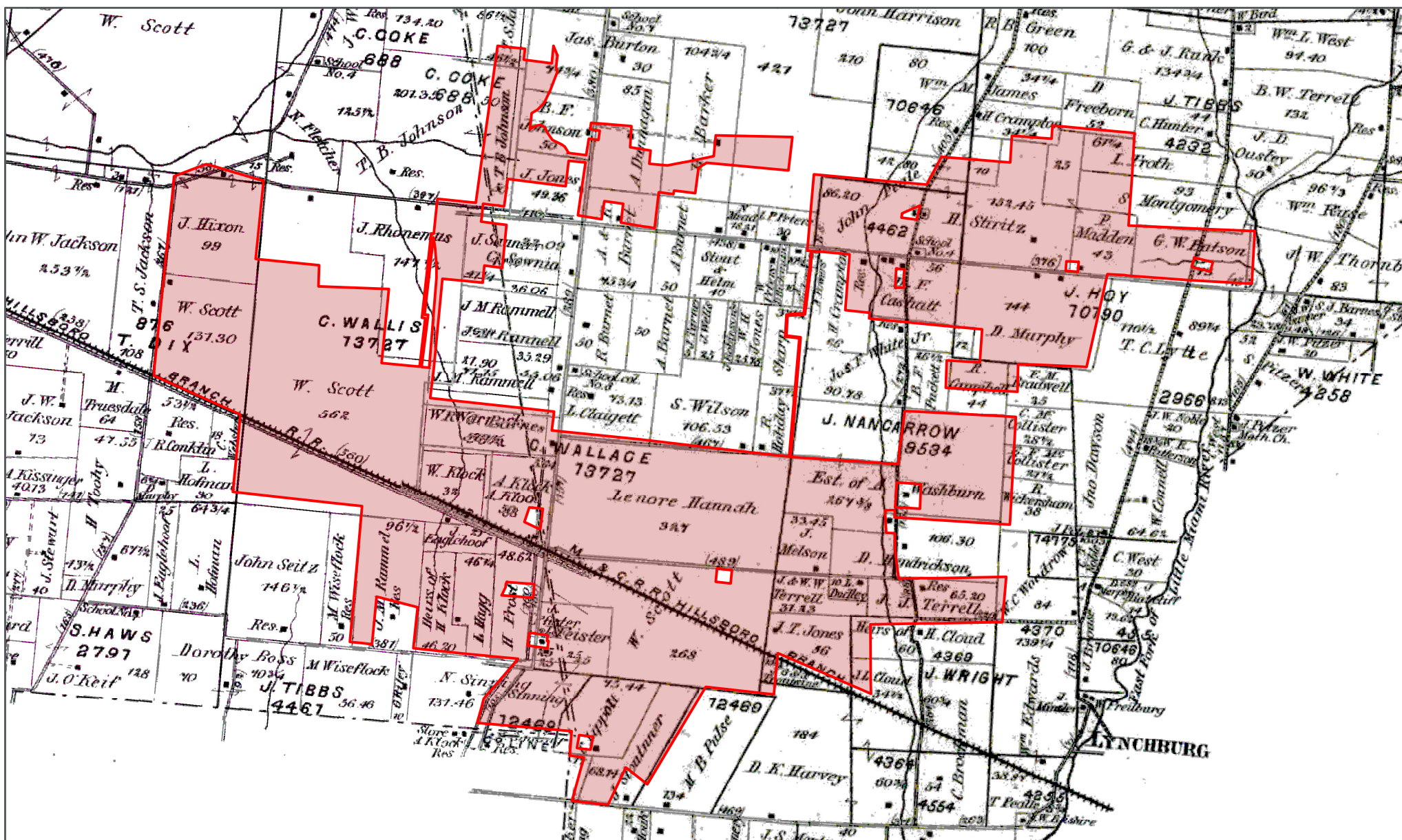
Appendix A1 - H.F. Walling Historical Atlas 1859 Clinton County Map

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project
Yellow Wood Solar Energy, LLC
Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com

GIS Analyst: Kevin Gabel



 Project Area

Basemaps:
Jefferson Township, OH (1876)
Clark Township, OH (1876)

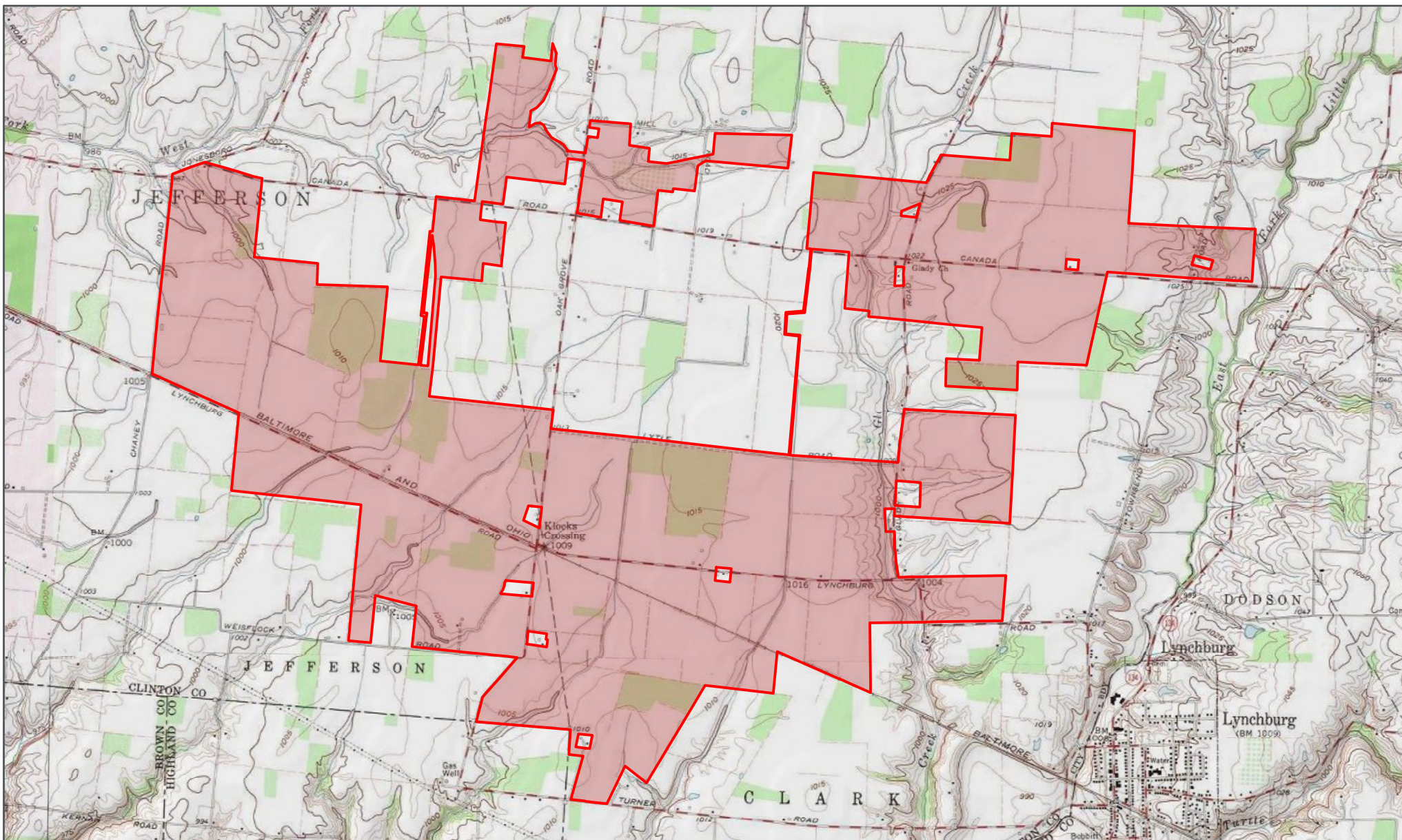
This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Appendix A2 - Lake, Griffing and Stevenson Historical Atlas 1876 Township Map

Phase I Cultural Workplan for the Yellow Wood Solar Energy Project
Yellow Wood Solar Energy, LLC
Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com



0 0.5 1 Miles
0 0.5 1 1.5 Kilometers

 Project Area

7.5' Quadrangles:
Martinsville, OH (1960)
Lynchburg, OH (1960)

PLSS: unsectioned

This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.

Appendix A4 - USGS 7.5' Topographic Quadrangle Map Lynchburg, OH (1960) & Martinsville, OH (1960) Phase I Cultural Workplan for the Yellow Wood Solar Energy Project Yellow Wood Solar Energy, LLC Clinton County, Ohio



3901 Industrial Boulevard, Indianapolis, IN 46254 USA
Phone (+1) 317.388.1982 Fax (+1) 317.945.6309
www.cardno.com

Phase I Cultural Workplan for the
Yellow Wood Solar Energy Project
Clinton County, Ohio

APPENDIX

B

PREVIOUSLY RECORDED CULTURAL
RESOURCES WITHIN 8.0 KM (5.0 MI) OF
THE PROJECT AREA

Appendix B: Previously Recorded Cultural Resources within 8.0 km (5.0 mi) of the Project Area

Resource Number	Resource Type	Resource Name	Cultural Affiliation	Location
OGS ID 1165	Cemetery	Long Cemetery	Historic	West side of US 68. North of Morgan Road
OGS ID 1167	Cemetery	Saint Martins/ Martins Cemetery	Historic	In village of Saint Martin. East of SR 25. On southwest intersection of Brown County Inn Road and Anderson State Road
OGS ID 1170	Cemetery	Pioneer Cemetery	Historic	South of Saint Martin. East of SR 251. Corner entrance road to Ursuline Convent
OGS ID 1171	Cemetery	Alexander Cemetery	Historic	East of SR 251. South of Kernan Road. East side of Aubrey Road
OGS ID 1172	Cemetery	Ursuline Cemetery	Historic	South of Saint Martin. On grounds of Ursuline School for Girls
OGS ID 1962	Cemetery	Betterton Farm-Walt Betterton Cemetery	Historic	1.5 miles south of SR 28. 250 feet west of Farmer's Road
OGS ID 1963	Cemetery	Cramton-Lytle-John Lytle Cemetery	Historic	0.5 mile south of SR 28. 300 feet behind residence at and 546 Cemetery Road. On west side of road
OGS ID 1964	Cemetery	Johnson Cemetery	Historic	1.5 miles south of SR 28. 1300 feet east of Farmer's Road. On east bank of East Fork of Little Miami River
OGS ID 1965	Cemetery	Martinsville I.O.O.F.-I.O.O.F.	Historic	0.5 mile southeast of Martinsville. East side of Cemetery Road
OGS ID 1966	Cemetery	Martinsville Friends Cemetery	Historic	In Martinsville. South of SR 28. Behind Friends Church
OGS ID 1967	Cemetery	Troutwine Cemetery	Historic	Straddles Highland County line. 4 miles southwest of Lynchburg. On north side of CR 29
OGS ID 1968	Cemetery	Turner Cemetery	Historic	0.5 mile southeast of Martinsville. East side of Cemetery Road. Next to MARTINSBURG I. O. O. F.
OGS ID 1969	Cemetery	West Chapel Cemetery	Historic	0.4 mile northeast of SR 134. On northwest side of West Road. Between West Road and East Fork of Little Miami River
OGS ID 1970	Cemetery	Achor Cemetery	Historic	1.25 miles south of SR 28. 1500 feet west of Lacy Road
OGS ID 1975	Cemetery	Jefferson Township-Westboro I.O.O.F.	Historic	North edge Westboro. At southwest intersection of Jonesboro Road and Valley Street
OGS ID 1976	Cemetery	Westboro Friends-Quaker-(Friends) Cemetery	Historic	North edge of Westboro. At northeast intersection of Hale's Branch Road and Jonesboro Road
OGS ID 2011	Cemetery	Mitchell Cemetery	Historic	In southeast tip of township 0.75 mile west of US 68. 0.5 mile north of Second Creek Road. Wooded area between fields
OGS ID 2020	Cemetery	Johns-(Moore-Johns)	Historic	1.2 miles southwest of Cuba. Off US 68. 0.4 mile northeast of Macedonia Road. On northwest side of East Kuebler Road
OGS ID 2022	Cemetery	Mann Cemetery	Historic	1.3 miles southeast of Cuba. 100 feet southwest of and at 1318 Martinsville Road
OGS ID 5178	Cemetery	Baptist-Connell-Hundley-Masonic-Methodist-Murrell- Cemetery	Historic	On north side of village of Lynchburg. East of SR 134
OGS ID 5180	Cemetery	Bobbitt-Morrow Cemetery	Historic	On southwest side of village of Lynchburg
OGS ID 5181	Cemetery	Dodsonville-Lutheran Cemetery	Historic	In village of Dodsonville. On road from Dodsonville to Lynchburg (SR 134)
OGS ID 5182	Cemetery	Henderson Cemetery	Historic	0.5 mile south of Allensburg. South of US 50. West of CR 55C. On right-of-way across farm from main highway
OGS ID 5183	Cemetery	I.O.O.F. Cemetery	Historic	On southeast side of village of Lynchburg. North of abandoned CSX Railroad right-of-way. South of Short Street and CR 11A

Appendix B: Previously Recorded Cultural Resources within 8.0 km (5.0 mi) of the Project Area

Resource Number	Resource Type	Resource Name	Cultural Affiliation	Location
OGS ID 5184	Cemetery	Litheran-Troutwine/Trautwein Cemetery	Historic	Straddles Clinton County line. Near intersection with CR 65A. North side of CR 29
OGS ID 5185	Cemetery	Lynchburg Masonic Cemetery	Historic	In village of Lynchburg. On north side of High Street
OGS ID 5186	Cemetery	Spickard Cemetery	Historic	North of US 50. East of TR 122A. Close to intersection. On farm
OGS ID 5187	Cemetery	Stroup Cemetery	Historic	Southeast intersection of TR 120B and SR 134
OGS ID 5335	Cemetery	Britton-Fetterling Cemetery	Historic	East side of CR 14A. East of intersection with CR 18A. On farm. Few yards from north line of cemetery where road turns sharply left
OGS ID 5337	Cemetery	Ellis Cemetery	Historic	Southeast side of CR 11A. Just south of TR 246A. On knoll. Overlooking Turtle Creek
OGS ID 5338	Cemetery	McCoy Cemetery	Historic	Near Willettsville. On east side of SR 124. On farm
OGS ID 5339	Cemetery	Mount Olive Cemetery	Historic	Southwest corner of intersection of TR 133A and CR 7D. Beside Mount Olive Church of Christ
OGS ID 5341	Cemetery	Runk Cemetery	Historic	About 0.5 mile south of TR 246A. South side of CR 11A. On farm
OGS ID 5342	Cemetery	Thompson Cemetery	Historic	About 0.5 mile west of SR 124. North side of CR 11B. On farm
OGS ID 5343	Cemetery	Unnamed Cemetery	Historic	About 1 mile west of CR 7D. About 0.5 mile east of Clinton County line. North side of CR 9A. On farm once owned by Wright Kenworthy
OGS ID 14509	Cemetery	Mann-Barnett Cemetery	Historic	1.5 miles southeast of US 68. On north side of Macedonia Road
OGS ID 15241	Cemetery	Unidentified #1 Cemetery	Historic	North of Midland. 2000 feet northeast of intersection of SR 28 and US 68. On east side of creek bank
BRO0000101	Church School	Seminary Building	1840	20860 SR 251
BRO0000201	Church/Religious Structure		1885	20860 SR 251
BRO0000301	Church School		1847	20860 SR 251
BRO0000501	Single Dwelling	The Cottage	1863	20860 SR 251
BRO0000601	Single Dwelling	Priest's House	1861	20860 SR 251
BRO0000701	Church School	The Commencement Hall	1859	20860 SR 251
BRO0002801/ NPS Ref. No. 75001328	Hotel/Inn/Motel	Murry's Corner/ Thumann Log House	1811	NWC SR 251 & US 50
BRO0009301	Single Dwelling	Charles Lamphier House	1850	NEC Park & Anderson Rd
BRO0009401	Church/Religious Structure		1866	Anderson Rd
BRO0009501	Single Dwelling		1868	Anderson & Brown Co Inn Rd
BRO0056101	Residential/ Domestic	G. Savage Farm	1820-1890	Approximately 1,050 ft. from intersection of
BRO0057001	Single Dwelling		1860	4773 US 50
CLI0000313	Single Dwelling	William H Turner House	1876	4608 SR 28
CLI0018213	Single Dwelling	Turner Michael Farm	1870	10293 SR 134
CLI0018313	Single Dwelling	Turner William Fox Farm	1870	190 Townsend Rd

Appendix B: Previously Recorded Cultural Resources within 8.0 km (5.0 mi) of the Project Area

Resource Number	Resource Type	Resource Name	Cultural Affiliation	Location
CLI0020712	School	Midland Public School	1876	Broadway St
CLI0021113	Single Dwelling	Bateman House	1817	2467 Wise Rd
CLI0021213	Single Dwelling	Turner William H "Tater" Farm	1875	3308 Martinsville Rd
CLI0026312	Church	Westboro Friends Church	1896	13649 US 68
CLI0026412	Dwelling	H Hockett Residence	ca. 1870	13588 US 68
CLI0026512	Dwelling	S Wickersham Residence	ca. 1870	13525 US 68
CLI0026612	Dwelling	Mrs Deakin Cottage	ca. 1870	30 Westboro Ln
CLI0026712	Dwelling	S Vandeman Residence	ca. 1876	15 Westboro Ln
CLI0026812	Commercial Building	G J Uibel Commercial Building	1912	NWC US 68 & Westboro Rd
CLI0026912	Dwelling	George Coy Residence	ca. 1870	66 Westboro Rd
CLI0027012	Dwelling		ca. 1860	13327 US 68
CLI0027112	Bridge	Cincinnati, Wilmington and Zanesville RR Bridge	ca. 1880	West of Lundy Ln
HIG0003507/ NPS Ref. No. 76001456	Covered Bridge	Lynchburg Covered Bridge	1870	W High St over Little Miami Rvr
HIG0028807	Single Dwelling	Mathias Coffman Log House	1833	269 N Main St
HIG0029807	Single Dwelling	Bobbitt House	1836	311 S Main St
NPS Ref. No. 76001372		St Ursula Literary Institute		NE of Fayetteville off SR 251
NPS Ref. No. 82003548	Dwelling	Murphy, Daniel, Log House		Anderson State Rd
NPS Ref. No. 74001421	Covered Bridge	Martinsville Road Covered Bridge		W of Martinsville
33-BR-0007	Archaeological Site	Mound # 6 (St Martins Mound)	Prehistoric	Confidential
33-CN-0029	Archaeological Site	McCoy Mound	Prehistoric	Confidential
33-CN-0041	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0372	Archaeological Site		Historic	Confidential
33-CN-0373	Archaeological Site		Historic	Confidential
33-CN-0374	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0375	Archaeological Site		Historic	Confidential
33-CN-0376	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0377	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0378	Archaeological Site		Historic	Confidential
33-CN-0440	Archaeological Site		Prehistoric	Confidential
33-CN-0441	Archaeological Site		Prehistoric	Confidential
33-CN-0442	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0443	Archaeological Site	possible mound	Prehistoric	Confidential
33-CN-0444	Archaeological Site		Prehistoric	Confidential
33-CN-0445	Archaeological Site		Prehistoric and Historic	Confidential
33-CN-0471	Archaeological Site		Prehistoric	Confidential
33-CN-0472	Archaeological Site		Prehistoric	Confidential

Appendix B: Previously Recorded Cultural Resources within 8.0 km (5.0 mi) of the Project Area

Resource Number	Resource Type	Resource Name	Cultural Affiliation	Location
33-HI-0039	Archaeological Site		Prehistoric	Confidential
33-HI-0040	Archaeological Site		Prehistoric	Confidential
33-HI-0041	Archaeological Site		Prehistoric and Historic	Confidential
33-HI-0042	Archaeological Site	Turtle Creek Village	Prehistoric and Historic	Confidential
33-HI-0320	Archaeological Site		Prehistoric and Historic	Confidential
33-HI-0321	Archaeological Site		Prehistoric	Confidential
33-HI-0322	Archaeological Site		Prehistoric	Confidential
33-HI-0323	Archaeological Site		Prehistoric	Confidential
33-HI-0324	Archaeological Site		Prehistoric and Historic	Confidential
33-HI-0325	Archaeological Site		Prehistoric	Confidential
33-HI-0326	Archaeological Site		Prehistoric	Confidential
33-HI-0327	Archaeological Site		Prehistoric	Confidential
33-HI-0328	Archaeological Site		Historic	Confidential
33-HI-0329	Archaeological Site		Prehistoric	Confidential
33-HI-0330	Archaeological Site		Prehistoric	Confidential
33-HI-0331	Archaeological Site		Prehistoric	Confidential
33-HI-0332	Archaeological Site		Prehistoric	Confidential
33-HI-0351	Archaeological Site		Historic	Confidential
33-HI-0352	Archaeological Site		Historic	Confidential

Attachment B

Yellow Wood Solar Energy Project

Programmatic Agreement

PROGRAMMATIC AGREEMENT
Between
Yellow Wood Solar Energy LLC
and the
Ohio State Historic Preservation Office
for the Administration of The Yellow Wood Solar Energy Center Project
Clinton County, Ohio

WHEREAS, Yellow Wood Solar Energy LLC, ("Yellow Wood Solar") has proposed to construct the Yellow Wood Solar Energy Center ("Project") in Clinton County;¹ and

WHEREAS, Yellow Wood Solar will need to file an Application for a Certificate of Environmental Compatibility and Public Need to construct a solar-powered electric generation facility with the Ohio Power Siting Board ("OPSB") (OPSB Case No. 20-1680-EL-BGN); and

WHEREAS, constructing the Yellow Wood Solar Energy Center may affect cultural resources, including "landmarks" as that term is defined in Ohio Administrative Code ("OAC") Rules 4906-4-08(D) and 4906-5-07(E); and

WHEREAS, applicants for certificates for electric generation facilities under OAC Chapters 4906-4 and 4906-5 must identify cultural resources, provide an evaluation of impacts by such facilities on such resources, and describe plans to avoid, minimize, or mitigate any adverse effects to such resources; and

WHEREAS, OPSB is coordinating with the Ohio State Historic Preservation Office ("SHPO") pursuant to Ohio Revised Code ("RC") Section 149.53, and Yellow Wood Solar is working with SHPO to fulfill its duties under the OAC as a certificate applicant to provide plans to avoid, minimize, or mitigate any adverse effects of the Yellow Wood Solar Energy Center on cultural resources, including "landmarks" under the OAC. Specifically, Yellow Wood Solar has submitted, and obtained concurrence from SHPO on the Project's Phase 1 Archeological survey work plan, but due to weather conditions, has not been able to complete this survey or obtain survey concurrence in time to file with the OPSB Certificate of Environmental Compatibility and Public Need filing.

NOW, THEREFORE, Yellow Wood Solar and SHPO have agreed to carry out their remaining respective duties under RC Section 149.53 and OAC Chapters 4906-4 and 4906-5, in accordance with the following stipulations set forth in this Programmatic Agreement (PA):

STIPULATIONS

I. Roles and Responsibilities

- a) SHPO shall be responsible for providing technical assistance and guidance as needed and reviewing Project documentation, in accordance with SHPO's assigned duties under the OAC and RC.
- b) Yellow Wood Solar shall be responsible for preparing cultural resources documentation for SHPO and maintaining cultural resources records on the Yellow Wood Solar Energy Center.
- c) Yellow Wood Solar shall utilize persons meeting the applicable Professional Qualifications Standards set forth in the *United States Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* to conduct identification of cultural resources.

II. Archaeological and Cultural Resource Review Phasing

a) Phase 1: Complete archaeological and historic/architectural surveys

Archaeological surveys for the Yellow Wood Solar Energy Center certificate application were initiated in October 2020 and approximately 1,083 acres have been investigated. Survey methodology was revised based on e-mail comments from SHPO and the plan was revised and submitted back to SHPO for review on December 21, 2020. The remaining fieldwork will be guided by the revised workplan that was approved via e-mail on January 14, 2021. Yellow Wood Solar plans to complete the surveys in Spring 2021 and anticipates submitting a technical report documenting these surveys to SHPO by June 2021.

¹ A map of the area is attached and incorporated into this Programmatic Agreement as Appendix 1.

b) Phase 2: Evaluate "landmarks" through research and analysis

As part of Yellow Wood Solar's compliance efforts before the OPSB regarding consultation and coordination with SHPO, the cultural resources identified by surveys described in Section II.a of this PA will be recorded as stipulated in the survey plan² currently pending SHPO approval and subsequently evaluated according to the eligibility criteria for listing in the National Register of Historic Places (NRHP). See Code of Federal Regulations Title 36 Part 60.4 (36 CFR § 60.4).

To date, 31 archaeological sites have been recorded within the Project Area. Technical reports will include recommendations for NRHP eligibility, as well as evaluations of the effects of Yellow Wood Solar on identified cultural resources. If a cultural resource is determined to be eligible for listing in the NRHP and avoidance of adverse impacts is not feasible, a mitigation plan will be submitted for SHPO review, with measures for minimization of impacts included where feasible.

Ohio Archaeological Inventory (OAI) and Ohio Historic Inventory (OHI) forms will be completed for all cultural resources encountered within both the direct and indirect area of potential effect (APE). Draft copies of these OAI and OHI forms will be included with all forthcoming cultural resources management summaries and reports, and will be identified and referred to in all future project updates and communications by their individual inventory numbers.

c) Phase 3: Develop a plan for avoiding, minimizing, or mitigating adverse effects to NRHP-eligible cultural resources, including "landmarks"

Yellow Wood Solar will make every effort to avoid adverse effects on NRHP-eligible cultural resources, including "landmarks" as that term is used in OAC Rules 4906-4-08(D) and 4906-5-07(E), by adjusting Project facilities. If avoidance is not feasible, Yellow Wood Solar will work with SHPO to develop a minimization/mitigation plan that will be memorialized in a Memorandum of Understanding (MOU) and may include the following mitigation treatment strategies: additional survey work, thematic or multiple property studies, NRHP nominations, offset funding for restoration of local landmarks, support for local preservation organizations, heritage tourism projects, development of education materials and lesson plans, and website development. It is anticipated that these or similar mitigation treatment strategies will be appropriate for Yellow Wood Solar, should they be necessary. Nevertheless, the results of the surveys and evaluations described above in Sections II.A and II.B will be used to develop appropriate and meaningful mitigation for adverse effects to cultural resources eligible for listing on the NRHP.

III. Project Review and Concurrence

Provided that Yellow Wood Solar follows the phasing approach in Section II of this PA, and subject to this PA's terms, SHPO's execution of this PA constitutes its concurrence regarding avoidance or mitigation of adverse effects to cultural resources by the Yellow Wood Solar Energy Center.

IV. Technical Assistance and Educational Activities

Staff in SHPO's Resource Protection and Review (RPR) Department will provide technical assistance and consultation as requested by Yellow Wood Solar, or as proposed by SHPO, in order to assist Yellow Wood Solar in carrying out the terms of this PA.

V. Post-Review Discovery

In the event that Yellow Wood Solar discovers a previously unidentified site within the area of potential effect (APE) that may be eligible for listing in the NRHP that would be affected by the Project, Yellow Wood Solar shall promptly stop work in the immediate vicinity of the site and notify OPSB and SHPO within 24 hours (or as soon as possible) of the discovery.

If Yellow Wood Solar and SHPO concur that the discovered resource is eligible for listing in the NRHP, Yellow Wood Solar will consult with SHPO to evaluate measures that will avoid, minimize, or mitigate any

² Peterson, Ryan, Kaye Grob, and Rachel Kennedy. 2020.

Phase I Cultural Workplan for the Sycamore Creek Solar Energy Project, Cranberry Township, Crawford County, Ohio. Cardno, Inc.

adverse effects. Upon agreement regarding such measures, Yellow Wood Solar shall implement them and notify OPSB of its action.

If Yellow Wood Solar and SHPO cannot reach agreement regarding the eligibility of a post-review discovery, the matter will be referred to OPSB for review. If Yellow Wood Solar and SHPO cannot reach agreement on measures to avoid, minimize, or mitigate adverse effects, the matter shall be referred to OPSB for appropriate action.

If Yellow Wood Solar discovers any human or burial remains during implementation of the Project, Yellow Wood Solar shall cease work immediately, notify SHPO and OPSB, and adhere to applicable state and federal laws regarding the treatment of human or burial remains.

VI. Dispute Resolution

Should any signatory to this PA object to actions proposed herein or dispute the meaning of this PA's terms, the disputing signatory shall serve all other signatories with notice of its objection or dispute and shall consult to resolve the objection or dispute. If the objection or dispute cannot be resolved within 30 days of service of the notice of objection or dispute, then SHPO may make a final decision on the dispute and advise Yellow Wood Solar to proceed accordingly.

VII. Duration, Amendment, and Effect

This PA will continue in full force until December 31, 2021, provided that its cessation shall not affect the continued application of Section V of this PA. At the request of any signatory party, this PA may be reviewed for amendments at any time. This PA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is submitted to SHPO. Execution of this PA by Yellow Wood Solar and SHPO constitutes final concurrence by SHPO for purposes of OPSB review of the Projects' certificate application and implementation of this PA's terms is evidence that Yellow Wood Solar has fulfilled its duties as an applicant with respect to cultural resources under the RC and OAC.

VIII. Counterparts

This PA may be executed in two or more counterparts, each of which shall be deemed to be an original and taken together shall be deemed to be one and the same instrument.

IX. Execution and Electronic Signatures

This PA is not binding upon the signatory parties unless executed in full, and is effective on the last date of signature by the signatory parties.

Any signatory party hereto may deliver a copy of its counterpart signature page to this PA electronically pursuant to RC Chapter 1306. Each signatory party hereto shall be entitled to rely upon an electronic signature of any other signatory party delivered in such a manner as if such signature were an original.

[signatures follow on next page]

**Ohio History Connection
State Historic Preservation Office**



2/8/2021

**Diana Welling
Department Head & Deputy State Historic Preservation Officer for
Resource Protection & Review
Ohio State Historic Preservation Office**

Date

Contact Information

800 E. 17th Ave.
Columbus, Ohio 43211
(614) 298-2000
dwelling@ohiohistory.org

Yellow Wood Solar Energy LLC

Michael Kaplan

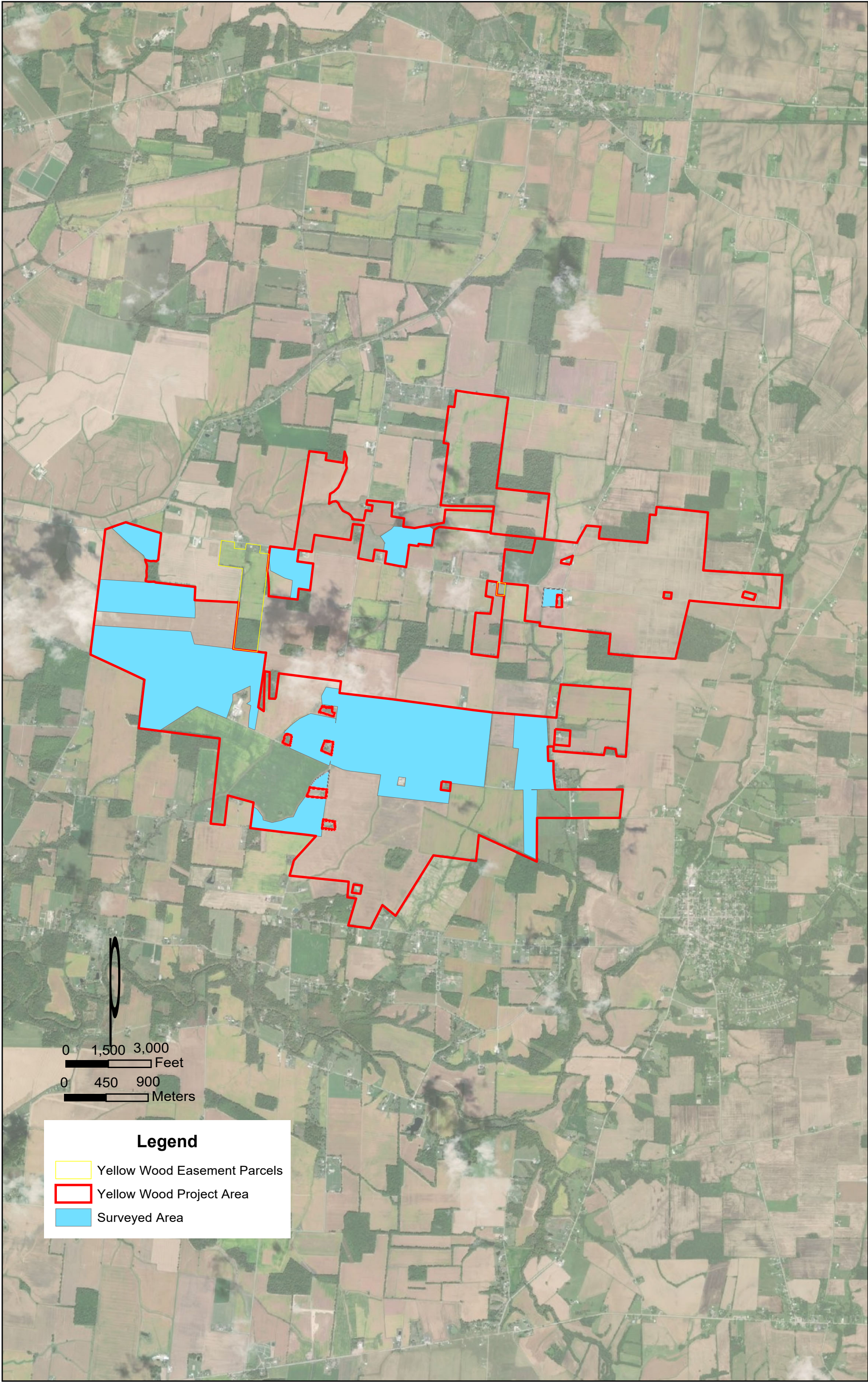
2/3/2021

Michael Kaplan
Vice President
Authorized Signatory
Yellow Wood Solar Energy LLC

Date

Contact Information

One South Wacker Drive
Suite 1800
Chicago, Illinois 60606
(312) 582-1293
mkaplan@invenenergy.com



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

2/24/2021 12:26:02 PM

in

Case No(s). 20-1680-EL-BGN

Summary: Application - 22 of 33 (Exhibit O - Cultural Resources Technical Memorandum)
electronically filed by Christine M.T. Pirik on behalf of Yellow Wood Solar Energy LLC