

Blossom Solar, LLC

Blossom Solar

Exhibit P

Wildlife Report

Case No. 22-0151-EL-BGN

Wildlife Report for the Blossom Solar Project

Blossom Solar, LLC

**Blossom Solar Project
Project No. 132219**

5/2/2022

Wildlife Report for the Blossom Solar Project

prepared for

**Blossom Solar, LLC
Blossom Solar Project
Morrow County, Ohio**

Project No. 132219

5/2/2022

prepared by

**Burns & McDonnell
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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BGEPA	Bald and Golden Eagle Protection Act
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
dbh	Diameter at breast height
DOW	Division of Wildlife
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
IBA	Important Bird Areas
NFHL	National Flood Hazard Layer
NHD	National Hydrography Dataset
NLCD	National Land Cover Database
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
ONHD	Ohio Natural Heritage Database
OPHI	Ohio Pollinator Habitat Initiative
PEM	Palustrine Emergent wetland
PFO	Palustrine Forested wetland
Project	Blossom Solar Project
PSS	Palustrine Scrub Shrub wetland
PUB	Palustrine Unconsolidated Bottom wetland

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
SDA	Soil Data Access
SSURGO	Soil Survey Geographic Database
Survey Area	1,653 acres located in Morrow and Marion Counties, Ohio
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the U.S.

1.0 INTRODUCTION

Burns & McDonnell was retained by Blossom Solar, LLC (Blossom Solar) to provide wildlife literature and field survey services for the proposed Blossom Solar Project (Project) in Morrow County, Ohio (Figures 1.1 and 1.2 in Appendix A). This assessment was to provide the information required for a proposed electric generation facility by Section 4906-5-08(B)(1) of the Ohio Administrative Code, which calls for certain information regarding “ecological resources in the project area.” This assessment includes the following information:

- Provide the results of a literature survey of the plant and animal life within at least 0.25 mile of the project area boundary. The literature survey shall include aquatic and terrestrial plant and animal species that are of commercial or recreational value, or species designated as endangered and threatened.
- Conduct and provide the results of field surveys of the plant and animal species identified in the literature survey.

The Project is bounded to the south by State Route 309 (SR-309) and SR-288, extending west to Iberia Bucyrus Road/SR-100 and north to Crawford-Morrow Line Road/CR-8 just south of Galion, Ohio (Survey Area). The Survey Area is approximately 1,653 acres in size and is located in both Morrow and Marion Counties; However, the Project area footprint was reduced following this survey and is only located within Morrow County.

Burns & McDonnell conducted a literature survey and reviewed available background information for the Survey Area prior to conducting the site visit. Available background information helped to identify locations of potential habitat for listed species and included the following resources:

- Multi-Resolution Land Characteristics Consortium (MRLC) National Land Cover Database 2016 (NLCD, 2016);
- 2019 U.S. Geological Survey (USGS) 7.5-minute topographic map (Galion, OH quadrangle);
- U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) map;
- USGS National Hydrology Dataset (NHD);

- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL, 2009);
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO, 2020) digital data for Morrow and Marion Counties;
- USFWS Information for Planning and Consulting (IPaC) tool;
- Ohio Department of Natural Resources (ODNR) State Listed Animal Species for Morrow and Marion Counties (ODNR, 2020); and
- ODNR State Listed Plant Species for Morrow and Marion Counties (ODNR, 2016)

Burns & McDonnell wildlife and GIS specialists conducted a field survey to identify potential habitat for federal and state listed species present within the Survey Area on April 26-30, 2021. A bat roost tree survey was conducted within forested areas to identify potential roost habitat trees. Potential roost habitat was considered to be present for trees larger than 3 inches in diameter breast height (dbh) when displayed characteristics such as loose or sloughing bark, hollows or crevasses. The Survey Area was also assessed for the presence of potential habitat that could support other species.

This report documents the results of the wildlife literature survey and field survey conducted to identify potential listed species habitat for the Project. Please refer to the Wetland Delineation Report dated October 22, 2021, for detailed information regarding the wetland delineation field survey.

2.0 LAND USE

2.1 MLRC National Land Cover Database

The NLCD and aerial imagery indicate the Survey Area is primarily cultivated crops (75.4 percent) (Figure A-2 in Appendix A). Other common land use within the Survey Area includes hay/pasture (10.6 percent) and deciduous forest (8.9 percent). The areas surrounding the Survey Area are similar in composition, with a higher concentration of developed land to the northeast in Galion, Ohio. Table 1 summarizes the land use types that occur within the Survey Area.

Table 1: Summary of Land Use within the Survey Area

Land Use Type	Acres	Percentage of Survey Area
Cultivated Crops	1,247.24	75.44%
Hay/Pasture	175.59	10.62%
Deciduous Forest	147.41	8.92%
Developed, Open Space	53.19	3.21%
Developed, Low Intensity	16.11	0.97%
Evergreen Forest	5.91	0.36%
Shrub/Scrub	5.78	0.35%
Herbaceous	0.95	0.06%
Woody Wetlands	0.91	0.06%
Open Water	0.20	0.01%
Developed, Medium Intensity	0.05	<0.01%
Total:	1,653.2	100%

2.2 Agricultural Conversion Considerations

Agricultural lands comprise approximately 75% of the Survey Area, as indicated above, which will be converted to a commercial solar farm during construction of the Project. The transformation of agricultural fields to solar development will likely have minimal impacts to protected species habitat. Heavy disturbance due to annual planting and harvesting of row crops provides minimal habitat for wildlife. A commercial solar farm will also provide minimal habitat, however there is no consistent disturbance associated with the development. The solar farm will be planted with native grasses and/or wildflowers underneath the panels, which may provide habitat to animal species that currently utilize the agricultural fields. The combination of planted ground cover and lack of regular disturbance will increase soil stabilization underneath the panels. As a result, there will be less sedimentation and nutrient runoff into waterways that surround the Project compared to the current agricultural land use. This could contribute to

increased stream quality in surrounding waterways that provide potential habitat to aquatic species.

It is our understanding that Blossom Solar, LLC will implement a vegetation management plan during and after construction of the Project. The purpose of the vegetation management plan is to establish vegetative cover, manage invasive species and noxious weeds, and control erosion and sedimentation associated with construction. In smaller areas outside of the fence line and in between panels, vegetation may be planted with native legume and wildflower seed mixes to support the Ohio Pollinator Habitat Initiative (OPHI). This would create habitat for pollinators and benefit surrounding agricultural land through the pollination of cultivated fruits and vegetables. This type of vegetative cover would ultimately provide foraging habitat for insect pollinators and bird species through nectar and seed food sources.

3.0 SOILS AND GEOLOGY

3.1 USDA NRCS Web Soil Survey

The NRCS Web Soil Survey (USDA NRCS 2021a) is generated from the USDA-NRCS certified data (Figure A-3 in Appendix A). The NRCS Soil Data Access (SDA) Hydric Soils List (USDA NRCS 2021b) contains a compilation of all map units with either a major or minor component that is at least in part hydric. As the list includes both major and minor (small) percentages for map units, in some cases most of the map unit may not be hydric. The list is useful in identifying map units that may contain hydric soils. Table 2 summarizes the soil types and hydric rating of soils within the Survey Area.

The NRCS SSURGO digital data indicates that portions of 27 soil map units are located in the Survey Area. Seven of these soil map units are included on local and national hydric soil lists. Soil identified as hydric within the Survey Area is in bold in Table 2.

Table 2: Summary of Soils within the Survey Area

Soil Map Unit Name	Soil Map Unit Symbol	Hydric Rating	Acres
Amanda silt loam, 2 to 6 percent slopes	AdB	5	18.5
Amanda silt loam, 6 to 12 percent slopes, eroded	AdC2	5	79.4
Amanda silt loam, 12 to 18 percent slopes, eroded	AdD2	3	38.0
Bennington silt loam, 0 to 2 percent slopes	BeA	8	313.6
Bennington silt loam, 2 to 6 percent slopes	BeB	6	79.3

Soil Map Unit Name	Soil Map Unit Symbol	Hydric Rating	Acres
Carlisle muck, Central Ohio clayey till plain, 0 to 2 percent slopes	Cb	100	2.9
Centerburg silt loam, 2 to 6 percent slopes	Cen1B1	7	2.0
Condit silt loam, 0 to 1 percent slopes	Co	96	73.1
Cardington silt loam, 2 to 6 percent slopes	Crd1B1	7	404.4
Cardington silt loam, 6 to 12 percent slopes	Crd1C1	4	5.0
Cardington silt loam, 6 to 12 percent slopes, eroded	Crd1C2	4	113.1
Gallman silt loam, loamy substratum, 2 to 6 percent slopes	GaB	2	40.5
Gallman silt loam, loamy substratum, 6 to 12 percent slopes	GaC	0	38.6
Milford silty clay loam, 0 to 2 percent slopes	Mf	93	37.0
Millgrove silt loam	Mg	94	5.4
Pewamo silty clay loam, 0 to 1 percent slopes	Pm	91	34.1
Rittman silt loam, 2 to 6 percent slopes	RsB	0	115.8
Rittman silt loam, 6 to 12 percent slopes	RsC	0	1.4
Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	Sh	8	4.4
Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	Sj	8	1.4
Sleeth silt loam, loamy substratum, 0 to 3 percent slopes	SkA	2	153.1
Sloan silty clay loam, sandy substratum, occasionally flooded	So	97	24.4
Udorthents, loamy	Ud	0	0.1
Water	W	0	2.1
Westland clay loam	We	93	11.0
Wooster silt loam, 6 to 12 percent slopes, eroded	WsC2	4	8.3
Wooster silt loam, 12 to 18 percent slopes, eroded	WsD2	4	11.1
Total:			1,653.3

Bold – listed as hydric on local and national hydric soil lists.

3.2 USFS 7.5-minute Topographic Maps & Geology

The USGS topographic map indicates the Survey Area crosses a generally flat area that slopes to the west (Figure 1.2 in Appendix A). The Survey Area is located within the Central Ohio Clayey Till Plain Physiographic Region of Ohio within the Indiana and Ohio Till Plain Province (Figure A-5 in Appendix A). The Central Ohio Clayey Till Plain is characterized by well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins. A few large streams span the region with limited sand and gravel outwash. Elevation ranges from 700 to 1150 feet with moderate relief (100').

4.0 WETLANDS AND SURFACE WATERS

The USGS NHD and USFWS NWI were reviewed prior to the field survey site visit to identify any potential wetlands and surface waters that may be present within the Survey Area. Wetlands and waters are important because they provide habitat for many species that are adapted to aquatic environments. The USFWS NWI data shows remotely identified wetlands, which may be based on previous aerial imagery interpretation and soil surveys, while the USGS NHD uses digital stream information to identify potential waterways (Figure A-4, Appendix A). The following sections describe the findings of the wildlife literature survey and field survey. Please refer to the Wetland Delineation Report dated October 22, 2021, for detailed information regarding the wetland delineation field survey.

4.1 FEMA Flood Insurance Rate Map (FIRM)

The FEMA FIRM (FEMA, 2009; Figure A-4 in Appendix A) depicts no floodplains or floodways within the Survey Area.

4.2 Site Investigation Results

During the site investigation, a total of 26 wetlands were delineated within the Survey Area for a total of 51.74 acres. All delineated wetlands are potentially connected to Waters of the U.S. (WOTUS). One wetland is considered Category 1 in their preliminary Ohio Rapid Assessment (ORAM) score. Of the 26 wetlands identified, 15 were considered Category 1, and 11 were considered Category 2.

A total of 19 surface waters were identified within the Survey Area during the site investigation for a total of 21,225 linear feet. All surface waters are potentially considered jurisdictional due to their connectivity to WOTUS. Of the 19 surface waters identified, 17 were classified as ephemeral, one was classified as intermittent, and one was classified as perennial.

A total of five constructed ponds were identified within the Survey Area during the site visit for a total of 1.51 acres. These ponds are used as either a water source for agricultural crops or livestock. These ponds appear to be manmade and constructed in upland soils, and therefore, are not considered wetlands. (Figure A-7, Appendix A).

5.0 BIOLOGICAL COMMUNITIES

Burns and McDonnell obtained information on the existing wildlife in the Survey Area from a variety of sources, including publicly available data from Federal and State agencies. Wildlife within the Survey Area could potentially use the area for foraging, migratory stopover, breeding and/or shelter. Based on the current land use, species present in the vicinity of the Survey Area are primarily associated with agricultural fields, open field, forested habitat, and potential wetland and stream areas.

Burns and McDonnell staff observed minimal wildlife during Spring 2021 field survey. Common wildlife species observed included white-tailed deer, red-tailed hawk, American crow, American robin, northern cardinal, blue jay, and European starling. Although not observed, other common species expected to be present in the area include common mammal species such as the raccoon, eastern grey squirrel, opossum, coyote, and common woodland and grassland songbirds.

Major species, as defined by Ohio Administrative Code (OAC) Chapter 4906-17, are those species with recreational or commercial value, or listed as Federal- or State-listed threatened or endangered species. Common game species in northern Ohio include American woodcock (*Scolopax minor*), ring-necked pheasant (*Phasianus colchicus*), ruffed grouse (*Bonasa umbellus*), wild turkey (*Meleagris gallopavo*), mallard (*Anas platyrhynchos*) and other ducks, mourning dove (*Zenaida macroura*), eastern cottontail rabbit (*Sylvilagus floridanus*), eastern gray squirrel (*Sciurus carolinensis*), fox squirrels (*Sciurus niger*), and white-tailed deer (*Odocoileus virginianus*). The project consists primarily of agricultural land with smaller portions of pasture, forest and open herbaceous habitats. Active agriculture is heavily disturbed and unlikely to provide quality habitat for common game species. The greatest impact will be to disturbed areas with reduced impact to forests and other habitat types. A discussion of potential rare, threatened and endangered species is found below.

5.1 Vegetative Community

The vegetation throughout the Survey Area was comprised primarily of agricultural row crops with scattered areas of open field herbaceous habitat and forested habitat. Active agricultural fields were present throughout the majority of the Survey Area. The row crops planted in these areas consisted entirely of soybeans (*Glycine max*) and corn (*Zea mays*). Open field herbaceous

habitat was present in smaller portions throughout the Survey Area. These areas were characterized by fallow fields that were not sowed for crops that year or transitional old fields between deciduous forest and active agriculture. Upland herbaceous vegetation within these areas included golden alexander (*Zizia aurea*), Kentucky bluegrass (*Poa pratensis*), Canada goldenrod (*Solidago canadensis*), meadow garlic (*Allium canadense*), barnyard grass (*Echinochloa crus-galli*), smooth brome (*Bromus inermis*), and black raspberry (*Rubus occidentalis*). Forested habitat was also present throughout the Survey Area in the portions of land not being used for cultivated crops. Multiple woodland locations exist that range in size from approximately 0.5 acres to 17 acres. Common tree species observed in these areas included American beech (*Fagus grandifolia*), silver maple (*Acer saccharinum*), shagbark hickory (*Carya ovata*), northern red oak (*Quercus rubra*), black cherry (*Prunus serotina*), musclewood (*Carpinus caroliniana*), black walnut (*Juglans nigra*), hackberry (*Celtis occidentalis*), and box elder (*Acer negundo*).

5.2 Wildlife

The following sections describe the bird, bald eagle, and bat species that may have suitable habitat or occur within close proximity to the Survey Area. In addition to the hotspots discussed in the Birds section below, two private conservation areas and five City land areas were identified during the desktop review and are depicted north of the Survey Area on Figure A-5 in Appendix A. The two private conservation areas have been identified as maintained golf courses and the five City land properties are small City parks within residential and urban areas. Only one of the private conservation areas/golf course, is located within close proximity to the Survey Area. This golf course could provide habitat to common wildlife species, however, the Project is not expected to impact the golf course.

It is possible that common wildlife species utilize habitat within the Survey Area for foraging, stopover, breeding/nesting and shelter. Typical project construction activities consisting of vehicular traffic and earthmoving could displace wildlife that would use the site; however, it is unlikely given that the Project footprint is situated within primarily active agriculture habitat. Once the Project is constructed wildlife fencing will be used in place of typical chain-link fence to allow smaller animals to pass through the fence and enter the site. Use of wildlife fencing will

maintain connectivity with surrounding habitat types, and allow smaller wildlife to use the site to forage, pursue prey or simply use the site a passage.

5.2.1 Birds

The National Audubon Society Important Bird Areas (IBA) were reviewed to identify essential bird habitat that may occur within the vicinity of the Survey Area. The Ohio IBA Program began in 1999 and documents sites that provide habitat for one or more species of birds that also includes breeding habitat. IBA sites are designated based on four criteria outlined by the program that include areas where rare species of birds are found, areas of rare natural habitats with birds found only in these habitats, areas where large numbers of birds are found, and areas that have longtime studies of birds (Audubon Society of Ohio, 2015). No designated IBA sites are located within the Survey Area or a 2-mile radius surrounding the Survey Area.

The eBird database was also used to identify bird population occurrence within the Survey Area. eBird compiles bird distribution and abundance information through checklist data gathered by birdwatchers throughout the world (eBird, 2021). Five ‘hotspots’ identified in the eBird database are located within a 2-mile radius of the Survey Area and are described below:

- Amick Reservoir is located approximately 0.2 miles north of the Survey Area with 103 bird species that have been observed. No threatened or endangered species have been identified at Amick Reservoir. Two species of concern, the red-headed woodpecker and the American coot, have been documented at Amick Reservoir.
- Amann Reservoir is located approximately 0.5 miles north of the Survey Area with 82 bird species that have been observed. No threatened or endangered species have been identified at Amann Reservoir. One species of concern, the red-headed woodpecker, has been documented at Amann Reservoir.
- Iberia Cemetery is located approximately 0.5 miles south of the Survey Area with 23 bird species that have been observed. No threatened, endangered, or species of concern have been identified at Iberia Cemetery.

- Powers Reservoir is located approximately 1.3 miles northeast of the Survey Area with 67 bird species that have been observed. No threatened, endangered, or species of concern have been identified at Powers Reservoir.
- Galion Bike Path is located approximately 1.7 miles north of the Survey Area with 10 bird species that have been observed. No threatened, endangered, or species of concern have been identified at the Galion Bike Path.

No federal- or state- listed bird species were observed in the Survey Area at the time of the site visit. Due to the lack of federal- or state- listed species that have been identified in ‘hotspots’ surrounding the Survey Area, it is unlikely that threatened or endangered bird species occur within the Survey Area.

5.2.2 Bald Eagles

Bald eagles no longer a state-listed species, however, they are protected under the Bald and Golden Eagle Protection Act (BGEPA), which was established in 1940 and amended in 1962 to include golden eagles. The Act prohibits anyone without a permit from “taking” bald or golden eagles, which includes their feathers, nests, or eggs. No bald eagles were observed at the time of the site visit, however bald eagles have been documented in the Amick Reservoir “hotspot” approximately 0.2 miles to the north of the Survey Area. Additionally, no bald eagle nests were identified within the Survey Area during the field visit.

5.2.3 Bats

According to the ODNr Morrow and Marion County State Listed Animal Species List, there are six species of bat that could be potentially present within the Survey Area. These include the following:

- Northern long-eared bat (*Myotis septentrionalis*) – state endangered and federally endangered
- Big brown bat (*Eptesicus fuscus*) – state species of concern
- Red bat (*Lasiurus borealis*) – state species of concern
- Hoary bat (*Lasiurus cinereus*) – state species of concern

- Little brown bat (*Myotis lucifugus*) – state species of concern
- Tri-colored bat (*Perimyotis subflavus*) – state species of concern

Suitable bat habitat was observed within the Survey Area at the time of the site visit (Figure A-6 in Appendix A). Approximately 73.3 acres of forested area had potential bat habitat and included live trees and/or snags with exfoliating bark, crevices, or hollow cavities. No potential hibernacula were noted as present during the field survey. There are no publicly available records of known bat habitat in the Survey Area or its 0.25 mile buffer. Furthermore, results of the ODNR consultation did not identify any abandoned mines within or surrounding the Project. Natural color photographs of potential bat roost trees identified during the site visit are included in Appendix D. USFWS guidelines indicate that suitable roosting trees should be cut between October 1 and March 31 to avoid impacts to federally listed bat species. If tree clearing is necessary, they should be evaluated for potential suitable habitat. Client has advised Burns & McDonnell that tree clearing activities associated with this project will be conducted between October 1 to March 31 to avoid impacts and adverse effects to bat species.

6.0 RARE, THREATENED, AND ENDANGERED SPECIES

6.1.1 Federally Listed Species

The USFWS IPAC threatened and endangered species lists for Morrow and Marion Counties were reviewed (Appendix B). Summaries of the species identified are included in Table 3. The results from the IPaC are included in Appendix B. The IPaC identified the federally endangered Indiana bat (*Myotis sodalis*) and federally threatened Northern long-eared bat (*Myotis septentrionalis*) as potentially present within the Survey Area. No critical habitat for the Indiana bat is located within the Survey Area. No critical habitat for the Northern long-eared bat has been designated. The IPaC did not identify any birds of particular concern that are listed on the USFWS Birds of Conservation Concern (BCC) list, however the bald eagle (*Haliaeetus leucocephalus*) warrants special attention in this area because of the BGEPA.

Table 3: Federally Threatened and Endangered Species Known or Likely to Occur in Morrow and Marion Counties, Ohio

Common Name	Scientific Name	County	Federal Listing Status	Preferred Habitat
Mammals				
Indiana bat	<i>Myotis sodalis</i>	Marion/Morrow	E	Winter hibernacula includes caves or abandoned mines. Summer roosting habitat includes wooded areas containing dead or dying trees or living trees that have cracks, crevices, and/or exfoliating bark and a diameter-at-breast-height (dbh) of 5 inches or greater. Tend to forage within forest or along forest edges.
Northern long-eared bat	<i>Myotis septentrionalis</i>	Marion/Morrow	T	Breeding habitat may include large undisturbed tracts of open wetlands, wet meadows, pastures, old fields, agricultural lands, shrublands and riparian corridors. Typically use fields and marsh habitat to forage and prefer larger areas.

Source: USFWS IPAC, accessed March 9, 2021, at: <https://ecos.fws.gov/ipac/location/index>.

Federal Listing Status: E – Endangered, T – Threatened

6.1.2 State Listed Species

The ODNR State Listed Animal Species and Plant Species for Morrow and Marion Counties (ODNR, 2020 and ODNR, 2016) were reviewed to identify state threatened or endangered species that may be present within the Survey Area (Appendix B). Summaries of the species identified are included in Table 4.

Table 4: State Threatened and Endangered Species Known or Likely to Occur in Morrow and Marion Counties, Ohio

Common Name	Scientific Name	County	State Listing Status	Preferred Habitat
Mussels				
Snuffbox	<i>Epioblasma triquetra</i>	Marion/Morrow	E	Small- to medium-sized creeks, in areas with a swift current, although it is also found in Lake Erie and some larger rivers. Most of the time, adults are burrowed deep in sand, gravel or cobble substrates, except when they are spawning, or the females are attempting to attract host fish.
Rayed bean	<i>Villosa fabalis</i>	Marion/Morrow	E	Smaller headwater creeks, but is sometimes found in large rivers and wave-washed areas of glacial lakes.
Clubshell	<i>Pleurobema clava</i>	Marion	E	Clean, loose sand and gravel in medium to small rivers and streams.
Ohio pigtoe	<i>Pleurobema cordatum</i>	Marion	E	Medium to large rivers in sand or gravel in areas with moderate flow.
Rabbitsfoot	<i>Theliderma cylindrica</i>	Marion	E	Small to medium sized streams.
Pondhorn	<i>Unio merus tetralasmus</i>	Marion	T	Creeks and upper reaches of larger streams in mud and sand.
Birds				
Upland sandpiper	<i>Bartramia longicauda</i>	Marion	E	Grasslands
American bittern	<i>Botaurus lentiginosus</i>	Marion	E	Freshwater wetlands with tall dense vegetation.

Common Name	Scientific Name	County	State Listing Status	Preferred Habitat
Northern harrier	<i>Circus hudsonius</i>	Marion	E	Breeding habitat may include large undisturbed tracts of open wetlands, wet meadows, pastures, old fields, agricultural lands, shrublands and riparian corridors. Typically use fields and marsh habitat to forage and prefer larger areas.
King rail	<i>Rallus elegans</i>	Marion	E	Freshwater marshes
Sandhill crane	<i>Grus canadensis</i>	Marion/Morrow	T	Freshwater wetlands, including marshes, wet grasslands and river basins.
Trumpeter swan	<i>Cygnus buccinator</i>	Marion	T	Riverine wetlands, lakes, ponds and marshes.
Least bittern	<i>Ixobrychus exilis</i>	Marion	T	Freshwater herbaceous and scrub shrub wetlands with tall and dense vegetation.
Black-crowned night heron	<i>Nycticorax nycticorax</i>	Marion	T	Large wetlands such as swamps, marshes, mud flats and also streams and rivers.
Barn owl	<i>Tyto alba</i>	Morrow	T	Variety of open habitats.
Mammals				
Northern long-eared bat	<i>Myotis septentrionalis</i>	Morrow	E	Winter hibernacula includes caves or abandoned mines. Summer roosting habitat includes wooded areas containing dead or dying trees or living trees that have cracks, crevices, and/or exfoliating bark and a dbh of 3 inches or greater. Tend to forage in forests or along forest edges.
Fish				
Iowa darter	<i>Etheostoma exile</i>	Morrow	E	Vegetated headwaters, creeks, and small to medium rivers.
Lake chubsucker	<i>Erimyzon sucetta</i>	Morrow	T	Lakes, ponds, and swamps in the Great Lakes and the Mississippi River basin.
Plants				
Philadelphia panic grass	<i>Panicum philadelphicum</i>	Marion	E	River shores, sandbars, fields, roadsides, ditches and open woodlands.
Prairie ironweed	<i>Vernonia fasciculata</i>	Marion	E	Full to part sun, average to very wet soils.

Common Name	Scientific Name	County	State Listing Status	Preferred Habitat
Midland sedge	<i>Carex mesochorea</i>	Marion	E	Dry grasslands, fields and roadsides.
Leiberg's panic grass	<i>Dichanthelium leibergii</i>	Marion	T	Moist to dry prairies
Bearded wheat grass	<i>Elymus trachycaulus</i>	Marion	T	Part shade to sun, average to dry sandy or rocky soil, prairies, savanna, dunes, shores, forest openings, rocky slopes, rock outcrops
Greene's rush	<i>Juncus greenei</i>	Marion	T	Dry, sandy sites such as sandplains, sandy road shoulders, dry fields and rock outcrops
Large blazing star	<i>Liatris scariosa</i>	Marion	T	Dry woods and clearings
Royal catchfly	<i>Silene regia</i>	Marion	T	Prairies, savannahs, barrens, open woodlands, usually on well drained rocky soils.
Prairie wedge grass	<i>Sphenopholis obtusata</i> var. <i>obtusata</i>	Marion	T	Mesic prairies, thinly wooded bluffs, open rocky woodlands, and pastures.
Sharp-glumed manna grass	<i>Glyceria acutiflora</i>	Morrow	T	Shores of rivers or lakes and wetland margins.

Source: ODNR 2020. <https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/wildlife/documents-publications/wildlife-plants-county>

State Listing Status: E – Endangered, T – Threatened

The ODNR State Listed Animal and Plant Species also identified 29 species of special concern in Morrow and Marion Counties. These include: eastern cricket frog (amphibian), Henslow's sparrow (bird), grasshopper sparrow (bird), common nighthawk (bird), marsh wren (bird), sedge wren (bird), black-billed cuckoo (bird), northern bobwhite (bird), bobolink (bird), American coot (bird), common gallinule (bird), red-headed woodpecker (bird), vesper sparrow (bird), sora rail (bird), prothonotary warbler (bird), Virginia rail (bird), cerulean warbler (bird), western creek chubsucker (fish), big brown bat (mammal), red bat (mammal), hoary bat (mammal), little brown bat (mammal), tri-colored bat (mammal), badger (mammal), elktoe (mollusk), wavy-rayed lampmussel (mollusk), creek heelsplitter (mollusk), round pigtoe (mollusk), and kidneyshell (mollusk).

Suitable habitat for listed fish and mussel species was searched for at the time of the field survey. Mussels and fish typically prefer streams with free-flowing water, stable banks, and good water quality. One stream (S-18) was identified within the Survey Area that exhibits free-flowing water with stable banks and could serve as potential fish and mussel habitat. S-18 is a named perennial stream (Mud Run) located on the western edge of the Survey Area. This stream is designated as warmwater habitat and is part of a larger drainage network that eventually drains into the Olentangy River. S-18 received a QHEI score of 65, indicating good habitat quality, and could potentially provide habitat for listed fish and/or mussel species. No mussel or fish populations were observed in this stream at the time of the site visit. No relic mussel shells were observed within or adjacent to streams within the Survey Area. ODNR consultation did not note any listed mussel species as potentially present within the Project. The client has advised Burns & McDonnell that no in-water work will be conducted from March 15 to June 30.

For a more detailed assessment, a mussel presence/absence survey may be required.

Many state-listed bird species that occur within Morrow and Marion Counties prefer freshwater wetlands that include both marshes and swamps. Multiple wetlands (W-1, W-12, W-13, W-14, W-16, W-17, W-18, and W-22) identified within the Survey Area consisted of larger portions of emergent wetland area, however, these wetlands are designated as Category 1 lower quality wetlands and are surrounded by active agriculture and minimal buffers to protect from disturbance. As such, it is very unlikely these wetlands would provide potential habitat for state-listed bird species.

State-listed plant species for this Survey Area would be expected to occur within wetlands, streams, and woodlands. Given the constant disturbance of active agriculture, surrounding fallow fields and existing habitat fragmentation, it is unlikely plant species would inhabit areas within the Survey Area.

6.1.3 Agency Consultation

6.1.3.1 U.S. Fish and Wildlife Service

An environmental review letter was submitted to the USFWS on May 10, 2021 to receive consultation on impacts to federally threatened and endangered species. USFWS responded on

May 25, 2021 (Appendix C) and indicated that the Northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) may be present within the Survey Area where suitable habitat occurs. USFWS recommends tree clearing between October 1 and March 31 to avoid impacts to Northern long-eared bats and Indiana bats. If tree clearing must occur outside of this timeframe, presence/absence surveys will need to be conducted to confirm absence of in areas of suitable habitat. The client has advised Burns & McDonnell that tree clearing activities associated with this project will be conducted between October 1 to March 31 to avoid impacts to bat species. USFWS does not anticipate any other adverse effects to federally threatened, endangered, or sensitive species.

USFWS, in partnership with the Ohio Pollinator Habitat Initiative (OPHI), provided an Ohio Solar Site Pollinator Habitat Planning and Assessment Form to enhance pollinator habitat at solar power installations. USFWS recommends planting legumes and wildflowers instead of non-native grasses between solar panels to benefit pollinators. The recommended legumes and wildflowers provided in the form are low-growing and would minimize shadows throughout the solar facility. The USFWS environmental review response letter and Ohio Solar Site Pollinator Habitat Planning and Assessment Form are included in Appendix C.

6.1.3.2 Ohio Department of Natural Resources

An environmental review letter was submitted to the ODNR on May 10, 2021 to receive consultation on impacts to state threatened and endangered species. ODNR responded on June 24, 2021 (Appendix C) with comments based on an interdisciplinary review with input from the Ohio Natural Heritage Database (ONHD), the Division of Wildlife (DOW), and the Division of Water Resources (DWR).

The ONHD conducted a review of state threatened or endangered plant and animal species within a one-mile radius of the Survey Area. According to the ONHD, no records of state threatened or endangered species are present within one-mile of the Survey Area. There are also no records of state species of special interest or state species of concern. Lastly, no records exist for any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the Survey Area.

The DOW recommends that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The DOW indicates that the entire state of Ohio is within the range of the state endangered and federally threatened Indiana bat (*Myotis sodalis*), the state endangered and federally threatened northern long-eared bat (*Myotis septentrionalis*), the state endangered little brown bat (*Myotis lucifugus*), and the state endangered tricolored bat (*Perimyotis subflavus*). If suitable habitat is present and trees must be cut within the Survey Area, the DOW recommends cutting only occur from October 1 to March 31. If tree removal must occur during the summer months, the DOW recommends that mist net surveys or acoustic survey be conducted from June 1 to August 15 prior to any tree cutting. The client has advised Burns & McDonnell that tree clearing activities associated with this project will be conducted between October 1 to March 31 to avoid impacts and adverse effects to bat species. Therefore, no summer and/or potential hibernacula surveys are recommended.

According to the DOW, the Survey Area is also within the range of the state endangered fish, the Iowa darter (*Etheostoma exile*), and the state threatened fish, the lake chubsucker (*Erimyzon sucetta*). The DOW recommends that no in-water work occur in perennial stream from March 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. The client has advised Burns & McDonnell that no in-water work will be conducted from March 15 to June 30.

The DOW also commented that the Survey Area is within the range of the state threatened sandhill crane (*Grus canadensis*). This species primarily utilizes wetland areas and roosts in shallow, standing water or moist bottomlands. The DOW recommends that if grassland, prairie, or wetland habitat will be impacted, construction in these areas should be avoided during the species' nesting period of April 1 through August 31. No grassland or prairie habitats were identified within the Survey Area.

The DWR recommends that the local floodplain administrator be contacted for the possible need of any floodplain approvals or permits for this project. No floodplains or floodways were identified within the Survey Area.

7.0 SUMMARY

Burns & McDonnell conducted a wildlife literature and field survey of the Survey Area to identify potential federal and state listed species habitat and common species. The Survey Area was comprised primarily of agricultural row crops with scattered areas of open field herbaceous habitat and forested habitat. Active agricultural fields were present throughout the majority of the Survey Area with a low likelihood of listed species habitat in these areas. Common wildlife species were observed during the environmental field survey. Common game species are known to occur in northern Ohio. Some of these species may use the area for foraging, stopover, breeding and/or shelter; however, it is unlikely these species would be impacted by the project as the project consists primarily of active agricultural land. Active agriculture is heavily disturbed and unlikely to provide quality habitat for common wildlife and game species.

Suitable habitat for the Northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*) was observed within the Survey Area at the time of the site visit. Approximately 73.3 acres of forested area had potential bat habitat and included live trees and/or snags with exfoliating bark, crevices, or hollow cavities. No potential hibernacula were noted as present during the field survey. There are no publicly available records of known bat habitat in the Survey Area or its 0.25 mile buffer. Furthermore, results of the ODNR consultation did not identify any abandoned mines within or surrounding the Project. USFWS recommends tree clearing between October 1 and March 31 to avoid impacts to Northern long-eared bats and Indiana bats. If tree clearing must occur outside of this timeframe, presence/absence surveys will need to be conducted to confirm absence of in areas of suitable habitat. The client advised Burns & McDonnell that tree clearing activities associated with this project will be conducted between October 1 to March 31 to avoid impacts and adverse effects to bat species.

Many state-listed bird species that occur within Morrow and Marion Counties prefer freshwater wetlands that include both marshes and swamps. Multiple wetlands (W-1, W-12, W-13, W-14, W-16, W-17, W-18, and W-22) identified within the Survey Area consisted of larger portions of emergent wetland area, however, these wetlands are designated as Category 1 lower quality wetlands and are surrounded by active agriculture and minimal buffers to protect from

disturbance. As such, it is very unlikely these wetlands would provide potential habitat for state-listed bird species.

State-listed plant species for this Survey Area would be expected to occur within wetlands, streams, and woodlands. Given the constant disturbance of active agriculture, surrounding open field herbaceous habitat and existing habitat fragmentation, it is unlikely plant species would inhabit areas within the Survey Area.

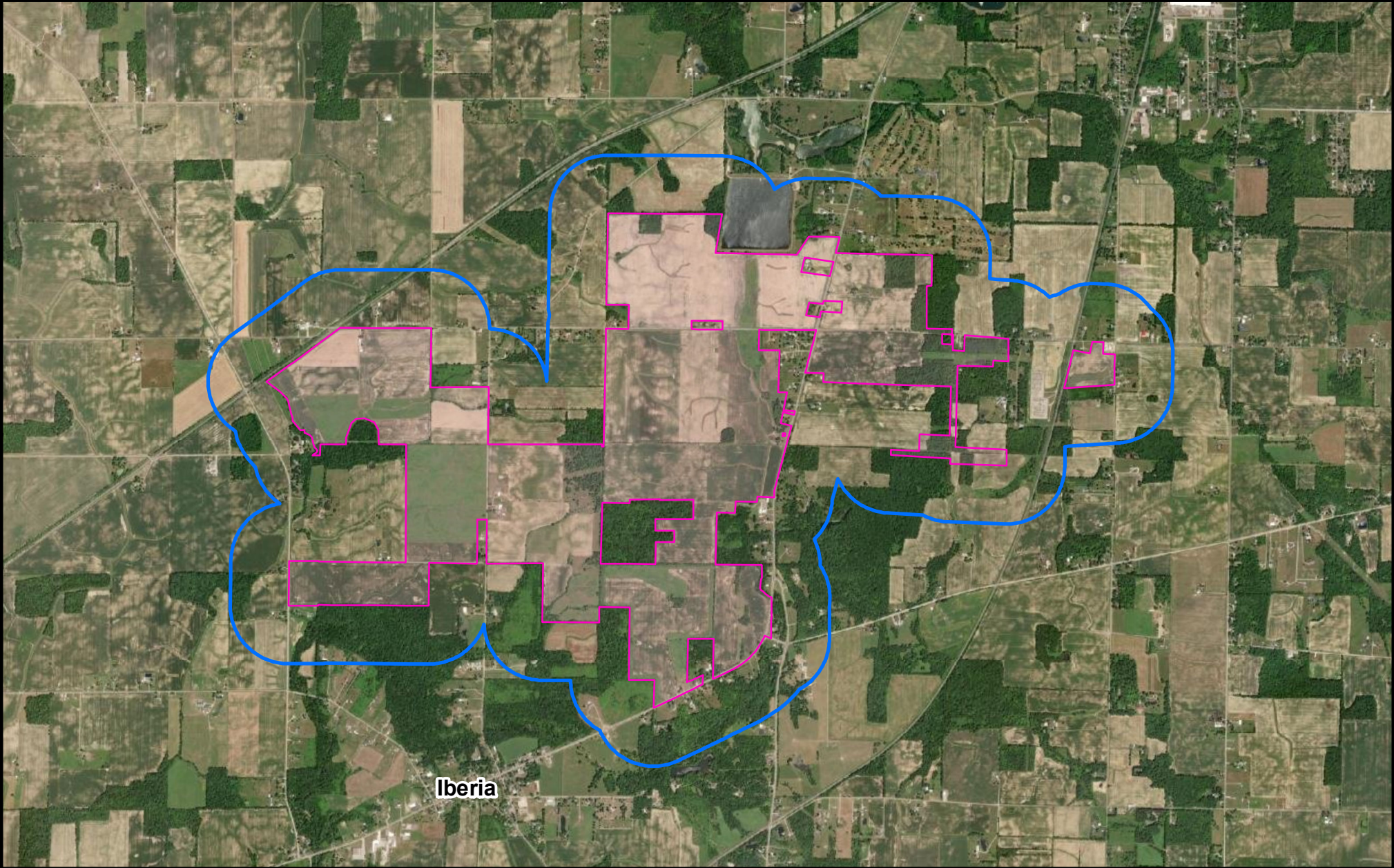
A total of 26 wetlands, 19 surface waters and five constructed ponds were identified within the Survey Area during the site investigation. Many of the federal and state listed species utilize wetlands and surface waters for their preferred habitat. The Project is located within primarily active agricultural with lesser amounts of forested habitat. It is unlikely federal- and state-listed threatened and endangered species would inhabit the site. Furthermore, the project proposes to avoid and minimize impacts to wetlands, streams, waters of the U.S. and forested habitat thus reducing and/or avoiding impacts to natural resources and listed species to the maximum extent practicable.




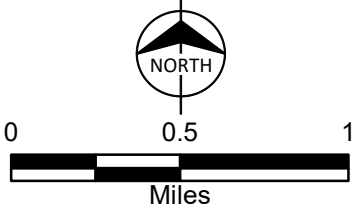

8.0 REFERENCES

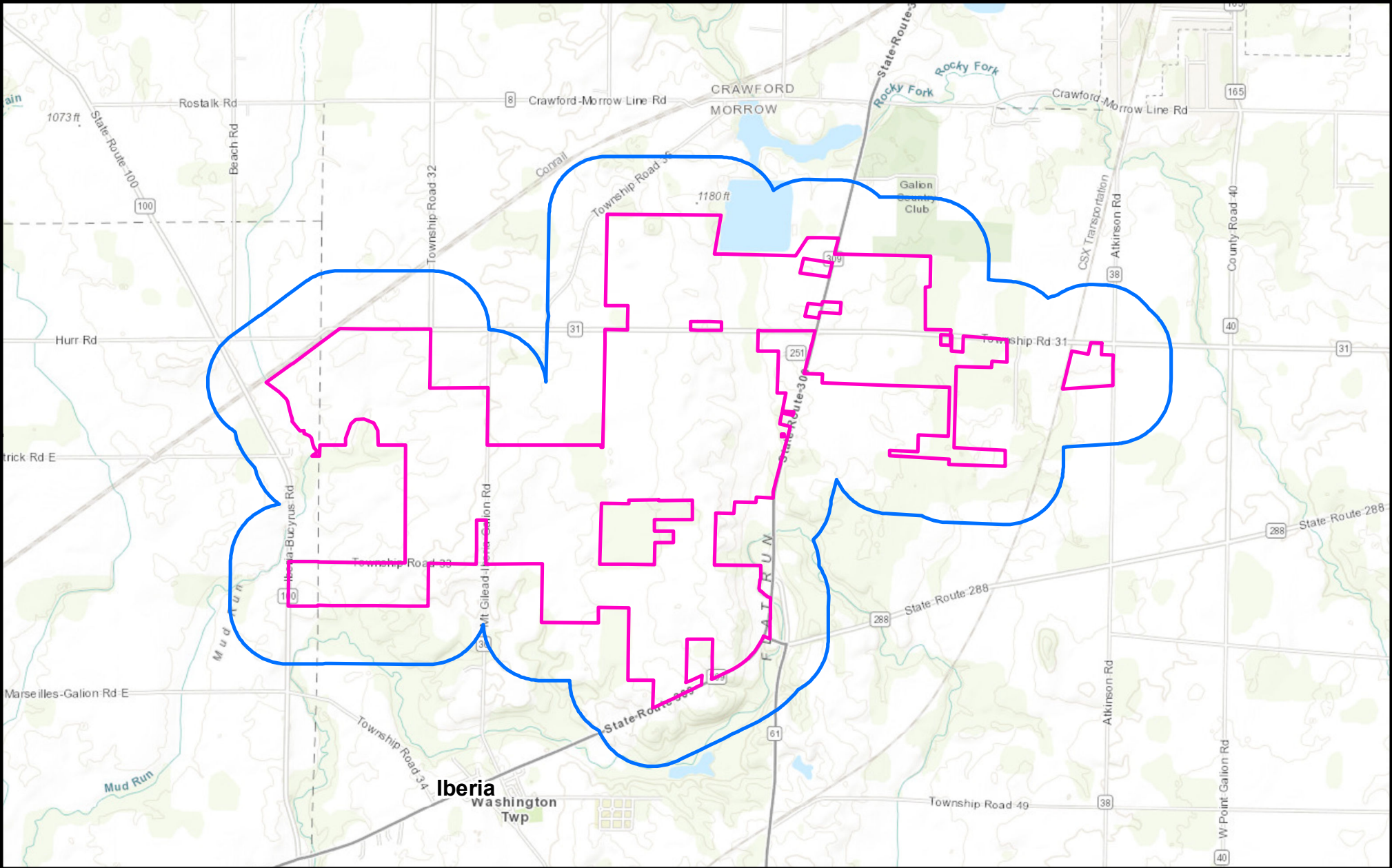
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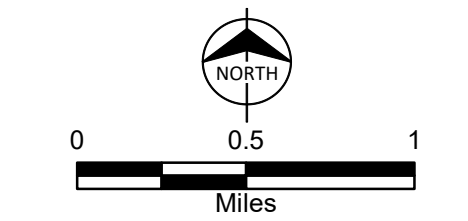

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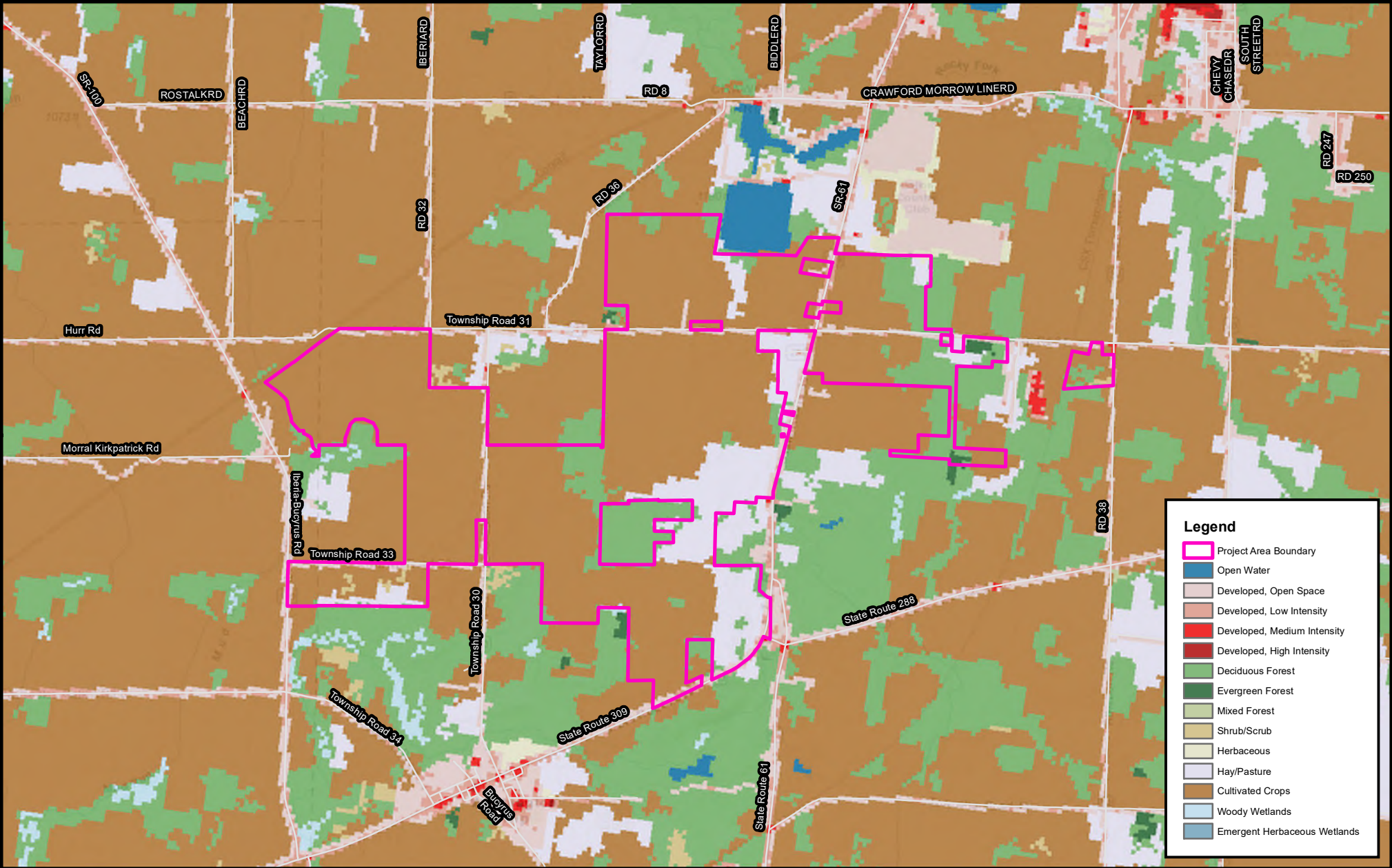
APPENDIX A – FIGURES





<p> Project Area Boundary</p> <p> 0.25-Mile Buffer</p>		 <p>0 0.5 1 Miles</p>		<p>Figure 1.1 Aerial Overview Map Blossom Solar Project Morrow County, Ohio</p>
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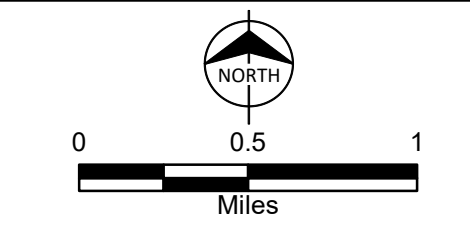


<p> Project Area Boundary</p> <p> 0.25-Mile Buffer</p>				<p>Figure 1.2 Project Overview Map Blossom Solar Project Morrow County, Ohio</p>
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 Project Area Boundary






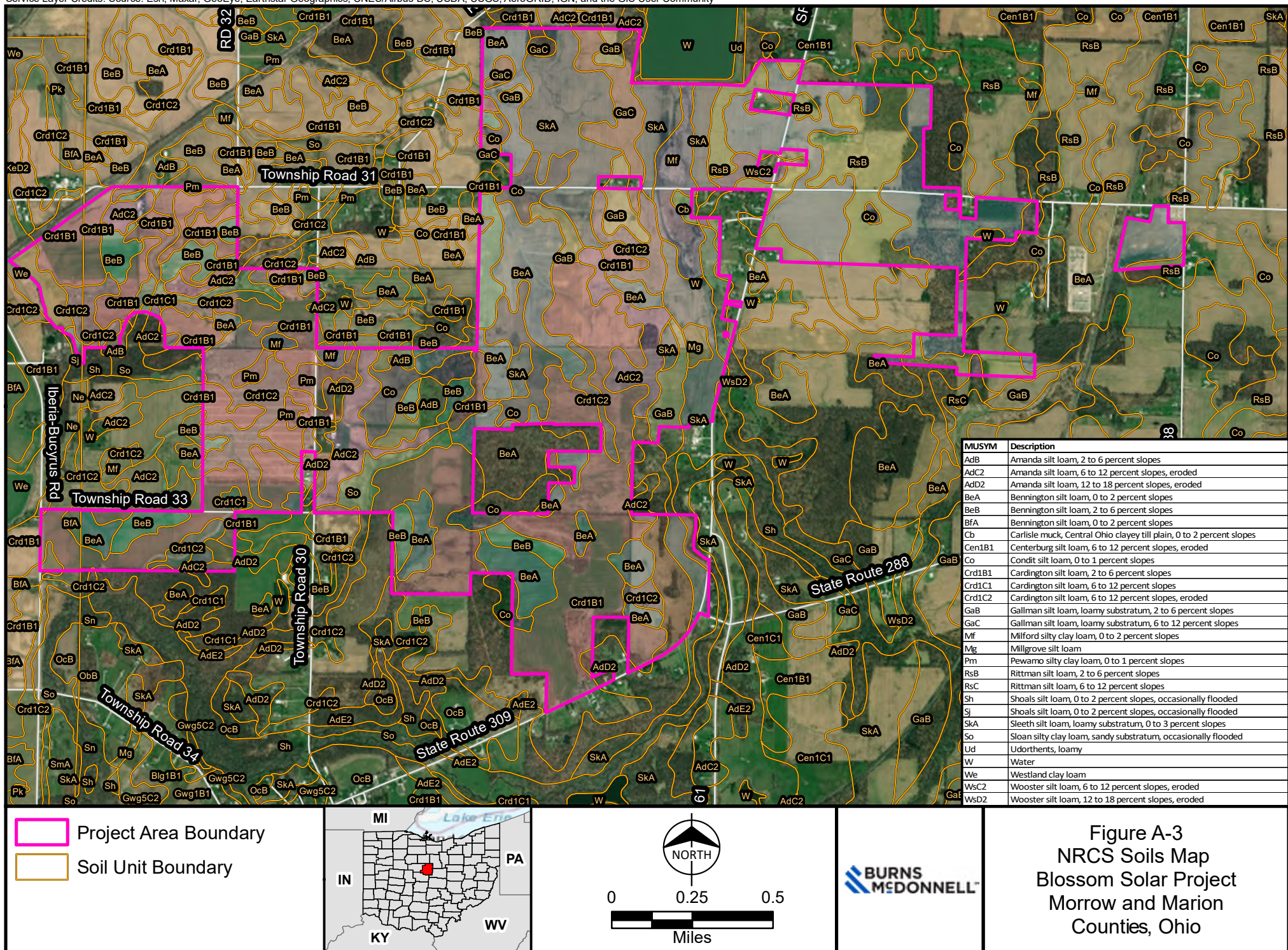


Figure A-2
Land Use Map
Blossom Solar Project
Morrow and Marion
Counties, Ohio



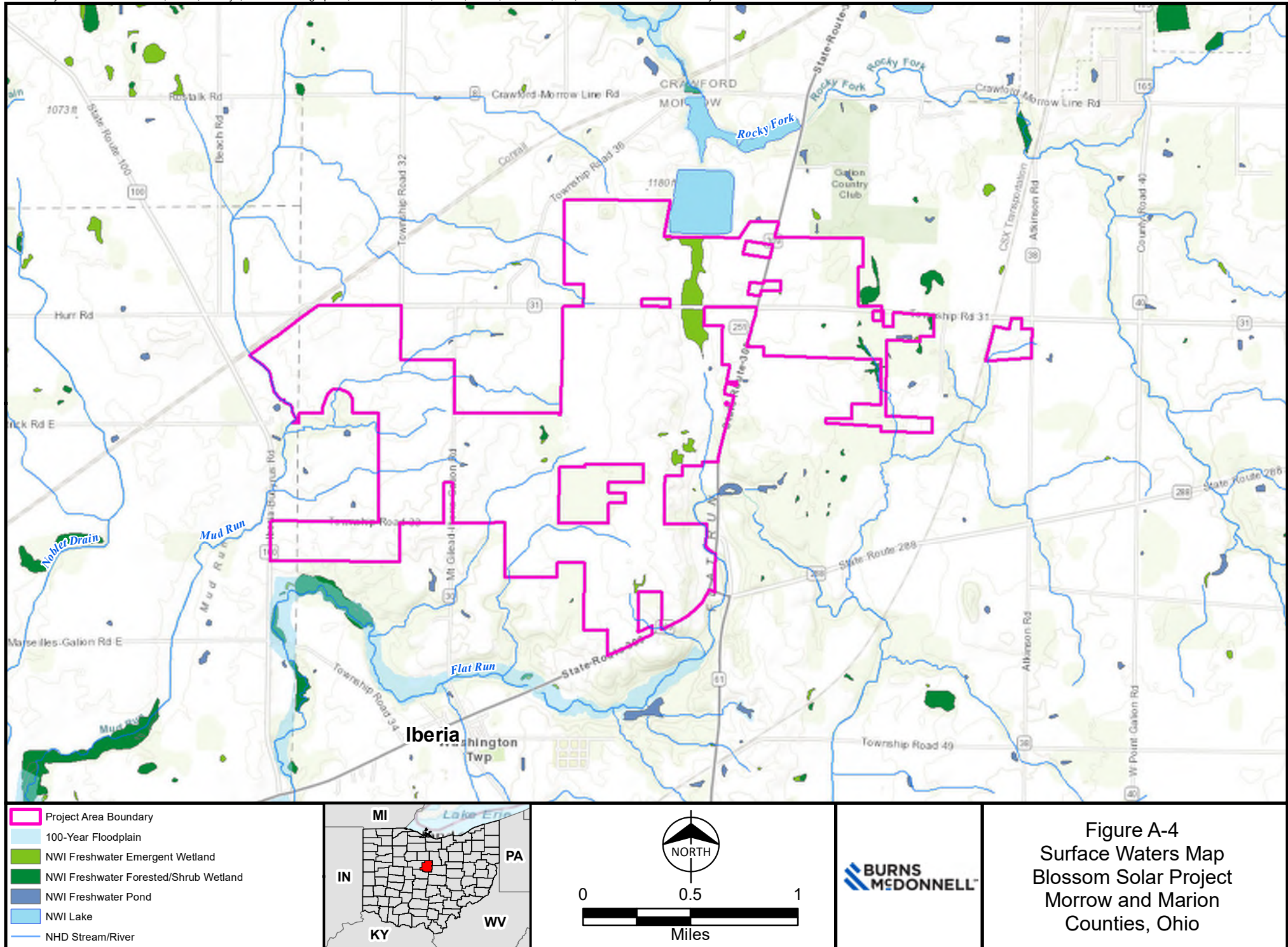
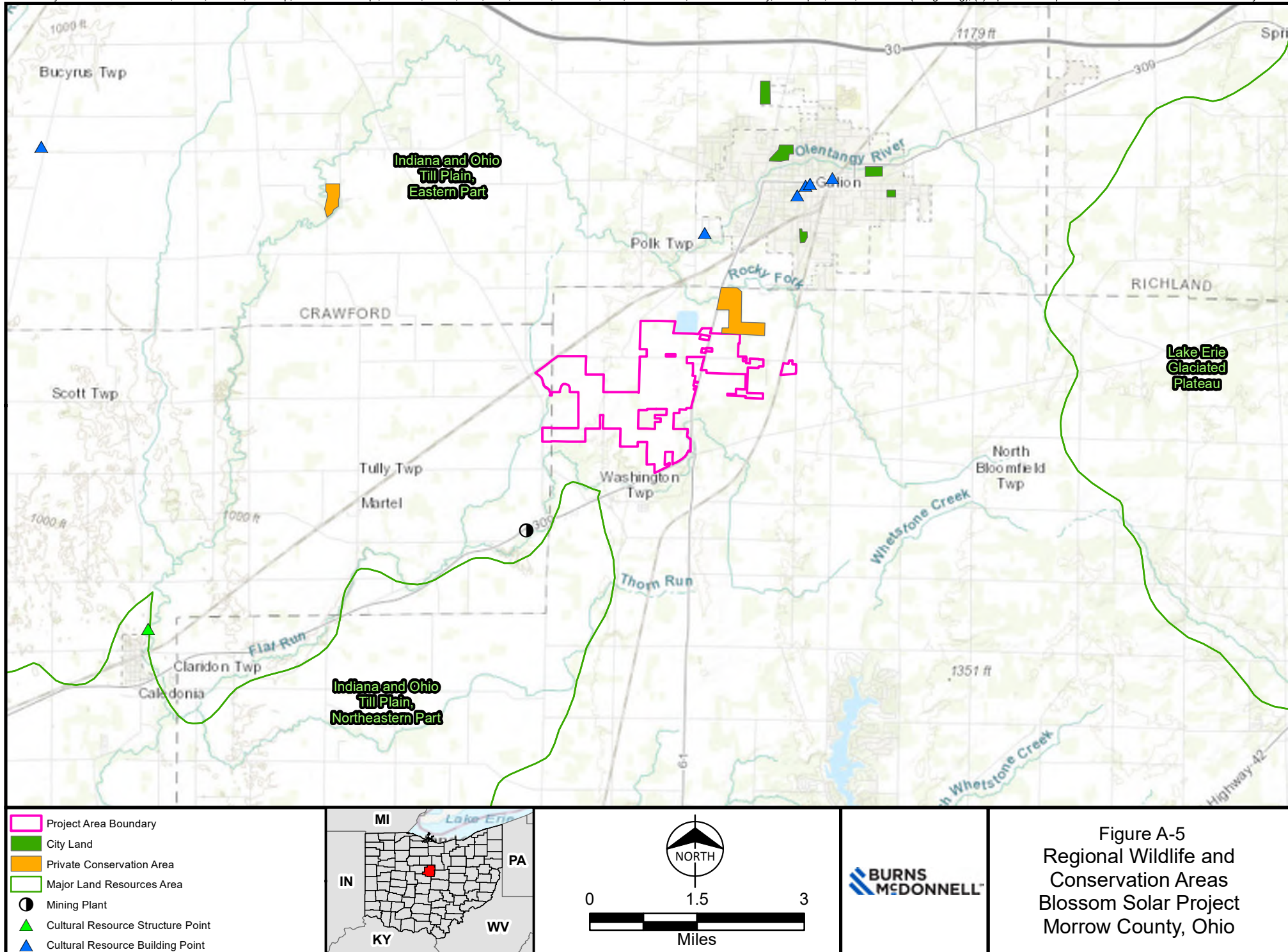
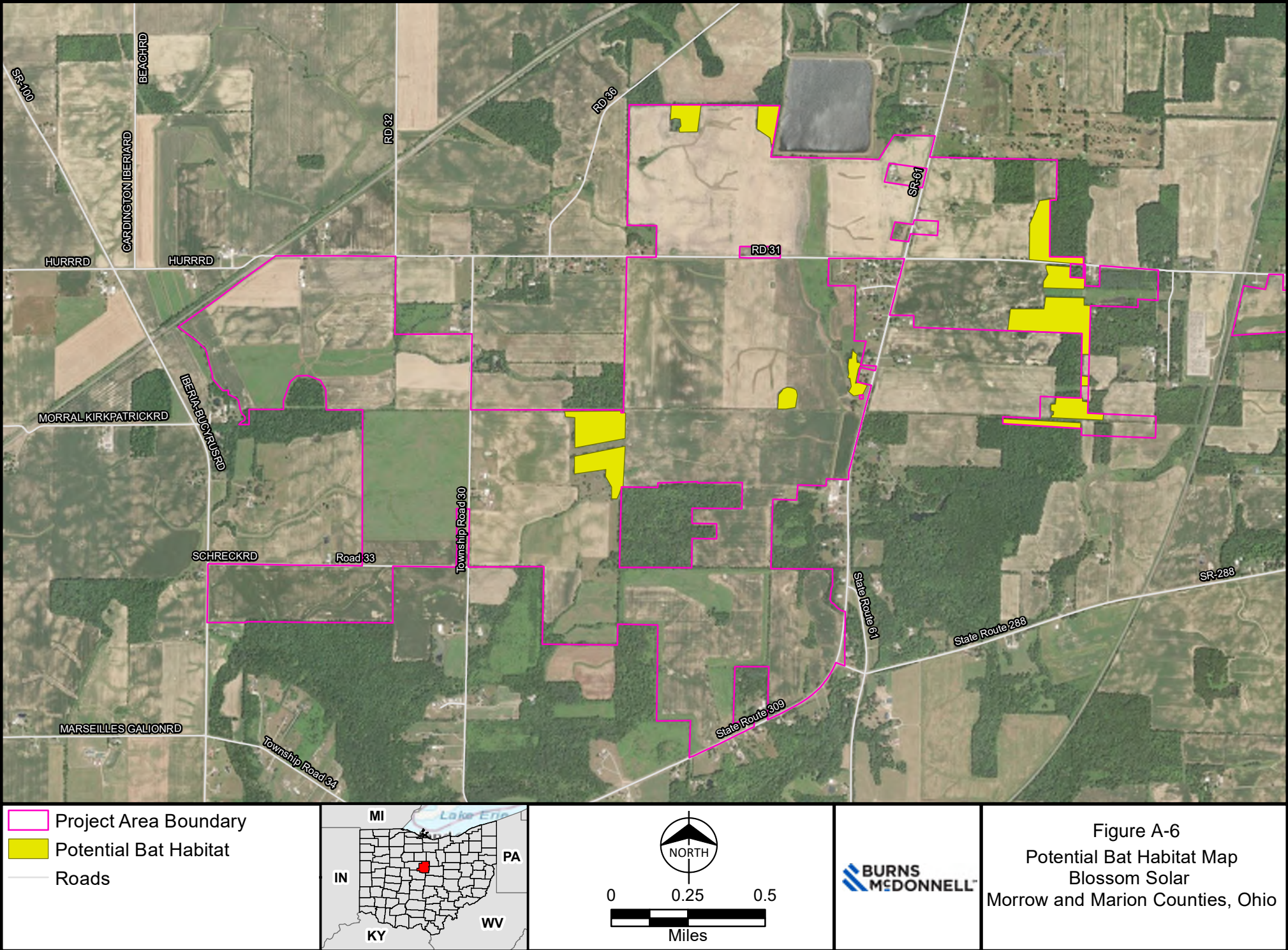
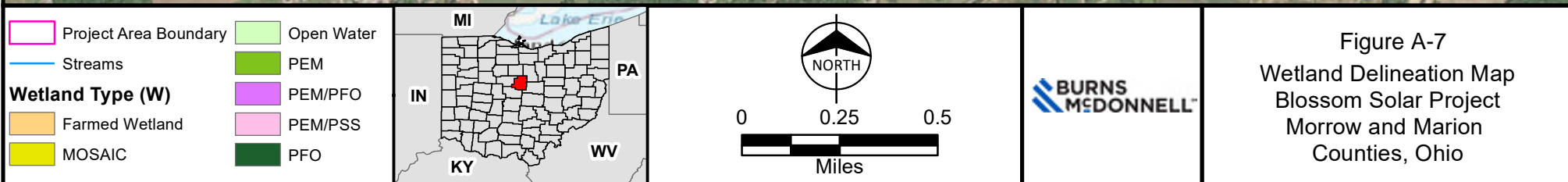
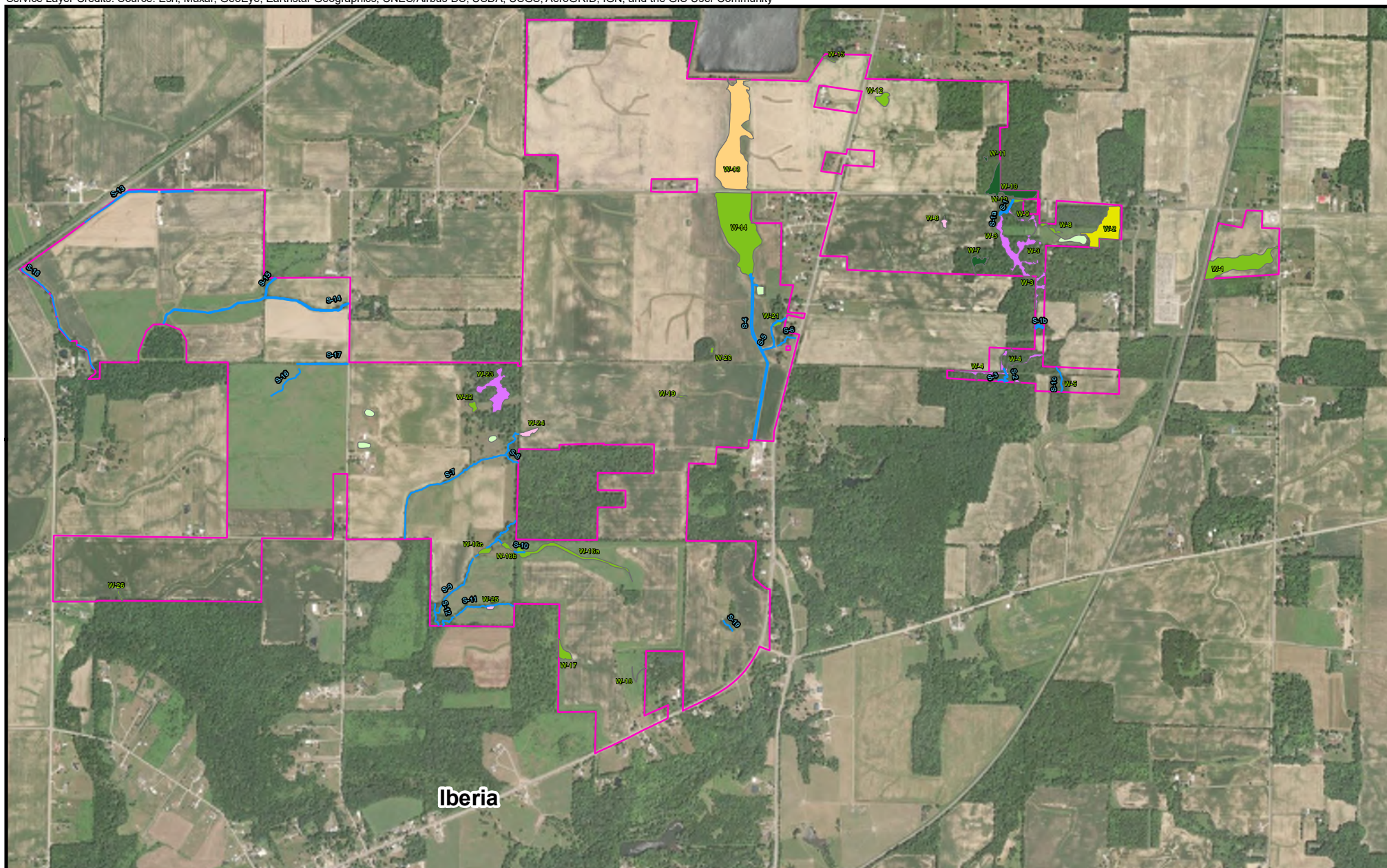


Figure A-4
 Surface Waters Map
 Blossom Solar Project
 Morrow and Marion
 Counties, Ohio







APPENDIX B – RARE, THREATENED, AND ENDANGERED SPECIES

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morrow County, Ohio



Local office

Ohio Ecological Services Field Office

☎ (614) 416-8993

📠 (614) 416-8994

4625 Morse Road, Suite 104
Columbus, OH 43230-8355

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Indiana Bat *Myotis sodalis***Endangered**

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5949>

Northern Long-eared Bat *Myotis septentrionalis***Threatened**

Wherever found

This species only needs to be considered if the following condition applies:

- Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at <https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html>

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1Cd](#)

[PEM1A](#)

[PEM1B](#)

[PEM1C](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

[PFO1C](#)

FRESHWATER POND

[PUBGh](#)

[PUBGx](#)

[PUBFh](#)

RIVERINE

[R4SBC](#)

[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Morrow County State Listed Animal Species

Common Name	Scientific Name	Group	State Status	Federal Status
Iowa Darter	<i>Etheostoma exile</i>	Fish	Endangered	
Snuffbox	<i>Epioblasma triquetra</i>	Mollusk	Endangered	Endangered
Rayed Bean	<i>Villosa fabalis</i>	Mollusk	Endangered	Endangered
Sandhill Crane	<i>Grus canadensis</i>	Bird	Threatened	
Barn Owl	<i>Tyto alba</i>	Bird	Threatened	
Lake Chubsucker	<i>Erimyzon sucetta</i>	Fish	Threatened	
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Mammal	Threatened	Threatened
Eastern Cricket Frog	<i>Acris crepitans crepitans</i>	Amphibian	Species of Concern	
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Bird	Species of Concern	
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Bird	Species of Concern	
Northern Bobwhite	<i>Colinus virginianus</i>	Bird	Species of Concern	
Bobolink	<i>Dolichonyx oryzivorus</i>	Bird	Species of Concern	
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Bird	Species of Concern	
Vesper Sparrow	<i>Pooecetes gramineus</i>	Bird	Species of Concern	
Sora Rail	<i>Porzana carolina</i>	Bird	Species of Concern	
Prothonotary Warbler	<i>Protonotaria citrea</i>	Bird	Species of Concern	
Cerulean Warbler	<i>Setophaga cerulea</i>	Bird	Species of Concern	
Western Creek Chubsucker	<i>Erimyzon claviformis</i>	Fish	Species of Concern	
Big Brown Bat	<i>Eptesicus fuscus</i>	Mammal	Species of Concern	
Red Bat	<i>Lasiurus borealis</i>	Mammal	Species of Concern	



Common Name	Scientific Name	Group	State Status	Federal Status
Hoary Bat	Lasiurus cinereus	Mammal	Species of Concern	
Little Brown Bat	Myotis lucifugus	Mammal	Species of Concern	
Tri-colored Bat	Perimyotis subflavus	Mammal	Species of Concern	
Badger	Taxidea taxus	Mammal	Species of Concern	
Wavy-rayed Lampmussel	Lampsilis fasciola	Mollusk	Species of Concern	
Creek Heelsplitter	Lasmigona compressa	Mollusk	Species of Concern	
Round Pigtoe	Pleurobema sintoxia	Mollusk	Species of Concern	
Kidneyshell	Ptychobranchus fasciolaris	Mollusk	Species of Concern	
Veery	Catharus fuscescens	Bird	Special Interest	
Purple Finch	Haemorhous purpureus	Bird	Special Interest	
Blue-headed Vireo	Vireo solitarius	Bird	Special Interest	
Blacknose Shiner	Notropis heterolepis	Fish	Extirpated	



Morrow County

Scientific Name	Common Name	Last Observed	State Status	Federal Status
<i>Cardamine dissecta</i>	Narrow-leaved Toothwort	1996-04-25	P	
<i>Glyceria acutiflora</i>	Sharp-glumed Manna Grass	1962-06-07	T	
<i>Platanthera psycodes</i>	Small Purple Fringed Orchid	1989-08-02	P	
<i>Scirpus expansus</i>	Woodland Bulrush	2000-08-10	P	



Ohio Division of Wildlife
 Ohio Natural Heritage Database
 Date Accessed: March 6, 2015
 Status based on 2014-15 Rare Plant List.

Status:

X = Extirpated

E = Endangered

T = Threatened

P = Potentially Threatened

List Created: July 2016



Marion County

Scientific Name	Common Name	Last Observed	State Status	Federal Status
<i>Baptisia lactea</i>	Prairie False Indigo	2009-10-05	P	
<i>Carex atherodes</i>	Wheat Sedge	1993-06	P	
<i>Carex mesochorea</i>	Midland Sedge	1988-06-20	T	
<i>Dichanthelium leibergii</i>	Leiberg's Panic Grass	1995-06-17	T	
<i>Eleocharis compressa</i>	Flat-stemmed Spike-rush	1998-06-04	P	
<i>Elymus trachycaulus</i>	Bearded Wheat Grass	1952-07-10	T	
<i>Juncus greenei</i>	Greene's Rush	2005-06-10	T	
<i>Liatris scariosa</i>	Large Blazing-star	2009-10-05	T	
<i>Panicum philadelphicum</i>	Philadelphia Panic Grass	1952	E	
<i>Prenanthes racemosa</i>	Prairie Rattlesnake-root	2009-10-05	P	
<i>Silene regia</i>	Royal Catchfly	2010-07-06	T	
<i>Sphenopholis obtusata</i> var. <i>obtusata</i>	Prairie Wedge Grass	1952-06-07	T	
<i>Vernonia fasciculata</i>	Prairie Ironweed	2011-08-10	E	



Ohio Division of Wildlife
 Ohio Natural Heritage Database
 Date Accessed: March 6, 2015
 Status based on 2014-15 Rare Plant List.

Status:

X = Extirpated

E = Endangered

T = Threatened

P = Potentially Threatened

List Created: July 2016

Marion County State Listed Animal Species

Common Name	Scientific Name	Group	State Status	Federal Status
Upland Sandpiper	<i>Bartramia longicauda</i>	Bird	Endangered	
American Bittern	<i>Botaurus lentiginosus</i>	Bird	Endangered	
Northern Harrier	<i>Circus hudsonius</i>	Bird	Endangered	
King Rail	<i>Rallus elegans</i>	Bird	Endangered	
Snuffbox	<i>Epioblasma triquetra</i>	Mollusk	Endangered	Endangered
Clubshell	<i>Pleurobema clava</i>	Mollusk	Endangered	Endangered
Ohio Pigtoe	<i>Pleurobema cordatum</i>	Mollusk	Endangered	
Rabbitsfoot	<i>Theliderma cylindrica</i>	Mollusk	Endangered	Threatened
Rayed Bean	<i>Villosa fabalis</i>	Mollusk	Endangered	Endangered
Trumpeter Swan	<i>Cygnus buccinator</i>	Bird	Threatened	
Sandhill Crane	<i>Grus canadensis</i>	Bird	Threatened	
Least Bittern	<i>Ixobrychus exilis</i>	Bird	Threatened	
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	Bird	Threatened	
Pondhorn	<i>Unio merus tetralasmus</i>	Mollusk	Threatened	
Eastern Cricket Frog	<i>Acris crepitans crepitans</i>	Amphibian	Species of Concern	
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Bird	Species of Concern	
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Bird	Species of Concern	
Common Nighthawk	<i>Chordeiles minor</i>	Bird	Species of Concern	
Marsh Wren	<i>Cistothorus palustris</i>	Bird	Species of Concern	
Sedge Wren	<i>Cistothorus platensis</i>	Bird	Species of Concern	



Common Name	Scientific Name	Group	State Status	Federal Status
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	Bird	Species of Concern	
Northern Bobwhite	<i>Colinus virginianus</i>	Bird	Species of Concern	
Bobolink	<i>Dolichonyx oryzivorus</i>	Bird	Species of Concern	
American Coot	<i>Fulica americana</i>	Bird	Species of Concern	
Common Gallinule	<i>Gallinula galeata</i>	Bird	Species of Concern	
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Bird	Species of Concern	
Vesper Sparrow	<i>Pooecetes gramineus</i>	Bird	Species of Concern	
Sora Rail	<i>Porzana carolina</i>	Bird	Species of Concern	
Prothonotary Warbler	<i>Protonotaria citrea</i>	Bird	Species of Concern	
Virginia Rail	<i>Rallus limicola</i>	Bird	Species of Concern	
Western Creek Chubsucker	<i>Erimyzon claviformis</i>	Fish	Species of Concern	
Badger	<i>Taxidea taxus</i>	Mammal	Species of Concern	
Elktoe	<i>Alasmodonta marginata</i>	Mollusk	Species of Concern	
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Mollusk	Species of Concern	
Creek Heelsplitter	<i>Lasmigona compressa</i>	Mollusk	Species of Concern	
Round Pigtoe	<i>Pleurobema sintoxia</i>	Mollusk	Species of Concern	
Northern Shoveler	<i>Anas clypeata</i>	Bird	Special Interest	
Redhead	<i>Aythya americana</i>	Bird	Special Interest	
Brown Creeper	<i>Certhia americana</i>	Bird	Special Interest	
Least Flycatcher	<i>Empidonax minimus</i>	Bird	Special Interest	
Purple Finch	<i>Haemorhous purpureus</i>	Bird	Special Interest	
Ruddy Duck	<i>Oxyura jamaicensis</i>	Bird	Special Interest	



Common Name	Scientific Name	Group	State Status	Federal Status
Red-breasted Nuthatch	<i>Sitta canadensis</i>	Bird	Special Interest	



APPENDIX C – AGENCY COORDINATION

Harrison, Brooke

From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, May 25, 2021 3:57 PM
To: Harrison, Brooke
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate; Doug Herling; Keck, Katherine
Subject: Blossom Solar, Morrow and Marion Counties, Ohio
Attachments: Ohio Solar Site Pollinator Habitat Planning and Assessment Form v.9 FINAL_5_3_2018.pdf

Follow Up Flag: Follow up
Flag Status: Flagged



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2021-TA-1404

Dear Ms. Harrison,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing

is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

POLLINATOR COMMENTS:

The Service is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife instead of non-native grass. Pollinators are beneficial to agricultural communities like the project area because they pollinate many varieties of fruits and vegetables. The recommended legumes and forbs are short (low-growing) so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should allow the project proponent to minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators

(e.g., monarch butterfly and the federally listed rusty patched bumblebee) while reducing storm water runoff, standing water, and erosion. Native plants can act as host plants for insect larva while flowering plants provide nectar sources for adult butterflies as well as other pollinators such as hummingbirds. Seeds from these plants can also provide food for a wide variety of bird species. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

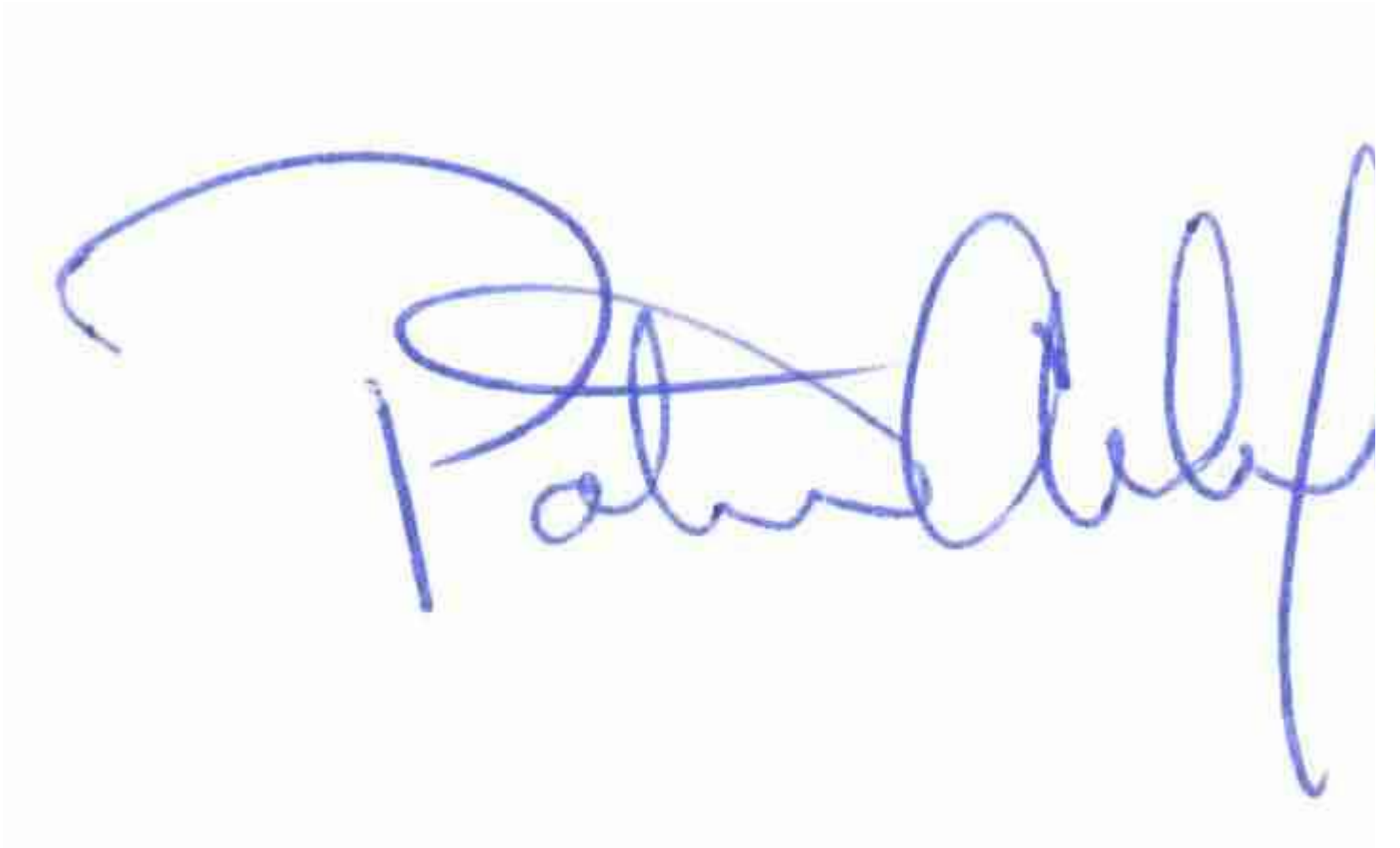
Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice Ashfield". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Ohio Solar Site Pollinator Habitat Planning and Assessment Form

1. Percent of total site planted with native or beneficial introduced flowering plants.

25-50%	10 points
51-75%	20 points
76-100%	30 points

2. Flowering plant diversity in site perimeter & buffer area (species with more than 1% cover).

9-12 species	5 points
13-16 species	10 points
17-20 species	15 points
20+ species	20 points
Site specific Milkweed included @2,000 pls/ac minimum	10 points

* If no boxes were selected in questions 1 or 2 then your site does not meet criteria to be considered as an OPHI Solar Pollinator Habitat. However, OPHI can work with you on ways to increase the pollinator score of your site.

3. Flowering plant seed mixes and plantings to be used.

Native species local to the site are preferred; otherwise species native to Ohio are encouraged.

Includes only native plant species	15 points
Includes native and beneficial introduced plant species	10 points
Includes only beneficial introduced plant species	5 points

4. Flowering plant diversity in rows & under solar array.

4-6	5 points
7+	10 points
Site specific Milkweed included @2,000 pls/ac minimum	10 points

5. Seasons with at least 3 blooming species. Check all that apply.

Spring (April – May)	5 points
Summer (June – August)	5 points
Fall (September – October)	5 points

6. Available habitat components within ¼ mile of site.

Check all that apply.

Native grasses	2 points
Trees and shrubs	2 points
Forest edge habitat	2 points
Cavity nesting sites	2 points
Clean perennial water sources	2 points

7. Planned vegetative buffers adjacent to the solar site. Check all that apply.

Site has planned buffer adjacent to solar site	5 points
Buffer is at least 30 feet wide as measured from array fencing or edge of flower plantings	5 points
Buffer is at least 50 feet wide as measured from array fencing or edge of flower plantings	10 points
Buffer includes flowering Shrubs/trees and other shrubs/trees that provide food for wildlife	5 points

8. Habitat site preparation prior to implementation.

Measures taken to control weeds and invasive species prior to seeding/planting.	10 points
Appropriate soil preparation done to reduce erosion	
And enhance germination/growth	5 points
None	-10 points

9. Planned management practices for areas designated as part of the pollinator habitat site. Check all that apply.

Detailed establishment and management plan developed for site	10 points
Mowing Follows OPHI mowing schedule for monarchs each year	5 points
Mowing is staggered over a 2 week period	5 points
Signage indicating site is wildlife & pollinator-friendly	5 points
Creation of habitat features (e.g. boxes, pass-through tunnels, bee hotels)	5 points
Long-term monitoring plan developed that includes re-certification as Solar Site Pollinator Habitat	10 points

10. Insecticide risk. Check if applicable.

Communication with adjacent landowners about the project and possible impacts of their insecticide use is critical

Site is adjacent to land (within 120 ft.) where insecticides are used	-20 points
Planned on-site insecticide use (including pre-treated seeds/plants)	-40 points

Total Points: _____

Provides High Quality Pollinator Habitat > 85
Meets OPHI Solar Pollinator Habitat Standards 70-84

Site Owner/Operator:

Project Location:

Project Size (acres):

Planned Source of Seeds:

Planned Seeding Date:

Habitat & Vegetation Consultant:

Refer to www.ophi.info for more information regarding solar pollinator habitat development.

Version 1 - March 2018
Developed by the OPHI Solar Pollinator Program Advisory Team





Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief

2045 Morse Road – Bldg. E-2

Columbus, OH 43229

Phone: (614) 265-6621

Fax: (614) 267-4764

June 24, 2021

Brooke Harrison
Burns & McDonnell
530 W. Spring St, Suite 200
Columbus, Ohio 43215

Re: 21-0486; Blossom Solar Project

Project: The proposed project involves the construction of a solar facility.

Location: The proposed project is located in the City of Cincinnati, Hamilton County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The Division of Wildlife is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. The OPHI Solar Pollinator Program Advisory Team has developed the Ohio Solar Site Pollinator Habitat Planning and Assessment Form and is available for your use. The form can be found at the following: <http://nebula.wsimg.com/7cf0240c398d5819e3e6ff011f0ba456?AccessKeyId=570E4FC7FCD2ED2F0C1A&disposition=0&alloworigin=1>. We recommend that the areas between and around the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife and reduce use of non-native grass and gravel. The recommended legumes and forbs listed below are low-growing so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators while reducing storm water runoff, standing water, and erosion. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the “OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE

CLEARING". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31, however, limited summer tree cutting may be acceptable after consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the Iowa darter (*Etheostoma exile*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*), a state threatened fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 through August 31. If this habitat will not be impacted, this project is not likely to have an impact on this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Geological Survey: The Division of Geological Survey has the following comments:

Physiographic Region

The proposed project area is in Washington and North Bloomfield townships, Morrow County and Tully Township, Marion County. This area is in the Central Ohio Clayey Till Plain physiographic region. This region is characterized by well-defined end moraines as well as flat-lying ground moraines. Intermorainal lake basins filled with silt, clay, and till are present. There are few large streams and limited sand and gravel outwash. A high-lime Wisconsinan-age till covers Lower Paleozoic-age carbonate rocks and shales (Ohio Department of Natural Resources, Division of Geological Survey, 1998).

Surficial/Glacial Geology

The project area lies within the glaciated margin of the state and includes several Wisconsinan-age glacial features. End moraine deposits made up of clayey till and hummocky ridges cover most of the project area. A flatter ground moraine deposit covers the western portion of the project area and a lacustrine clay deposit is mapped in the northern portion of the project area. Glacial outwash is mapped along Flat Run and Mud Run (Pavey et al, 1999). Glacial drift throughout most of the study area is between 0 and 88 feet thick. Drift is thickest in the southwest and thinnest to the west and southeast of the project area, possibly being absent in some places (Powers and Swinford, 2004).

Bedrock Geology

The uppermost bedrock unit in the project area is the Sunbury Shale. This unit is Mississippian-age and consists of black to brownish black carbonaceous shale with very thin laminae. This unit underlies much of the eastern portion of the project area. Underlying the Sunbury Shale is the Mississippian-age Berea Sandstone and Bedford Shale Undivided. Bedford shale in this unit consists of gray to brown shale and interbedded siltstone and sandstone. Bedding may be planar to lenticular. Ripple marks may be present in siltstone. Berea Sandstone in this unit consists of brown to weathered reddish-brown sandstone with minor shale beds present. This unit underlies much of the western portion of the project area. Bedrock may be exposed in outcrops and roadcuts within the boundary of the project area (Slucher et al, 2006).

Oil, Gas and Mining

ODNR has record of 31 oil and gas wells within one mile of the proposed project area. Most of these wells are listed as plugged, dry, or were never drilled with expired permits (Ohio Department of Natural Resources, Division of Oil and Gas, Ohio Oil and Gas Wells Locator).

ODNR does not have record of any mining operations within the project area. The nearest mine to the project area is an active shale quarry operated by Glen-Gery Corporation. This mine is located approximately 1.2 miles south of the project area (Ohio Department of Natural Resources, Division of Mineral Resources, Mines of Ohio).

Seismic Activity

Several small earthquakes have historically been recorded in the region. The three events closest to the site are listed in the chart below (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Earthquake Epicenters):

Date	Magnitude	Distance to Site Boundary	County	Township
January 12, 1995	3.3	9.3 miles	Richland	Springfield
February 17, 1927	3.1	15.4 miles	Richland	Washington
February 17, 1927	2.5	16.3 miles	Richland	Washington

Soils

According to the USDA Web Soil Survey, the project area consists primarily of soils derived from till, loess, outwash and alluvium. Centerburg, Bennington, Sleeth, Amanda, Cardington and Rittman are the most common soil series found within the boundaries of the project area. Together, these soils make up over 80% of the project area (USDA Web Soil Survey).

There is a low to moderate risk of shrink-swell potential in these soils. Other limiting factors include poor drainage and ponding in some soils. Slope remains relatively flat, with slope seldom exceeding a 12% grade. Slope may be higher along streambanks (USDA Web Soil Survey).

Groundwater

Groundwater resources vary throughout the project area. Wells developed in the Sunbury Shale have an expected yield of less than 5 gallons per minute. *Groundwater Resources of Morrow County* lists this area as having an expected yield of less than 2 gallons per minute and notes that dry wells are common. Wells developed in the Berea Sandstone and Bedford Shale Undivided have an expected yield of 5 to 25 gallons per minute. *Groundwater Resources of Morrow County* lists this area as having an expected yield of 10 to 25 gallons per minute and notes that hydrogen sulfide is often found in the Berea Sandstone (Kostelnick, 1981 and Ohio Department of Natural Resources, Division of Water, Bedrock Aquifer Map, 2000). Wells developed in glacial material are likely to yield up to 25 gallons per minute. Unconsolidated aquifers in the area include the Galion Ground Moraine Aquifer, the Galion Thin Upland Aquifer, the Powell Thin Upland

Aquifer, and the Powell End Moraine Aquifer. These aquifers have an expected yield of 5 to 25 gallons per minute, except for the Galion Thin Upland Aquifer and the Powell Thin Upland Aquifer which have a yield of less than 5 gallons per minute. Higher groundwater yields typically reflect larger diameter, properly developed and screened wells (Ohio Department of Natural Resources, Division of Water, Statewide Unconsolidated Aquifer Map, 2000).

ODNR has record of 233 water wells drilled within one mile of the project area. These wells range in depth from 19 to 259 feet deep, with an average depth of 80.1 feet. The most common aquifer listed is shale or sandstone. There are 80 shale wells and 71 sandstone wells.

Unconsolidated sand and gravel is used as the aquifer in an additional 29 wells. A sustainable yield of 2 to 40 gallons per minute is expected from wells drilled in this area based on well log records. The average sustainable yield from these records within one mile was 11.5 gallons per minute. This is based on records from 24 wells within one mile of the project area that contain sustainable yield data (Ohio Department of Natural Resources, Division of Water, Ohio Water Wells).

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at Sarah.Tebbe@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

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- USDA Web Soil Survey, (Last modified 2019). *Web Soil Survey Interactive Map*, United States Department of Agriculture, National Resources Conservation Service, online interactive map, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

APPENDIX D – PHOTOGRAPH LOG



Photograph C-1: View of potential bat habitat comprised of American beech (*Fagus grandifolia*) and shagbark hickory (*Carya ovata*), facing southeast.



Photograph C-2: View of potential bat habitat comprised of silver maple (*Acer saccharinum*) and American beech, facing southwest.



Photograph C-3: View of potential bat habitat comprised of silver maple and American beech, facing northwest.



Photograph C-4: View of potential bat habitat comprised of American beech, northern red oak (*Quercus rubra*), and shagbark hickory, facing northeast.



Photograph C-5: View of potential bat habitat comprised of northern red oak with Amur honeysuckle (*Lonicera maackii*) understory, facing south.



Photograph C-6: View of potential bat habitat comprised of silver maple, northern red oak, and black cherry (*Prunus serotina*), facing north.



Photograph C-7: View of potential bat habitat comprised of black walnut (*Juglans nigra*), facing west.



Photograph C-8: View of potential bat habitat comprised of hackberry (*Celtis occidentalis*), black walnut, and black cherry, facing south.

Blossom Solar, LLC
Blossom Solar Project



Photograph Log
April 26-30, 2021
Morrow and Marion Counties, OH



Photograph C-9: View of potential bat habitat comprised of shagbark hickory, northern red oak, and silver maple, facing south.



Photograph C-10: View of potential bat habitat comprised of black cherry, black walnut, and red pine (*Pinus resinosa*), facing north.



Photograph C-11: View of upland forested habitat, facing north.



Photograph C-12: View of upland forested habitat with dense shrub understory, facing south.



Photograph C-13: View of upland fallow field, facing west.



Photograph C-14: View of upland fallow field, facing south.



Photograph C-15: View of active agriculture, facing east.



Photograph C-16: View of active agriculture, facing northeast.



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Mr. Michael J. Settineri on behalf of Blossom Solar, LLC