

Exhibit B
Site Characterization Report

Cardno

January 2021

Site Characterization Study Report

Pleasant Prairie Solar Energy Project

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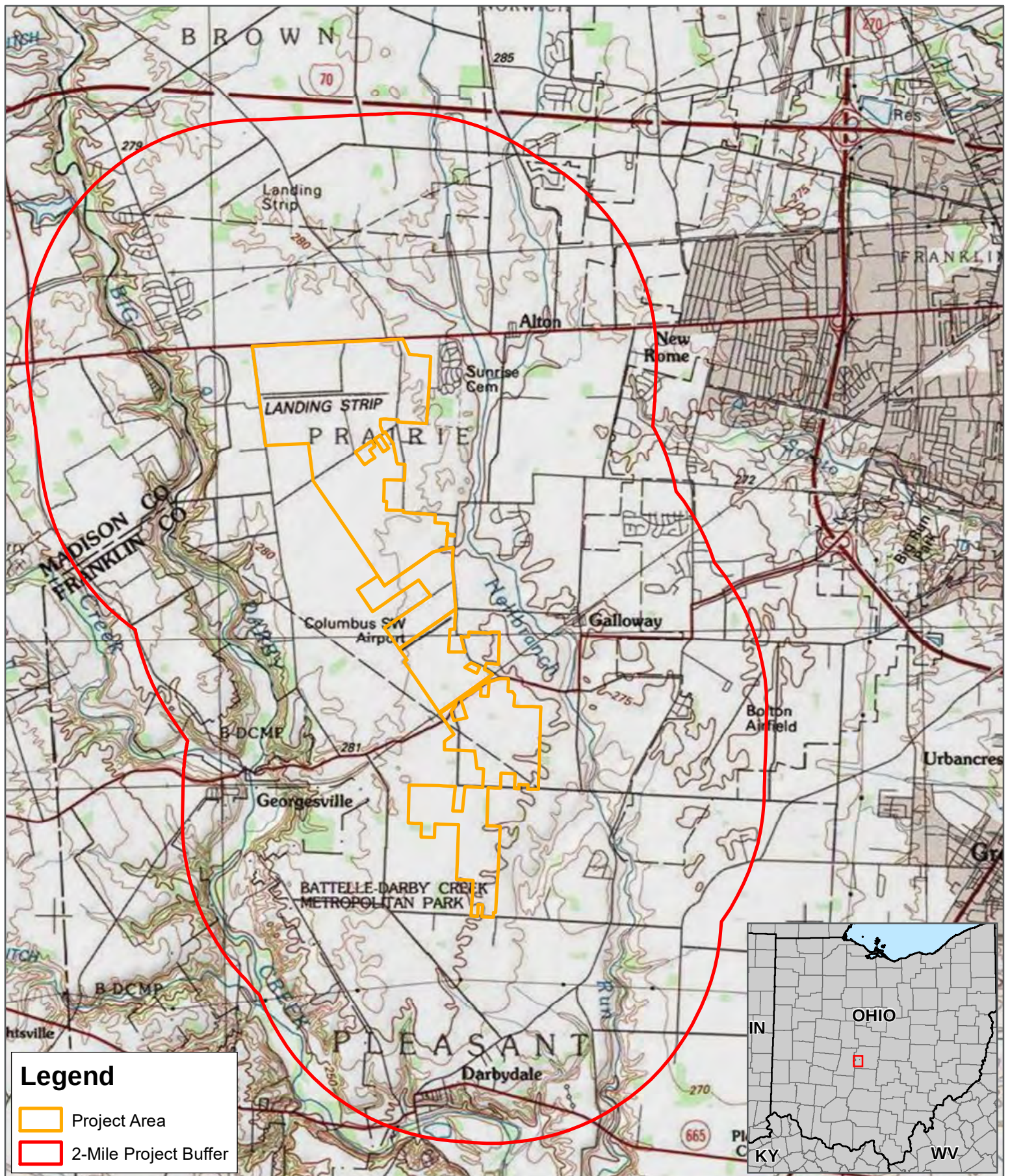
BBS	Breeding Bird Survey
BGEPA	Bald and Golden Eagle Protection Act
DOW	Division of Wildlife
GPS	Global Positioning System
HDD	Horizontal directional drill
HHEI	Headwater Habitat Evaluation Index
IBA	Important Bird Areas
IPaC	Information for Planning and Conservation tool
MRLC	Multi-Resolution Land Characteristics Consortium
MW	megawatts
NAS	National Audubon Society
NLCD	National Land Cover Database
NWI	National Wetlands Inventory
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OPSB	Ohio Power Siting Board
ORAM	Ohio Rapid Assessment Methodology
PEM	Palustrine emergent
PFO	Palustrine forested
Project	Pleasant Prairie Solar Energy Project
PSS	Palustrine scrub-shrub
RTE	rare, threatened, or endangered
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1 Introduction

On behalf of Pleasant Prairie Solar Energy LLC (Pleasant Prairie), an affiliate of Invenergy, Cardno, Inc. (Cardno) has prepared this Site Characterization Study Report as part of the environmental analysis for the Pleasant Prairie Solar Energy Project (Project). The Project will generate up to 250 megawatts (MW) of power, and is located within approximately 3,450 acres of privately owned lands (Project Area). The Project is located within Pleasant and Prairie townships, Franklin County, Ohio and is bounded by County Road 40 to the north, and County Road 140 (Darby Creek Drive) to the west. County Road 11 divides the Project near the southern boundary (Figure 1.1 Project Location Map).

This Site Characterization Study Report provides a desktop and field evaluation of the 3,450-acre Project Area, which includes within its bounds, a 100-foot buffer as required by the Ohio Administrative Code (OAC) 4906-4-08(B)(1)(b), as well as a literature review encompassing a 2-mile radius (29,283 acres) surrounding the Project (Study Area), exceeding the ¼-mile radius required by OAC 4906-4-08(B)(1)(c).

This study provides information necessary to address objectives identified under the Tier 1 Preliminary Site Evaluation and Tier 2 Site Characterization Study tiers of the United States Fish and Wildlife Service's (USFWS) Land-Based Wind Energy Guidelines (WEG; USFWS 2012), and to provide data to comply with the Ohio Power Siting Board (OPSB) requirements at OAC 4906-4-08(B)(1). The wind guidelines were used because a similar tiered approach for solar development projects has not been established by the USFWS.



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2 Methodology

The preliminary site assessment and site characterization were completed using a combination of a) existing information obtained from available public sources including reports, published literature, online databases, and geographic information systems, b) agency consultations, and c) field reconnaissance. This information is used to provide a description ecological resources, potential presence of protected species, and habitat to support these species within the Study Area, based on an understanding of life history and habitat requirements. A summary of wetlands and surface water resources, habitat types and species observations within the Project Area and 2-mile Study Area are described below, and presented in the Figures in Appendix A.

2.1 Existing Information from Available Public Sources

- > Google Earth Pro. 2020. Aerial Imagery of Franklin, Madison, and Pickaway Counties, Ohio. 2017 April 25 Imagery. Accessed September 2020.
- > Multi-Resolution Land Characteristics Consortium (MRLC). 2018. National Land Cover Database 2016 (NLCD 2016). Multi-Resolution Land Characteristics Consortium (MRLC). Accessed November 2020. Available at: <https://www.mrlc.gov/data/nlcd-2011-land-cover-conus-0>.
- > National Audubon Society (NAS). 2019. Important Bird Areas. Available at: <http://www.audubon.org/important-bird-areas/>. Accessed November 2020.
- > National Audubon Society (NAS). 2020. Christmas Bird Count. Accessed November 2020. <http://www.audubon.org/conservation/science/christmas-bird-count>.
- > Natural Resources Conservation Service (NRCS). 2019. Soil Survey for Franklin County, Ohio. Accessed October 2020. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- > Ohio Department of Natural Resources (ODNR). 2014. Ohio Wetlands Inventory Franklin County, GIS download. <https://ohiodnr.gov/wps/portal/gov/odnr/business-and-industry/services-to-business-industry/data-records/metadata-downloads>
- > Ohio Department of Natural Resources (ODNR). 2015. State-Listed Plant Species by County, Franklin County List. Division of Wildlife (DOW). March 2015. <https://ohiodnr.gov/static/documents/wildlife/state-listed-species/franklinp.pdf>
- > Ohio Department of Natural Resources (ODNR). 2019. Geographic Information Systems. Accessed June 2020. <https://geospatial.ohiodnr.gov/data-metadata/search-by-category>.
- > Ohio Department of Natural Resources (ODNR). 2019. Ohio's Listed Species Report. Division of Wildlife (DOW). Updated September 2019). <https://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf>
- > Ohio Department of Natural Resources (ODNR). 2020. State-Listed Wildlife Species by County, Franklin County List. Division of Wildlife (DOW). March 2020. <https://ohiodnr.gov/static/documents/wildlife/state-listed-species/franklin.pdf>
- > United States Department of Agriculture National Resources Conservation Service (USDA-NRCS) 2018. Web Soil Survey. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- > United States Environmental Protection Agency (USEPA). 2018. Ecoregions of North America. Accessed November 2020. <https://www.epa.gov/eco-research/ecoregions-north-america>

- > United States Fish and Wildlife Service (USFWS). 2017. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands>.
- > United States Fish and Wildlife Service (USFWS). 2018. County Distribution of Federally-Listed Endangered, Threatened, and Proposed Species, Franklin County List, dated January 2018. <https://www.fws.gov/midwest/endangered/lists/ohio-cty.html>
- > United States Geological Survey (USGS). 2019. Protected Areas Database of the United States. <https://maps.usgs.gov/padus/>. Accessed November 2020.
- > United States Geological Survey (USGS). 2019. Protected Areas Database of the United States. <https://maps.usgs.gov/padus/>. Accessed November 2020.
- > United States Geological Survey (USGS). 2020. National Hydrography Dataset. GIS Download. https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset?qt-science_support_page_related_con=0#qt-science_support_page_related_con

Prior to field reconnaissance, Cardno reviewed the above sources to prepare field maps of anticipated conditions regarding current land use, potential wetland and surface water environments, and understand the potential occurrence for rare, threatened and endangered species and their habitats within the Project Area.

2.2 Agency Correspondence

On behalf of the Project, Cardno submitted an Environmental Review request to the USFWS on October 12, 2020. The USFWS responded on November 13, 2020 (Appendix B). In support of the discussion on federally listed species within the Study Area, Cardno also utilized the USFWS Information for Planning and Consultation (IPaC) tool.

In addition, on behalf of the Project, Cardno submitted an Environmental Review request to the Ohio Department of Natural Resources (ODNR) on October 12, 2020. The ODNR responded on December 7, 2020, ODNR solicited comments from additional organizations, including the Ohio Scenic Rivers Program for considerations on ecological and hydrological protection and enhancement, as well as considerations for siting and best management practices, due to the proximity to Big Darby Creek and its watershed, Battelle Darby Creek Metro Park to the west and the Hellbranch Meadows restoration project to the east.

Agency Correspondence, including an Indiana bat buffer map, as well as further guidance on protection measures for the above mentioned species, is provided as Appendix B.

2.3 Field Reconnaissance

Field reconnaissance surveys were conducted in October 2020 within the Project Area to ground truth existing 2016 National Land Cover Database (NLCD) (MRLC 2018) and USFWS National Wetlands Inventory (NWI) wetland information, document suitable habitat capable to support listed species and species of concern. Additionally, wetland and surface water delineations were conducted within the Project Area in accordance, in accordance with applicable Federal and State regulations and guidelines, including the 1987 U.S. Army Corps of Engineers (USACE) Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and the applicable regional supplements; Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE, 2010), and the Ohio Environmental Protection Agency (OEPA)'s Ohio Rapid Assessment Method (ORAM). A full discussion on methodology and results is provided in the 2021 *Wetland and Waterbody Delineation Report* as prepared by Cardno for the Project.

During field reconnaissance surveys, a Trimble® Global Positioning System (GPS) with sub-meter accuracy was used to collect data points for mapping. Field surveys of onsite vegetation were used to either confirm or update the NLCD land use classification, and if required, new land use types were

defined and delineated. Each field verified land use was evaluated to determine the potential to support Federal and State listed species, species of concern, and general wildlife. Suitable habitat was documented and incidental wildlife observations were noted.

Cardno field staff conducted only visual reconnaissance surveys for state and federally listed mussels as part of the typical waterbody delineation process. If any mussels were found during stream delineations and if the stream may be impacted by in-water work required for Project construction, Cardno identified the stream for a follow-up survey, according to ODNR Division of Wildlife (DOW) and USFWS protocols. The survey protocol notes that use of horizontal directional drill (HDD) to cross a stream eliminates the need for surveys, and streams with a drainage area less than 5 square miles also do not require surveys.

3 Results

3.1 Ecoregion

The Project is located in the Level III Eastern Corn Belt Plain Ecoregion, Level III, more specifically the Loamy, High Lime Till Plains ecoregion. Soils in this area were developed from loamy, limy, glacial deposits of Wisconsinan age; these soils typically have better natural drainage and natural fertility than those of surrounding ecoregions. Prior to agricultural conversion in this area, it was dominated by beech forests, oak-sugar maple forests, and elm-ash swamp forests, on nearly level terrain. In more modern times, the area is dominated by agricultural crops such as corn and soybean, as well supporting livestock production. A review of the Multi-Resolution Land Characteristics Consortium (MRLC) (2018) NLCD, aerial imagery, and field reconnaissance surveys, these areas have been severely altered, and are now dominated by agriculture, and livestock farming activities. Elevation within the Project Area ranges between 900 and 1,150 feet above mean sea level

3.2 Land Cover

Based on a review of available aerial imagery and the 2016 NLCD (MRLC 2018), the Project Area appears to generally consist of cultivated crop land. Cultivated crops accounted for approximately 89.2% of the total acreage in the Survey Area. The next most predominant land uses within the Survey Area were classified as “Pasture/Hay” which accounted for 5.6% of the acreage, “Developed, Open Space” which accounts for 2.3% of the acreage, and “Deciduous Forest” which accounted for approximately 1.2% of the acreage. The deciduous forests were observed to occur as isolated woodlots between agricultural areas. All other land use activities accounted for approximately less than 1% of the total acreage in the Project Area. The field team observed that the land use in the Project Area closely matched the remote land use data. Further discussion on field observations is provided below. A summary is provided in Table 3-1 below, and illustrated in Figure A-1 (Appendix A – Project Figures).

Table 3-1 Land Use within the Pleasant Prairie Solar Energy Project Area, Franklin County, Ohio

Type	Project Area (acres)	Project Area (%)
Cultivated Crops	3,075.67	89.2%
Pasture/Hay	194.50	5.6%
Developed, Open Space	79.08	2.3%
Deciduous Forest	40.07	1.2%
Developed, Low Intensity	37.40	1.1%
Grassland/Herbaceous	5.62	0.2%
Emergent Wetlands	5.20	0.2%
Developed, Medium Intensity	4.40	0.1%
Shrub/Scrub	4.05	0.1%
Woody Wetlands	2.00	0.1%
Mixed Forest	1.11	<0.1%
Barren Land (Rock/Sand/Clay)	0.22	<0.1%
Total	3,449.32	100.0%

* The total acreage used in these calculations differs slightly from the Project Area due to differences inherent to the level of precision of the National Land Cover Dataset.

3.3 Soils

Project soil information was obtained from the Web Soil Survey, an application of the NRCS, and from the Soil Survey of Franklin County, Ohio. The two most dominant soils within the Project Area include the Kokomo silty clay loam, 0 to 2 percent slopes (1,502.55 acres, 43.6%) and the Lewisburg-Crosby complex, 2 to 6 percent slopes (1,084.88 acres, 31.5%). Five soil types within the Project Area (1,632.12 acres, 47.3%) are described as hydric, on the hydric rating scale of 0 (non-hydric) to 100 (hydric). These soils include Kokomo silty clay loam, 0 to 2 percent slopes (1,502.55 acres), Minster silty clay loam, till substratum, 0 to 1 percent slopes (87.56 acres), Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded (16.62 acres), Westland silty clay loam, Southern Ohio Till Plain, 0 to 2 percent slopes (10.04 acres), and Carlisle muck (5.36 acres) (NRCS 2019). A complete list of soils within the Project Area is provided in Table 3-2, below.

Table 3-2 NRCS Soils within the Pleasant Prairie Solar Energy Project Area, Franklin County, Ohio

Soil Symbol	Soil Name	Hydric Rating	Project Area (acres)	Project Area (%)
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	90	1,502.55	43.6%
LeB	Lewisburg-Crosby complex, 2 to 6 percent slopes (Franklin Co.)	15	1,084.88	31.5%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	5	342.19	9.9%
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	5	209.15	6.1%
Mnl3A	Minster silty clay loam, till substratum, 0 to 1 percent slopes	93	97.56	2.8%
CeB	Celina silt loam, 2 to 6 percent slopes	10	82.49	2.4%
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	4	33.69	1.0%
MIC2	Miamian silty clay loam, 6 to 12 percent slopes, eroded	5	29.57	0.9%
So	Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded (Franklin Co)	85	16.62	0.5%
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	0	11.43	0.3%
Wt	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2 percent slopes	90	10.04	0.3%
MkB	Miamian silt loam, 2 to 6 percent slopes	5	8.70	0.3%
Cc	Carlisle muck	100	5.36	0.2%
MID2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	0	4.73	0.1%
CeA	Celina silt loam, 0 to 2 percent slopes	5	3.99	0.1%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	0	3.13	0.1%
MIB2	Miamian silty clay loam, 2 to 6 percent slopes, eroded	8	2.59	0.1%
EIB	Eldean silt loam, 2 to 6 percent slopes	0	0.65	0.0%
Total			3,449.32	100.0%

* The total acreage used in these calculations differs slightly from the Project Area due to differences inherent to the level of precision of the NRCS Web Soil Survey.

3.4 Wetland and Other Non-Linear Surface Waters

To determine the extent of wetland and non-linear surface water features within the Study Area, Cardno conducted a wetland and surface water delineations within the Project Area and a desktop review of ODNr, NHD, and NWI wetlands (USFWS 2020) within the 2-mile buffer. The review found one 203 ponds, 48 forested wetlands, 102 emergent wetlands 8 scrub-shrub wetlands, and 1 freshwater lake within the Study Area.

Within the Project Area, a total of fifteen (15) wetlands were delineated during field surveys, for a total of 7.62 acres of wetlands. Eleven (11) wetlands were palustrine emergent wetlands (PEM), one was palustrine scrub-scrub (PSS), and three were palustrine forested (PFO). One pond with an acreage of 0.52 acres was also delineated within the Project Area. The single pond was a feature that appeared to hold water throughout the year. Many of the ponds in the vicinity of the Survey Area are typically man-made impoundments, which may be used for holding water for irrigation or recreational fishing and aesthetics.

Delineated features within the Project Area and desktop features identified within the 2-mile buffer are described below in Table 3-3, and illustrated in Figures A-2 and A-3 (Appendix A).

Table 3-3 Wetlands and Surface Waters within the Pleasant Prairie Solar Energy Project Study Area, Franklin County, Ohio

Wetland Type	Project Area (Delineated)		2-Mile Buffer (Desktop)		Study Area	
	# of Features	Acres	# of Features	Acres	# of Features	Acres
Freshwater Pond	1	0.52	202	171.5	203	172.02
Freshwater Forested Wetland	3	4.93	45	136.6	48	141.53
Freshwater Emergent Wetland	11	2.18	91	118.4	102	120.58
Freshwater Scrub-Scrub Wetland	1	0.51	7	18	8	18.51
Freshwater Lake	0	0	1	0.1	1	0.1
Total	16	8.14	346	444.6	362	452.74

Cardno also conducted a database review of NWI and NHD surface waters (linear, riverine features) (USFWS 2020) within the Study Area. The review found eight (8) perennial streams within the vicinity of the Project, covering a total of 235.7 acres. Many ephemeral streams likely exist within the 2-mile buffer, but are not mapped in the NWI or NHD due to their ephemeral nature.

Within the Project Area, total of two streams were delineated. One stream was classified as perennial, and the other was classified as intermittent. All streams were flowing at the time of the survey at base flow levels. Turbidity levels were not elevated, indicating minimal runoff from surrounding fields at the time of survey.

Delineated features within the Project Area and desktop features identified within the 2-mile buffer are described below in Table 3-4, and illustrated in Figures A-2 and A-3 (Appendix A).

Table 3-4 Linear Surface Waters within the Pleasant Prairie Solar Energy Project Study Area, Franklin County, Ohio

Surface Water Type	Project Area (Delineated)		2-Mile Buffer (Desktop)		Study Area	
	# of Features	Acres	# of Features	Acres	# of Features	Acres
Perennial Stream	1	0.49	7	235.7	8	237.20
Intermittent Stream	1	0.30	0	0.0	0	0.26
Ephemeral Stream	0	0.00	0	0.0	0	0.00
Total	0	1.76	1	235.70	223	327.86

3.5 General Habitat Description

The Project is in the Level III Eastern Corn Belt Plain Ecoregion, Level III, more specifically the Pre-Wisconsinan Drift Plains, characterized by deeply leached, acidic till and thin loess, with widespread and nearly flat, poorly drained soils (USEPA 2018). Prior to agricultural conversion, these areas were primarily occupied by American beech forests (*Fagus grandifolia*), and American elm (*Ulmus americana*) and ash (*Fraxinus spp.*) swamp forests. A review of the MRLC (2018) NLCD, aerial imagery, and field reconnaissance surveys, these areas have been severely altered, and are now dominated by agriculture, and livestock farming activities. Elevation within the Project Area ranges between 900 and 1,150 feet above mean sea level

The data obtained during the field survey were found to be generally consistent with the results of the desktop review. The predominant land use in the Project Area was agricultural (row crop). The crops in the northern section of the Project Area were primarily soybean, and were standing at the time of survey. Sod farms dominated the central portion of the Project Area and were not harvested at the time of survey. A mix of soybean, sod, and corn crops dominated the southern portion of the Project Area, with some still standing, and some harvested and tilled at the time of survey. The northern portion of the Project Area was bisected by a small airport runway, which was surrounded by maintained grassy swales. These swales and other roadside swales were designed to maintain drainage and control runoff to facilitate proper growing conditions in the surrounding fields. The vegetation and the herbaceous vegetation helped to reduce erosion and to stabilize the ditches. They often had a mix of herbaceous species including reed canary grass (*Phalaris arundinacea*) and various other grasses (*Festuca spp.* and *Fescue spp.*) and sedges (*Carex spp.*). These swales appear to have been maintained through seasonal mowing to clear debris and keep vegetation height low to ensure proper drainage.

Vegetation in the woodlots within the Project Area and adjacent to the Project Area was characterized by a canopy of oaks (*Quercus spp.*), maples (*Acer spp.*), hickories (*Carya spp.*), and elms (*Ulmus spp.*) and a shrub layer of Asian honeysuckle (*Lonicera maackii*). Pollinator habitat along the fencerow along the western boundary, adjacent to the restored native prairie was very evident during surveys. Bees and monarchs were active among the aster species in bloom, including common blue wood aster (*Symphyotrichum cordifolium*), panicled American-Aster (*Symphyotrichum lanceolatum*), and white oldfield American-Aster (*Symphyotrichum pilosum*), as well as Canadian goldenrod (*Solidago canadensis*).

Remaining habitats surveyed during field efforts appeared to lack significant or obvious evidence of listed species or species of concern. Delineated wetlands were primarily depressional around agricultural edges and woodlot borders, but forested wetlands could potentially provide Rare Threatened or Endangered Species (RTE) species habitat. This habitat would be at reduced quality due to the isolated nature and surrounding agricultural land use. Few streams bisected the Project Area, and with limited quality due to

surrounding land use impacting the water chemistry (i.e., high sediment loading during storms and fertilizer in runoff), are not likely to provide habitat to support listed aquatic species.

3.6 Wildlife Species

Information on the existing wildlife in the Study Area was obtained from a variety of sources, including publicly available data from Federal and State agencies. Wildlife, including sensitive species, could exist within the vicinity of the Study Area and could potentially use the area for foraging, migratory stopover, breeding and/or shelter. Based on the current land use, wildlife present in the Project Area are primarily associated with agricultural fields, isolated wooded lots, and potential wetland areas.

Along with direct consultation with USFWS, the IPaC resource was also used to identify the potential occurrence of sensitive species within the Study Area. The federally endangered Indiana bat, federally threatened northern long-eared at, federally endangered Scioto madtom and federally endangered running buffalo clover were all identified as having ranges that overlap with the Study Area. The USFWS also outlines endangered, threatened and candidate species by county for Ohio. The lists for Franklin, Madison and Pickaway counties include the federally endangered clubshell, federally endangered northern riffleshell, federally threatened rabbitsfoot, federally endangered rayed bean, and federally endangered snuffbox mussels. No critical habitats for these species or any others were identified in this area. Additionally, the bald eagle (*Haliaeetus leucocephalus*) is no longer a state or federally listed species under the ESA, but it is still afforded protection under the Bald and Golden Eagle Protection Act (BGEPA).

Correspondence with ODNR indicates a variety of listed animal and plant species existing at or within the vicinity of the Project Area, including the state potentially threatened prairie brome (*Bromus kalmii*), tall larkspur (*Delphinium exaltatum*), scaly blazing-star (*Liatris squarrosa*), state threatened showy goldenrod (*Solidago speciose*), fawnsfoot (*Truncilla donaciformis*), pondhorn (*Uniomerus tetralasmus*), lake chubsucker (*Erimyzon sucetta*), Tippecanoe darter (*Etheostoma tippecanoe*), least bittern (*Ixobrychus exilis*), state and federally endangered northern riffleshell (*Epioblasma rangiana*), snuffbox (*Epioblasma triquetra*), clubshell (*Pleurobema clava*), rayed bean (*Villosa fabalis*), rabbitsfoot (*Theliderma cylindrica*), Indiana bat (*Myotis sodalis*), state endangered Iowa darter (*Etheostoma exile*), upland sandpiper (*Bartramia longicauda*), American bittern (*Botaurus lentiginosus*), spotted darter (*Etheostoma maculatum*), state species of concern purple wartyback (*Cyclonaias tuberculata*), wavy-rayed lampmussel (*Lampsilis fasciola*), kidneyshell (*Ptychobranhus fasciolaris*), salamander mussel (*Simpsonaias ambigua*), and presumed extirpated in Ohio, the blacknose shiner (*Notropis heterolepis*).

A summary of Federal and State listed species with ranges within the Study Area are described in Table 3-6. Further details on species identified by State and Federal Agencies as having potential to occur within the Study Area are provided below. For species to have the potential to occur, the Project Area should have unfragmented, non-isolated areas of preferred habitat, with minimal impacts from surrounding land use, for breeding or foraging. For species not likely to occur, either the habitat is not present within the Project Area or the habitat that is present is largely fragmented and isolated, and shows impact due to surrounding land use. Habitats that have the potential to support listed are identified on Figure A-3 (Appendix A)

Table 3-5 Federal and State Listed Species with Ranges in the Pleasant Prairie Solar Project Study Area, Franklin County, Ohio

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Birds					
Loggerhead Shrike	<i>Lanius ludovicianus</i>	-	SE	Inhabit open country with short vegetation and well-spaced shrubs or low trees, and frequent agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, prairies, golf courses, and cemeteries. Often seen along mowed roadsides with access to fence lines and utility poles.	Potential to occur, as forage habitat is present. No individuals observed.
King Rail	<i>Rallus elegans</i>	-	SE	Breed in both freshwater and brackish marshes, favoring shallow marshes that contain patches of deeper, open water. Specific marsh plants common in habitat includes cattails, sturdy bulrush, maidencane, bulltongue arrowhead, Jamaica swamp sawgrass, giant cutgrass, black needlerush, and introduced Phragmites.	Not likely to occur as preferred marsh habitat is not present within the Project Area.
Upland Sandpiper	<i>Bartramia longicauda</i>	-	SE	Inhabit grasslands and are most numerous in native prairies in the Great Plains, nesting within areas of tall grasses and broadleaf weeks. They also are known to forage pastures, both grazed and ungrazed, and in agricultural fields, especially fallow fields, but sometimes hay or other crop fields.	Potential to forage within agricultural fields within the Project Area. No individuals observed.
Lark Sparrow	<i>Chondestes grammacus</i>	-	SE	This species nests in grasslands with scattered trees, disturbed open areas and shrubby fields. In winter, they occupy brushy areas of grasslands.	Not likely to occur as Project Area does not contain grasslands or shrubby field. Seasonally tilled farmlands limit the nesting potential of this species. No individuals observed.
Cattle Egret	<i>Bubulcus ibis</i>	-	SE	Found in wetlands mostly, but also sometimes dry pastures, farms, fields and roadsides. Nests in trees or shrubs.	Potential to occur in agricultural fields and along roadsides. No individuals observed.
American Bittern	<i>Botaurus lentiginosus</i>	-	SE	Inhabit marshes and large, shallow wetlands with tall marsh vegetation and often areas of open water. Sometimes found feeding in dry, grassy fields.	Not likely to occur as marsh and large wetland habitat is not present within the Project Area. No individuals observed.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Northern Harrier	<i>Circus hudsonius</i>	-	SE	Breeding Northern Harriers are most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. They breed in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, drained marshlands, high-desert shrubsteppe, and riverside woodlands.	Potential to forage in agricultural fields. Loafing pair observe within the Project Area.
Sandhill Crane	<i>Grus canadensis</i>	-	ST	Found roosting within wetlands, but may also utilize agricultural fields. For breeding, they require wet meadows, shallow marshes or moist bottomlands.	Potential to occur in agricultural fields. No individuals observed.
Least Bittern	<i>Ixobrychus exilis</i>	-	ST	Found in mostly freshwater marsh but also brackish marsh, in areas with tall, dense vegetation standing in water.	Not likely to occur as marsh habitat is not present within the Project Area.
Black-crowned Night-heron	<i>Nycticorax</i>	-	ST	Found in a variety of aquatic habitats, around both fresh and salt water, including marshes, rivers, ponds, mangrove swamps, tidal flats, canals, rice fields. Nests in groves of trees, in thickets, or on ground, usually on islands or above water.	Not likely to occur as preferred aquatic habitat is not present within the Project Area.
Mammals					
Indiana Bat	<i>Myotis sodalis</i>	E	SE	Hibernates in caves and mines; Maternity and foraging habitat includes small stream corridors with well-developed riparian woods; upland forests.	Potential to occur as potential roost trees exist along windrows and wood lot edges. No individuals observed.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	T	SE	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests.	Potential to occur as potential roost trees exist along windrows and wood lot edges. No individuals observed.
Little Brown Bat	<i>Myotis lucifugus</i>	-*	SE	Hibernates in small rock crevices, caves and mines; Roost in a variety of habitats including houses, barns, and tree hollows during spring, summer, and fall.	Potential to occur. Potential roost trees identified along windrows and wood lot edges. No individuals observed.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Tricolored Bat	<i>Perimyotis subflavus</i>	-	SE	Hibernates in small rock crevices, caves and mines; Roost in a variety of habitats including houses, barns, and tree hollows during spring, summer, and fall.	Potential to occur. Potential roost trees identified along windrows and wood lot edges. No individuals observed.
Black Bear	<i>Ursus americanus</i>	-	SE	Typically found in coniferous and deciduous forests, as well as open alpine habitats, but not wide-open areas such as plains for fields.	Not likely to occur as thick forests are not present within the Project Area.
Reptiles					
Smooth Greensnake	<i>Opheodrys vernalis</i>	-	E	Occupy moist, grassy areas, usually in prairies, pastures, meadows, marshes, and lake edges, as well as open forested areas.	Not likely to occur as quality moist, grassy habitat is not present within the Project Area.
Mussels					
Rayed Bean	<i>Villosa fabalis</i>	E	SE	Typically occupy small, headwater creeks, but also have the potential to occur in large rivers and wave-washed areas of glacial lakes.	Not likely to occur as high-quality creeks are not present within the Project Area.
Fanshell	<i>Cyprogenia stegaria</i>	E	-	Occupy areas of packed sand and gravel within medium to large rivers that have fast-moving currents.	Not likely to occur as medium or large rivers are not present within the Project Area.
Pink Mucket Pearlymussel	<i>Lampsilis abrupta</i>	E	-	Inhabits shallow riffles and shoals of major rivers and tributaries. Often found in rubble, gravel, or sand substrates that have been swept free of silt by the current.	Not likely to occur as major rivers are not present in the Project Area.
Northern Riffleshell	<i>Epioblasma rangiana</i>	E	SE	Found in small to large streams with firmly packed sand or gravel bottom.	Not likely to occur, as surrounding agricultural land use.
Snuffbox	<i>Epioblasma triquetra</i>	E	-	Typically found in small- to medium-sized creeks, inhabiting areas with a swift current. Also found in some larger rivers with sand, gravel or cobble substrates.	Not likely to occur as streams with swift currents are not present in the Project Area.
Butterfly	<i>Ellipsaria lineolata</i>	-	SE	Found in large rivers with swift currents in sand or gravel substrates.	Not likely to occur as large, fast-moving rivers are not present in the Project Area.
Elephant-ear	<i>Elliptio crassidens</i>	-	SE	Occupy rivers that have mud, sand, gravel or rock substrate and in water that has medium or fast currents like large creeks or rivers.	Not likely to occur as large, fast-moving creeks or rivers are not present within the Project Area.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Purple Cat's Paw	<i>Epioblasma obliquata</i>	E	SE	Occupy large rivers with sandy gravel substrates. It occurs in water of shallow to moderate depth with a swift current.	Not likely to occur as large, fast-moving rivers are not present within the Project Area.
Longsolid	<i>Fusconaia subrotunda</i>	-	SE	Found in small streams to large rivers and prefers a mixture of sand, gravel, and cobble substrates without excessive accumulation of silt and detritus.	Not likely to occur as clear, large streams are not present within the Project Area.
Pocketbook	<i>Lampsilis ovata</i>	-	SE	Inhabit mid-sized rivers and creeks with a clear or sandy silt floor.	Not likely to occur as most streams within the Project Area are small and of low quality.
Rabbitsfoot	<i>Theliderma cylindrica</i>	E	ST	Inhabits shallow areas of small to medium-sized streams and some larger rivers with gravel and sand substrate.	Not likely to occur as water quality in the small streams is influenced by surrounding land use, particularly agricultural runoff. No individuals observed.
Washboard	<i>Megaloniaias nervosa</i>	-	SE	Typically found in the main channel areas of a large river or stream with substrates composed of sand, gravel, or mud.	Not likely to occur as large rivers or streams are not present within the Project Area.
Clubshell	<i>Pleurobema clava</i>	E	SE	Found in small rivers and streams with clean sand and gravel substrate.	Not likely to occur as water quality in the small streams is influenced by surrounding land use, particularly agricultural runoff. No individuals observed.
Pyramid Pigtoe	<i>Pleurobema rubrum</i>	-	SE	Occupy shoals and riffles of medium to large rivers in relatively shallow water and coarse-particle substrate, along sand bars or in deep water.	Not likely to occur as deep, large rivers or streams are not present within the Project Area.
Ohio Pigtoe	<i>Pleurobema cordatum</i>	-	SE	Found in large rivers with substrates composed of a mixture of relatively firm and clean gravel, sand, and silt.	Not likely to occur as large rivers are not present within the Project Area.
Black Sandshell	<i>Ligumia recta</i>	-	ST	Found in rivers, lakes, and large streams, usually in riffles or raceways with good current.	Not likely to occur as fast-moving, large streams are not present within the Project Area.
Pondhorn	<i>Unio merus tetralasmus</i>	-	ST	Found in large rivers with substrates of clean sand or gravel.	Not likely to occur as large rivers are not present within the Project Area.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Ebonyshell	<i>Reginaia ebonus</i>	-	SE	Inhabits large rivers and is usually on a gravel, sand, or mud bottom in water at least six feet deep where the current is swift.	Not likely to occur as large, deep streams or rivers are not present within the Project Area.
Threehorn Wartyback	<i>Obliquaria reflexa</i>	-	ST	Found in medium to large rivers with slackwater conditions to swift currents and substrates of gravel to muddy sand.	Not likely to occur as large, fast-moving streams are not present within the Project Area.
Fawnsfoot	<i>Truncilla donaciformis</i>	-	ST	Found in flowing areas of large rivers in soft or coarse substrate in depths up to 9 meters.	Not likely to occur as large, deep rivers or streams are not present within the Project Area.
Purple Wartyback	<i>Cyclonaias tuberculata</i>	-	SC	Found inhabiting larger rivers in areas with moderate current and gravel substrates.	Not likely to occur as large rivers with moderate current are not present within the Project Area.
Riffle Snaketail	<i>Ophiogomphus carolus</i>	-	ST	Occupy clear, cold, and rocky streams that are fast-flowing with relatively few pools with bottom sediment of fine gravel or sand for burrowing.	Not likely to occur as high-quality streams are not present within the Project Area.
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	-	SC	Occurs in small-medium-sized shallow streams, in and near riffles, with good current, with sand and/or gravel substrate.	Not likely to occur as water quality in the small streams is influenced by surrounding land use, particularly agricultural runoff. No individuals observed.
Plains Clubtail	<i>Gomphus externus</i>	-	SE	Occupy sandy or muddy streams and rivers with some current and grassy or wooded banks and occasionally lakes.	Not likely to occur as fast-moving streams are not present within the Project Area.
Kidneyshell	<i>Ptychobranchus fasciolaris</i>	-	SC	Occurs in high water quality creeks, rivers and lakes with moderate to swift currents and a sand or gravel substrate.	Not likely to occur as high-quality rivers with swift currents are not present within the Project Area.
Salamander Mussel	<i>Simpsonaias ambigua</i>	-	SC	Inhabits medium to large rivers in areas of swift currents within the sand or silt under large, flat stones. The salamander mussel is a parasitic mussel to the mudpuppy (<i>Necturus maculosus</i>).	Not likely to occur as large rivers with moderate current are not present within the Project Area.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Fish					
Iowa Darter	<i>Etheostoma exile</i>	-	SE	Found in slow, clear waters of lakes, ponds, and streams with ample submerged vegetation and substrates consisting of sand, peat, and organic material.	Not likely to occur, as high-quality, heavily vegetated streams are not present within the Project Area.
Tonguetied Minnow	<i>Exoglossum laurae</i>	-	SE	Occupy small to medium-sized streams with clean gravel.	Not likely to occur as streams within the Project Area are not clear.
Spotted Darter	<i>Etheostoma maculatum</i>	-	SE	Lives in freshwater rivers, often with plenty of boulders or rocks.	Not likely to occur as freshwater rivers are not present within the Project Area.
Goldeye	<i>Hiodon alosoides</i>	-	SE	Found in large streams, rivers and reservoirs as a surface feeder.	Not likely to occur as large streams or rivers are not present within the Project Area.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	-	SE	Inhabits clean headwater areas of creeks and small rivers with coarse gravel to rock bottoms located in once glaciated terrain.	Not likely to occur as preferred habitat is not present within the Project Area.
Shortnose Gar	<i>Lepisosteus platostomus</i>	-	SE	Found in calm waters in large rivers and their backwaters, as well as oxbow lakes and large, quiet pools, typically around vegetation or downed logs.	Not likely to occur as large rivers are not present within the Project Area.
Popeye Shiner	<i>Notropis ariommus</i>	-	SE	Found in warm, relatively clear flowing waters of large rivers.	Not likely to occur as large, high-quality rivers are not present within the Project Area.
Lake Chubsucker	<i>Erimyzon sucetta</i>	-	ST	Found in lakes, ponds, and swamps, rarely in streams; mostly in the Great Lakes and Mississippi River Basin.	Not likely to occur as lakes, ponds and swamps are not present within the Project Area.
Tippecanoe Darter	<i>Etheostoma tippecanoe</i>	-	ST	Found in medium to large streams and rivers with fast-moving water with gravel or cobble bottom.	Not likely to occur as medium or large, fast-moving rivers are not present within the Project Area.
Bigeye Shiner	<i>Notropis boops</i>	-	SE	Found in clear, upland streams with high gradients and rock, clear sand or gravel substrates.	Not likely to occur as high quality, upland streams are not present in the Project Area.
Northern Madtom	<i>Noturus stigmosus</i>	-	SE	Occupy rivers and streams with relatively swift currents along with sand, silt, or rocky substrates.	Not likely to occur as fast-moving streams are not present within the Project Area.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Blue Sucker	<i>Cycoreptus elongatus</i>	-	ST	Occupy deep, swift water in channels of large rivers with sand, gravel, or rubble bottoms.	Not likely to occur as deep, fast-moving, large rivers are not present within the Project Area.
Scioto Madtom	<i>Noturus trautmani</i>	E	SE	Found in stream riffles of moderate current over gravel bottoms and water of high quality and free of suspended sediments.	Not likely to occur as streams of moderate current and high quality are not present within the Project Area.
Shovelnose Sturgeon	<i>Scaphirhynchus platyrhynchus</i>	-	SE	Found in open, flowing channels of larger rivers with sandy or gravel bottoms.	Not likely to occur as large rivers are not present within the Project Area.
Paddlefish	<i>Polyodon spathula</i>	-	ST	Found in water deeper than 1.3 meters, such as large river basins and their tributaries.	Not likely to occur as deep streams are not present in the Project Area.
Plants					
Gattinger's-foxglove	<i>Agalinis gattingeri</i>	-	ST	Grows in hillside prairies in rocky and sandy soils that are dry, sunny and south facing.	Not likely to occur as hillside prairies are not present within the Project Area.
Cypress-knee Sedge	<i>Carex decomposita</i>	-	SE	Found rooted to the buttresses and knees of bald cypress trees.	Not likely to occur as cypress trees are not present within the Project Area.
Spreading Rock Cress	<i>Arabis patens</i>	-	SE	Grows in moist rocky woods, limestone outcrops, and shady riverbanks.	Not likely to occur as preferred habitat is not present within the Project Area.
Bicknell's Sedge	<i>Carex bicknellii</i>	-	ST	Grows in dry upland prairies and wet river bottom prairies.	Not likely to occur as upland and wet river bottom prairies are not present within the Project Area.
Glomerate Dodder	<i>Cuscuta glomerata</i>	-	SE	Grows in moist habitats, including wet-mesic prairie, mesic prairie, southern sedge meadow, and hardwood swamps.	Not likely to occur as wet prairies, meadows and swamps are not present within the Project Area.
Leiberg's Panic Grass	<i>Dichanthelium leibergii</i>	-	SE	Grows in moist to dry prairies, and sometimes open woods or bluffs.	Not likely to occur as dry prairies, open woods, and bluffs are not present within the Project Area.
Leafy Blue Flag	<i>Iris brevicaulis</i>	-	ST	Grows in swamps or shaded, moist woods.	Not likely to occur as swamps and moist woods are not present within the Project Area.
Inland Rush	<i>Juncus interior</i>	-	ST	Grows in moist prairies, prairie swales, seeps, depressions in rocky glades, soggy meadows, paths in open woodlands, ditches along roadsides and railroads, overgrazed pastures, grassy areas in parks, and poorly maintained lawns.	Potential to occur along agricultural fields or ditches along roadsides. No individuals observed.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Bunchflower	<i>Melanthium virginicum</i>	-	ST	Grows in open bottomland woodlands, damp meadows, swamps, marshes, fens, floating bogs, and roadside ditches.	Potential to occur along roadside ditches. No individuals observed.
Lake Cress	<i>Rorippa aquatica</i>	-	ST	Grows in quiet water, springs, bays of lakes, sluggish streams, muddy shores, rocky shores of lakes, marl ponds in kettle holes, floodplains and oxbows along rivers, small streams, brooks, and bald cypress swamps.	Not likely to occur as preferred habitat is not present within the Project Area.
Royal Catchfly	<i>Silene regia</i>	-	ST	Grows in dry, rocky soils in open woods, wood margins and prairies.	Not likely to occur as preferred habitat is not present within the Project Area.
Prairie Dropseed	<i>Sporobolus heterolepis</i>	-	ST	Grows in ill prairies, gravel prairies, dolomite prairies, black soil prairies, cemetery prairies, prairie remnants along railroads, and limestone glades.	Not likely to occur as preferred habitat is not present within the Project Area.
Raven-foot Sedge	<i>Carex crus-corvi</i>	-	ST	Grows in areas that are seasonally flooded, with potential to occur along agricultural edges.	Potential to occur along agricultural fields. No individuals observed.
Chaffweed	<i>Centunculus minimus</i>	-	SE	Grows in wet, sparsely vegetated soil around ponds and along rivers and streams in the valleys and on the plains.	Not likely to occur as preferred habitat is not present within the Project Area.
Showy Lady's-slipper	<i>Cypripedium reginae</i>	-	ST	Grows in wetlands such as fens, wooded swamps, and riverbanks.	Not likely to occur as preferred wetland types are not present within the Project Area.
Tansy Mustard	<i>Descurainia pinnata</i>	-	ST	Grows in sunny, dry, sandy or rocky soil along roadsides, railroads or plains.	Potential to occur along roadsides. No individuals observed.
Engelmann's Spike-rush	<i>Eleocharis engelmannii</i>	-	SE	Grows in wet habitats such as wet road ditches, wet meadows, receding shores and seasonal pools in rock outcrops.	Potential to occur along roadside ditches. No individuals observed.
Round-leaved Spurge	<i>Euphorbia serpens</i>	-	SE	Grows in disturbed areas, often near water.	Not likely to occur as preferred habitat is not present within the Project Area.
Perideridia	<i>Perideridia americana</i>	-	SE	Grows in glades, upland prairies, and forests.	Potential to occur in forested areas. No individuals observed.
Carolina Leaf-flower	<i>Phyllanthus carolinensis</i>	-	ST	Grows along streambanks, pond margins, sloughs, bottomland forests and ravines.	Not likely to occur as preferred habitat is not present within the Project Area.

Common Name	Scientific Name	Federal Listing Status	State Listing Status	Habitat	Occurrence in Project Area
Rocky Mountain Bulrush	<i>Schoenoplectiella saximontana</i>	-	SE	Grows in moist and wet habitat or shallow water, including disturbed places.	Potential to occur alongside agricultural fields. No individuals observed.
Drummond's Aster	<i>Symphyotrichum drummondii</i>	-	ST	Grows in sandy oak savannas, open areas of oak forests, and along sandy roadsides and powerlines.	Not likely to occur as preferred habitat is not present within the Project Area.
Wild Rice	<i>Zizania aquatica</i>	-	ST	Grows in rivers, streams, lakes, ponds in water less than 2 ft deep in areas with a slight current over a mucky or silty bottom.	Potential to occur in streams. No individuals observed.
Showy Goldenrod	<i>Solidago speciose</i>	-	ST	Occupies open woods and prairies, becoming an aggressive grower in moist soils.	Not likely to occur, as current land use within the Project Area is highly disturbed.

NOTES:

(F) Federally Endangered
(T) Federally Threatened
(SE) State Endangered
(ST) State Threatened

Endangered: The classification provided to an animal or plant in danger of extinction within the foreseeable future through all or a significant portion of its range.

Threatened: Any species which is likely to become an endangered species within the foreseeable future through all or a significant portion of its range.

* The USFWS currently has the listing status for the little brown bat, as "Under Review", while ODNR has indicated it is federally threatened.

3.6.1 Federally Threatened and Endangered Species

Utilizing the USFWS Ohio County Distribution List of Federally Listed Threatened, Endangered and Candidate Species for Franklin, Madison and Pickaway counties, Ohio (2018), the USFWS's IPaC tool (USFWS 2020a), and USFWS Environmental Review, there are three federally listed species with ranges likely to overlap with the Study Area, and potential to occur within the Project Area. These species are discussed below.

3.6.1.1 *Indiana Bat (Myotis sodalis)*

The federally endangered Indiana bat occupies a large range from the east coast to the Midwest United States. The Indiana bat is known to occur in Franklin, Madison and Pickaway counties by the USFWS. Foraging areas include stream corridors within well-developed riparian woodland areas, upland forests and open fields. During winter months, the Indiana bat is found hibernating in caves and mines within rock crevasses and cracks (USFWS 2020). ODNR confirmed records of the Indiana bat at or within the Study Area. USFWS states that the Indiana bat has the potential to exist in all areas of Ohio and identified records of the presence of the Indiana Bat in the vicinity of the Project Area, but not directly within the boundary. Female Indiana Bats often return to the same forested areas for summer roosting and foraging and therefore extensive tree clearing could be a potential threat to this species. Potential bat roost trees were identified along fencerows and along the edges of woodlots, as defined by USFWS as "live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have exfoliating bark, cracks, crevices, hollows and/or cavities". Potential roost trees are identified on Figure A-3 (Appendix A). No caves or karst features were identified within the Project Area, and a review of the Karst Interactive Map (ODNR Division of Geological Survey, 2020) indicates small natural sinks within the Study Area but no caves to support bat hibernacula. A Karst Features Map is presented as Figure A-4 (Appendix A). No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable but limited habitat and known occurrences in the Study Area, the Indiana bat has potential to occur from spring through fall in the Project Area, but would retreat to hibernacula in areas outside the Study Area during winter.

3.6.1.2 *Northern Long-Eared Bat (Myotis septentrionalis)*

The federally threatened northern long-eared bat is typically found roosting and foraging in upland forests across the eastern and Midwestern United States. The northern long-eared bat is listed in Franklin, Madison and Pickaway counties by the USFWS. Foraging areas include stream corridors within well-developed riparian woodland areas, and upland forests. During winter months, the Indiana bat is found hibernating in caves and mines within rock crevasses and cracks. Males and non-reproductive females may occasionally utilize these cooler areas for roosting (USFWS 2020). Similar to the Indiana Bat, the northern long-eared bat has the potential to exist throughout all of Ohio, and although suitable habitat may exist within the Study Area, USFWS found no record of this species and suggests the likelihood of occurrence of this species within the Study Area to be low. ODNR confirmed records of the Indiana Bat at or within the Study Area. Potential bat roost trees were identified along fencerows and along the edges of woodlots, as defined by USFWS as "live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have exfoliating bark, cracks, crevices, hollows and/or cavities". Potential roost trees are identified on Figure A-3 (Appendix A). No caves or karst features were identified within the Project Area, and a review of the Karst Interactive Map (ODNR Division of Geological Survey, 2020) indicates small natural sinks within the Study Area but no caves to support bat hibernacula. A Karst Features Map is presented as Figure A-4 (Appendix A). No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable but limited habitat and known occurrences in the Study Area, the northern long-eared bat has potential to occur from spring through fall in the Project Area, but would retreat to hibernacula in areas outside the Study Area during winter.

3.6.2 Federal Non-Listed Species

3.6.2.1 Bald and Golden Eagles

Bald Eagles typically occupy habitats associated with estuaries or large bodies of water such as lakes, reservoirs or rivers, and large marsh systems. Golden eagles (*Aquila chrysaetos*) are often found roosting in very tall trees within dense forests. Prey species for these eagles include fish, waterfowl, and small mammals such as squirrels, prairie dogs, raccoons and rabbits (USFWS 2019). Due to the lack of large bodies of water or marsh systems within the Study Area, it is unlikely for the Study Area to host either of these species due to inadequate foraging or nesting habitat, although the possibility exists for these species to pass through the Study Area.

3.6.2.2 Monarch Butterfly

The monarch butterfly (*Danaus plexippus plexippus*) is a large butterfly that lives in a variety of habitats requiring milkweed (*Asclepias* spp.) for breeding. In North America, the eastern population undergoes a northern migration to the United States and Canada in March from the mountains of central Mexico, and undergo the fall migration back to overwintering sites in Mexico is from August to November. Monarchs need nighttime roosting sites during migration. In the western population, roosting generally occurs in both native and nonnative deciduous and evergreen trees. Adults use a wide variety of flowering plants throughout migration and breeding. Important nectar sources during the spring migration typically include *Coreopsis* spp., *Viburnum* spp., *Phlox* spp., and, early blooming milkweeds. Important nectar sources during fall migration include: goldenrods (*Solidago* spp.), asters (*Symphyotrichum* spp. and *Eurybia* spp.), gayfeathers (*Liatris* spp.), and coneflowers (*Echinacea* spp.) The December 2020, the USFWS reviewed the status of the monarch, indicating that listing is warranted but not prudent, and therefore will maintain candidate status until higher priority species are reviewed. Monarchs were observed within the Project Area along the fence row adjacent to the restored prairie lands, and are anticipated to occupy that area between spring and fall.

3.6.3 State Listed Species

Utilizing the Ohio Listed Species Report (ODNR 2019), and the State Listed Wildlife and Plants by County, for Franklin, Madison, and Pickaway counties (ODNR 2020a, 2020b, 2020c, 2016a), and the ODNR Environmental Review, in addition to federally listed species, there are fourteen state listed species with ranges likely to overlap with the Study Area, and per habitat requirements have potential to occur within the Project Area. These species are discussed below.

3.6.3.1 Little Brown Bat (*Myotis lucifugus*)

The state endangered little brown bat is found roosting and foraging in habitats such as houses, barns, and tree hollows during the spring through the fall, and will hibernate within rock crevices in caves and mines. Females will form large maternity roost colonies, while males tend to roost along or in small groups. This species was once thought to be the most common species of bat in Ohio, but populations have been on a dramatic decline due to habitat loss and white-nose syndrome (ODNR 2020). ODNR has no record of this species within the Study Area, but noted the Project is in range for the little brown bat. Potential bat roost trees were identified along fencerows and along the edges of woodlots, as defined by USFWS as “live trees and/or snags ≥3 inches diameter at breast height (dbh) that have exfoliating bark, cracks, crevices, hollows and/or cavities”. Potential roost trees are identified on Figure A-3 (Appendix A). No caves or karst features were identified within the Project Area, and a review of the Karst Interactive Map (ODNR Division of Geological Survey, 2020) indicates small natural sinks within the Study Area but no caves to support bat hibernacula. A Karst Features Map is presented as Figure A-4 (Appendix A). No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable but limited habitat and known occurrences in the Study Area, the little brown bat has potential to occur from spring through fall in the Project Area, but would retreat to hibernacula in areas outside the Study Area during winter.

3.6.3.2 Tricolored Bat (*Perimyotis subflavus*)

The state endangered tricolored bat inhabits landscapes that are partly open, with large trees and plentiful woodland edges. They generally avoid deep woods as well as large, open fields. Tricolored bats hibernate almost exclusively in caves and mines. They also tend to occupy the very back of the caves and other hibernation sites, where temperature is highest and least variable, the walls of the cave are warmer, and humidity levels are higher (Center for Biological Diversity 2020). ODNR has no record of this species within the Study Area, but noted the Project is in range of the tricolored bat. Potential bat roost trees were identified along fencerows and along the edges of woodlots, as defined by USFWS as "live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have exfoliating bark, cracks, crevices, hollows and/or cavities". Potential roost trees are identified on Figure A-3 (Appendix A). No caves or karst features were identified within the Project Area, and a review of the Karst Interactive Map (ODNR Division of Geological Survey, 2020) indicates small natural sinks within the Study Area but no caves to support bat hibernacula. A Karst Features Map is presented as Figure A-4 (Appendix A). No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable but limited habitat and known occurrences in the Study Area, the little brown bat has potential to occur from spring through fall in the Project Area, but would retreat to hibernacula in areas outside the Study Area during winter.

3.6.3.3 Upland Sandpiper (*Bartramia longicauda*)

The state endangered upland sand piper nests in uplands, utilizing dry grasslands such as native grasslands, seeded grasslands, with the potential to forage in pastures and agricultural fields, especially fallow fields. Breeding occurs in the spring and summer, and the upland sand piper undergoes to its wintering ground in the south. Breeding is most common in the Great Plains region and along the Great Lakes. The Project Area is located in relatively uncommon breeding area, due to loss of grasslands, but ODNR notes occurrences of the species within the Study Area. Directly adjacent to the Project to the west, Darby Creek Metro Park includes a restored grassland and prairie that has the potential to provide habitat for the upland sandpiper. While no listed species were observed during the field survey, the sod farms and grassy area around the airport runway have the potential to provide suitable foraging habitat for the upland sandpiper. No RTE species were observed during the field reconnaissance surveys.

Based on presence of suitable forage habitat, and the proximity to restored native grasslands preferred for breeding, the Project Area has the potential to support foraging upland sandpipers between spring and fall.

3.6.3.4 Cattle Egret (*Bubulcus ibis*)

The state endangered cattle egret primarily inhabits wetlands, but can also be found foraging in dry pastures, farmlands, fields, and roadside habitats. Cattle egrets primarily nest in trees or shrubs over or near water. They will primarily nest in colonies with other herons, but are known to occasionally nest as isolated pairs. Cattle egrets can also utilize dry pasture, farm lands, and field for forage during their migration to wintering habitats in the south. ODNR notes occurrences of the species within the Study Area. The Project has the potential to support nesting in larger shrubby and treed vegetation within the wetlands, and potential foraging within the adjacent farmlands. No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable forage habitat, the Project Area has the potential to support foraging cattle egrets, and although less common as the forested wetlands are small and isolated, the Project may support breeding birds. Cattle egrets by occur within the Project Area between spring and fall.

3.6.3.5 Northern Harrier (*Circus hudsonius*)

The state endangered northern harrier is a common migrant species, and wintering species within the Study Area. While nesting in this region is rare, they will occasionally breed in large marshes and grasslands. Nests are constructed of loose sticks on top of a mound. Harriers will hunt over grasslands and agricultural fields. During field surveys, a pair of harriers were flushed from the brush, and seen on several other occasions within the active agricultural lands. No evidence of nesting activities was observed, and the pair exhibited loafing behaviors. ODNr notes occurrences of the northern harrier within the Study Area, including breeding activities. While the Project Area does not support preferred breeding habitat, the potential exists for harriers to use the Project Area as potential forage.

As this species is both a migrant and winter species, the Project has the potential to support foraging activities for the northern harrier year-round.

3.6.3.6 Sandhill Crane (*Grus canadensis*)

The state threatened sandhill crane roosts within wetlands, creating a mound of brush and grasses, but has the potential to forage within a variety of habitats, including grasslands and farmland. Sandhill cranes require large tracts of wet meadow, shallow marsh, or bogs for roosting, but have the potential to utilize open farmland during migration and in their wintering grounds in the south. ODNr notes occurrences of sandhill cranes within the Study Area. The Project Area has the potential to provide forage habitat for sandhill cranes nesting within the vicinity of the Project and during migration. No individuals were observed during the general field reconnaissance survey.

Based on presence of suitable forage habitat, the Project Area has the potential to support foraging sandhill cranes. The species has the potential to occur within the Project Area between spring and fall.

3.6.4 Federal and State Species of Concern

The USFWS did not identify any species of concern within the Study Area, but ODNr identified the following state-listed species of concern have the potential to occur within the Study Area:

- > Wavy-Rayed Lampmussel (*Lampsilis fasciola*)
- > Kidneyshell (*Ptychobranhus fasciolaris*)
- > Salamander Mussel (*Simpsonaias ambigua*)
- > Badger (*Taxidea taxus*)

These mussel species require high-quality streams of swift moving current. Due to the general low quality of the streams surveyed, it is unlikely any of these species exist within the Project Area. No mussels were observed during the general field reconnaissance survey.

Badgers typically prefer grasslands, parklands and farms and occasionally occupy meadows, marshes and brushy areas. Although there is potential for this type of habitat to exist within the vicinity of the Project Area particularly in the less disturbed fringes of the agricultural lands. No individuals were observed during the general field reconnaissance survey.

3.6.5 Wildlife Observations

During field reconnaissance surveys, the following plant and animal species were observed within the Project Area (Table 3-6).

Table 3-6 Species Observed within the Pleasant Prairie Solar Project Area, Franklin County, Ohio

Common Name	Scientific Name	Listing Status	Common Name	Scientific Name	Listing Status
Animals					
American Crow	<i>Corvus brachyrhynchos</i>	--	Killdeer	<i>Charadrius vociferus</i>	--
American Goldfinch	<i>Spinus tristis</i>	--	Mourning Dove	<i>Zenaida macroura</i>	--
American Robin	<i>Turdus migratorius</i>	--	Northern Flicker	<i>Colaptes auratus</i>	--
Blue Jay	<i>Cyanocitta cristata</i>	--	Northern Harrier	<i>Circus hudsonius</i>	State Endangered
Carolina Wren	<i>Thryothorus ludovicianus</i>	--	Northern Mockingbird	<i>Mimus polyglottos</i>	--
Coyote (scat)	<i>Canis latrans</i>	--	Raccoon	<i>Procyon lotor</i>	--
Eastern Bluebird	<i>Sialia sialis</i>	--	Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	--
Eastern Phoebe	<i>Sayornis phoebe</i>	--	Red-tailed Hawk	<i>Buteo jamaicensis</i>	--
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	--	Song Sparrow	<i>Melospiza melodia</i>	--
Gray Catbird	<i>Dumetella carolinensis</i>	--	Turkey Vulture	<i>Cathartes aura</i>	--
House Finch	<i>Haemorhous mexicanus</i>	--	White-tailed Deer	<i>Odocoileus virginianus</i>	--
Monarch Butterfly	<i>Danaus plexippus</i> <i>plexippus</i>				
Plants					
Alsike Clover	<i>Trifolium hybridum</i>	--	Lamb's-Quarters	<i>Chenopodium album</i>	--
American Water-Plantain	<i>Alisma subcordatum</i>	--	Large Barnyard Grass	<i>Echinochloa crus-galli</i>	--
Amur honeysuckle	<i>Lonicera maackii</i>	--	Little-Hogweed	<i>Portulaca oleracea</i>	--
Annual Ragweed	<i>Ambrosia artemisiifolia</i>	--	Mexican Muhly	<i>Muhlenbergia Mexicana</i>	--
Black Walnut	<i>Juglans nigra</i>	--	Mild Water-Pepper	<i>Persicaria hydropiper</i>	--
Black-Seed Plantain	<i>Plantago rugelii</i>	--	Narrow-Leaf Cattail	<i>Typha angustifolia</i>	--
Blunt Spike-Rush	<i>Eleocharis obtuse</i>	--	Nodding Burr-Marigold	<i>Bidens cernua</i>	--
Broad-Leaf Cattail	<i>Typha latifolia</i>	--	Norwegian Cinquefoil	<i>Potentilla norvegica</i>	--
Canadian Clearweed	<i>Pilea pumila</i>	--	Panicled American-Aster	<i>Symphyotrichum lanceolatum</i>	--
Canadian Goldenrod	<i>Solidago canadensis</i>	--	Pin Oak	<i>Quercus palustris</i>	--

Common Name	Scientific Name	Listing Status	Common Name	Scientific Name	Listing Status
Canadian Goldenrod	<i>Solidago canadensis</i>	--	Pinkweed	<i>Persicaria pensylvanica</i>	--
Chicory	<i>Cichorium intybus</i>	--	Prickly Fanpetals	<i>Sida spinosa</i>	--
Chufa	<i>Cyperus esculentus</i>	--	Prickly Fanpetals	<i>Sida spinosa</i>	--
common blue wood aster	<i>Symphyotrichum cordifolium</i>	--	Queen Anne's-Lace	<i>Daucus carota</i>	--
Common Dandelion	<i>Taraxacum officinale</i>	--	Reed Canary Grass	<i>Phalaris arundinacea</i>	--
Common Duckweed	<i>Lemna minor</i>	--	Rice Cut Grass	<i>Leersia oryzoides</i>	--
Common Hackberry	<i>Celtis occidentalis</i>	--	Rough Barnyard Grass	<i>Echinochloa muricate</i>	--
Common Morning-Glory	<i>Ipomoea purpurea</i>	--	Rough Cocklebur	<i>Xanthium strumarium</i>	--
Common Reed	<i>Phragmites australis</i>	--	Rough-Fruit Amaranth	<i>Amaranthus tuberculatus</i>	--
Common Three-Seed-Mercury	<i>Acalypha rhomboidea</i>	--	Silver Maple	<i>Acer saccharinum</i>	--
corn	<i>Zea mays</i>	--	Slippery Elm	<i>Ulmus rubra</i>	--
Curly Dock	<i>Rumex crispus</i>	--	Smooth Crab Grass	<i>Digitaria ischaemum</i>	--
Devil's-Pitchfork	<i>Bidens frondosa</i>	--	Soft-Stem Club-Rush	<i>Schoenoplectus tabernaemontani</i>	--
Dock-Leaf Smartweed	<i>Persicaria lapathifolia</i>	--	Soybean	<i>Glycine max</i>	--
Eastern Cottonwood	<i>Populus deltoides</i>	--	Spotted Lady's-Thumb	<i>Persicaria maculosa</i>	--
Eastern Daisy Fleabane	<i>Erigeron annuus</i>	--	Straw-Color Flat Sedge	<i>Cyperus strigosus</i>	--
Eastern Poison Ivy	<i>Toxicodendron radicans</i>	--	Summer Grape	<i>Vitis aestivalis</i>	--
Fall Panic Grass	<i>Panicum dichotomiflorum</i>	--	Swamp Milkweed	<i>Asclepias incarnata</i>	--
flower of an hour	<i>Hibiscus trionum</i>	--	Tall False Rye Grass	<i>Schedonorus arundinaceus</i>	--
Frank's Sedge	<i>Carex frankii</i>	--	Tall Goldenrod	<i>Solidago altissima</i>	--
Great Ragweed	<i>Ambrosia trifida</i>	--	Velvetleaf	<i>Abutilon theophrasti</i>	--
Green Ash	<i>Fraxinus pennsylvanica</i>	--	Water Smartweed	<i>Persicaria amphibia</i>	--
Groundivy	<i>Glechoma hederacea</i>	--	White Ash	<i>Fraxinus Americana</i>	--
Hairy Crab Grass	<i>Digitaria sanguinalis</i>	--	White Clover	<i>Trifolium repens</i>	--

Common Name	Scientific Name	Listing Status	Common Name	Scientific Name	Listing Status
Honey-Locust	<i>Gleditsia triacanthos</i>	--	White Mulberry	<i>Morus alba</i>	--
Indian-Hemp	<i>Apocynum cannabinum</i>	--	White Oldfield American-Aster	<i>Symphyotrichum pilosum</i>	--
Ivy-Leaf Morning-Glory	<i>Ipomoea hederacea</i>	--	Yard Knotweed	<i>Polygonum aviculare</i>	--
Japanese Bristle Grass	<i>Setaria faberi</i>	--	Yellow Bristle Grass	<i>Setaria glauca</i>	--
Kentucky Blue Grass	<i>Poa pratensis</i>	--	Yellow Bristle Grass	<i>Setaria pumila</i>	--
King's-Cureall	<i>Oenothera biennis</i>	--			

3.6.6 Migratory Birds of Conservation Concern

The USFWS IPaC report was also utilized to screen for potentially sensitive migratory birds in the surrounding area. The report produced a list of twenty migratory birds that could potentially be affected by activities in the Study Area. Although there is potential for these species to pass over the Project Area or use for forage, most of the breeding habitat preferences differ from the habitat of the Study Area, as the Project Area is primarily active agricultural fields. These species are included in Table 3-7 below.

Table 3-7 USFWS IPaC Migratory Birds of Conservation Concern.

Common Name	Scientific Name	Preferred Habitat
American Bittern	<i>Botaurus lentiginosus</i>	Freshwater marshes and large, shallow wetlands with tall marsh vegetation (cattails, grasses, sedges) and areas of open shallow water.
American Golden-plover	<i>Pluvialis dominica</i>	Pastures, open ground, and mudflats.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Forests or bodies of water with a variety of prey species within the vicinity.
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	Dense forest, woodlands, and scrub.
Bobolink	<i>Dolichonyx oryzivorus</i>	Grassy and weedy fields.
Buff-breasted Sandpiper	<i>Calidris subru</i>	Dry, grassy open areas
Dunlin	<i>Calidris alpina arctica</i>	Tidal flats, beaches, muddy pools; wet tundra in summer.
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	Uplands, primarily deciduous and mixed forest adjacent to large clearings.
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Dense grasses and wet, weedy pastures
Hudsonian Godwit	<i>Limosa haemastica</i>	Mixed forest, wetlands, sedge meadows and boggy muskeg surrounded by coniferous forest adjacent to scattered trees, small ponds and hummocks.
Kentucky Warbler	<i>Oporornis formosus</i>	Deep, deciduous forests within the vicinity of creeks or rivers.
Least Bittern	<i>Ixobrychus exilis</i>	Fresh marshes and reedy ponds, in areas with tall, dense vegetation standing in water.
Lesser Yellowlegs	<i>Tringa flavipes</i>	Marshes, mudflats, shores, ponds and open boreal woods.
Prothonotary Warbler	<i>Protonotaria citrea</i>	Wooded swamps, flooded bottomland forests, and wooded areas near streams and lakes
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Pine savannahs and open forest areas.
Ruddy Turnstone	<i>Arenaria interpres morinella</i>	Beaches, mudflats, jetties, rocky shores and tundra.
Rusty Blackbird	<i>Euphagus carolinus</i>	Saturated landscapes such as that of flooded woodlands, swamps and marshes.
Semipalmated Sandpiper	<i>Calidris pusilla</i>	Beaches, mudflats and tundra.
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Open bogs, marshes, and edges of lakes within coniferous forest zone.
Wood Thrush	<i>Hylocichla mustelina</i>	Deciduous forests adjacent to marsh or wetland.

3.6.7 USGS Breeding Bird Survey

The North American Breeding Bird Survey (BBS) is a tool implemented by the U.S. Geological Survey and Canadian Wildlife service to track and monitor populations of North American birds. The closest Bird Survey Route is the London Route, Ohio (BBS Route 66166), located approximately 18 miles to the west of the Study Area. This route is part of the Eastern Tallgrass Prairie conservation region of Ohio. A total of 84 different bird species have been observed along this route. The land use along this route is similar to that of the Study Area, consisting mostly of active agricultural lands, and includes wooded portions of Walnut Run. The northern harrier, a state listed endangered species, along with the following species of concern have been recorded along this route: black-billed cuckoo (*Coccyzus erythrophthalmus*), bobolink (*Dolichonyx oryzivorus*), grasshopper sparrow (*Ammodramus savannarum*), northern bobwhite (*Colinus virginianus*), red-headed Woodpecker (*Melanerpes erythrocephalus*), and vesper sparrow (*Pooecetes gramineus*). Table 3-8 outlines the top ten most observed species along the Cuba Route. No listed species of concern occur in the top-ten list.

Table 3-8 Ten Most Common Species Observed along the Cuba Breeding Bird Survey Route.

Common Name	Scientific Name
European Starling	<i>Sturnus vulgaris</i>
American Robin	<i>Turdus migratorius</i>
Common Grackle	<i>Quiscalus quiscula</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Mourning Dove	<i>Zenaida macroura</i>
House Sparrow	<i>Passer domesticus</i>
Song Sparrow	<i>Melospiza melodia</i>
Killdeer	<i>Charadrius vociferus</i>
Eastern Meadowlark	<i>Sturnella magna</i>
Chipping Sparrow	<i>Spizella passerina</i>

3.6.8 Christmas Bird Counts

The Christmas Bird Count is a census of wintering birds in the western hemisphere that is administered by the National Audubon Society and performed annually by volunteer birdwatchers. The Big and Little Darby Creek-Darbydale loop is the closest location to the Study Area and is located approximately 6 miles to the southwest (Figure A-5). A total of 60 species have been recorded in this area, and the 10 most common are included in Table 3-9 below. Of all species observed at the Big and Little Darby Creek-Darbydale loop, the following state listed species have been recorded: northern harrier (endangered), barn owl (threatened), sandhill crane (threatened) and great egret (species of concern).

Table 3-9 Bird Species Commonly Observed on National Audubon Society's Caesar Creek-Spring Valley Christmas Bird Counts.

Common Name	Scientific Name
European Starling	<i>Sturnus vulgaris</i>
Ring-billed Gull	<i>Larus delawarensis</i>
American Robin	<i>Turdus migratorius</i>
Canada Goose	<i>Branta canadensis</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaida macroura</i>
Carolina Chickadee	<i>Poecile carolinensis</i>
Blue Jay	<i>Cyanocitta cristata</i>
Rock Pigeon	<i>Columba livia</i>
Downy Woodpecker	<i>Picoides pubescens</i>

3.6.9 Important Bird Areas

The National Audubon Society designates Important Bird Areas (IBA) around the globe as sites that provide essential habitat for one or more species of bird. IBAs include sites for breeding, wintering, and/or migrating birds' passageways. IBAs range from a few acres to thousands of acres in size, but usually they are discrete sites that stand out from the surrounding landscape.

The Scioto River-Greenlawn IBA is located approximately 16 miles east of the Study Area. This unique area is found within the city limits of Columbus as an intact riparian corridor surrounded by a heavily urbanized area. This IBA consists of the Greenlawn Dam and surrounding basin, a seasonal mudflat and rocky riffles just downstream of the dam. The Green Lawn Cemetery and Arboretum is also located within this IBA, along with a series of walking and bicycle paths.

The National Audubon Society states that this IBA has had 212 birds recorded, which is the most that have been observed along any portion of the Scioto River. Many high-priority species have been observed using this area as a riparian corridor, such as the northern pintail (*Anas acuta*), pied-billed grebe (*Podilymbus podiceps*), American bittern, osprey (*Pandion haliaetus*), a variety of gulls and terns, prothonotary warbler (*Protonotaria citrea*), northern waterthrush (*Parkesia noveboracensis*), and other warbler species. An assortment of neotropical migrant songbirds have been seen using this area as stopover. Peregrine falcons (*Falco peregrinus*) and bald eagles have also been observed using this area for hunting. In recent years, the yellow-crowned night-heron (*Nyctanassa violacea*), a high-priority species, has been seen breeding within this IBA, although there are no recent records within the last few years. Large numbers of migrant land birds have been seen in the Green Lawn Cemetery portion of this IBA. High-priority nesting species witnessed in this area include the red-shouldered Hawk and the red-headed Woodpecker.

Due to the lack of adequate habitat in the immediate Study Area, it is likely that many of the bird species would opt for higher quality habitat nearby, such as the IBA listed above for roosting, foraging, and breeding.

3.6.10 Species of Habitat Fragmentation Concern

The Study Area consists mainly of an agricultural monoculture of crop fields, traversed by channelized tributaries, with small pockets of herbaceous and scrub/shrub wetland. The Study Area contains lesser amounts of wetland and upland deciduous forest since its conversion to an area dominated by agricultural fields. As the most contiguous habitat type in the Study Area, agriculture fields provide minimal habitat for floral and faunal communities and are disturbed on a seasonal and/or annual basis by farming activities such as plowing and harvesting. Given this habitat type, it is unlikely that the Study Area provides substantial habitat for roosting, foraging or breeding by species of habitat fragmentation concern.

4 Special Status Lands

4.1 Conservation Lands

Cardno requested an Environmental Review by the USFWS for protected areas within the Study Area. Correspondence with the USFWS reported “no federal wilderness areas, wildlife refuges or designated critical habitat is present within the vicinity” of the Project. ODNR indicated the Miller & Schmidt Scenic Easements, as part of the ODNR Scenic Rivers Program are located within the vicinity of the Project.

Conservation lands are included on Figure A-5, Regional Wildlife Areas (Appendix A)

4.2 Habitats of Biodiversity Significance

The ODNR Division of Natural Areas and Preserves operates the statewide system of nature preserves, natural areas, and scenic rivers in the State, aimed at protecting the remaining natural resources within Ohio, including rare and endangered species, geological features, and pre-settlement history.

Additionally, local county and municipalities operate a similar network of smaller protected natural areas, and have been noted as such through correspondence with ODNR. At the state level, Big Darby Creek State Scenic River, and Little Darby Creek State Scenic River, at the county and city level: Battelle Darby Creek Metro Park, Prairie Oaks Metro, Alton Road Parkland, Blauser Clean Ohio Parkland, and Clover Parkland, and finally The Nature Conservancy operated Big Darby Creek Preserve (located immediately adjacent to the Project Area). These areas are illustrated on Figure A-5.

5 Plant Communities of Concern

The Battelle Darby Creek Metro Park is managed for and supports plant communities that inhabit forested areas, natural grasslands, and wetland habitats. This park supports communities of state threatened and potentially threatened plants including prairie brome, tall larkspur, scaly blazing-star, and showy goldenrod. This park, located adjacent to the Project and within the Study Area, provides a contrast to the other majority land use and habitat types found within the Project and Study Area which are heavily agricultural. These areas are illustrated on Figure A-5.

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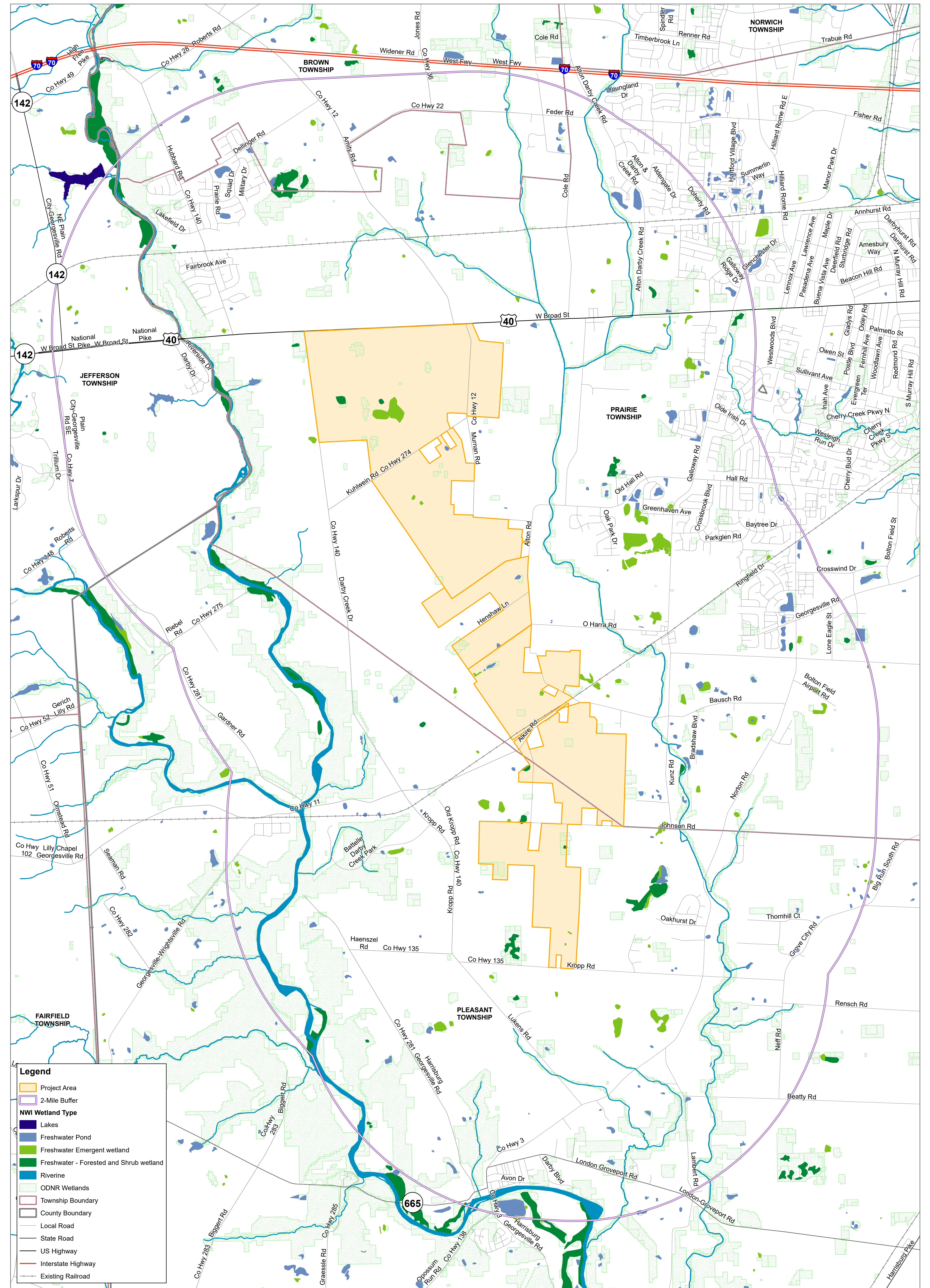
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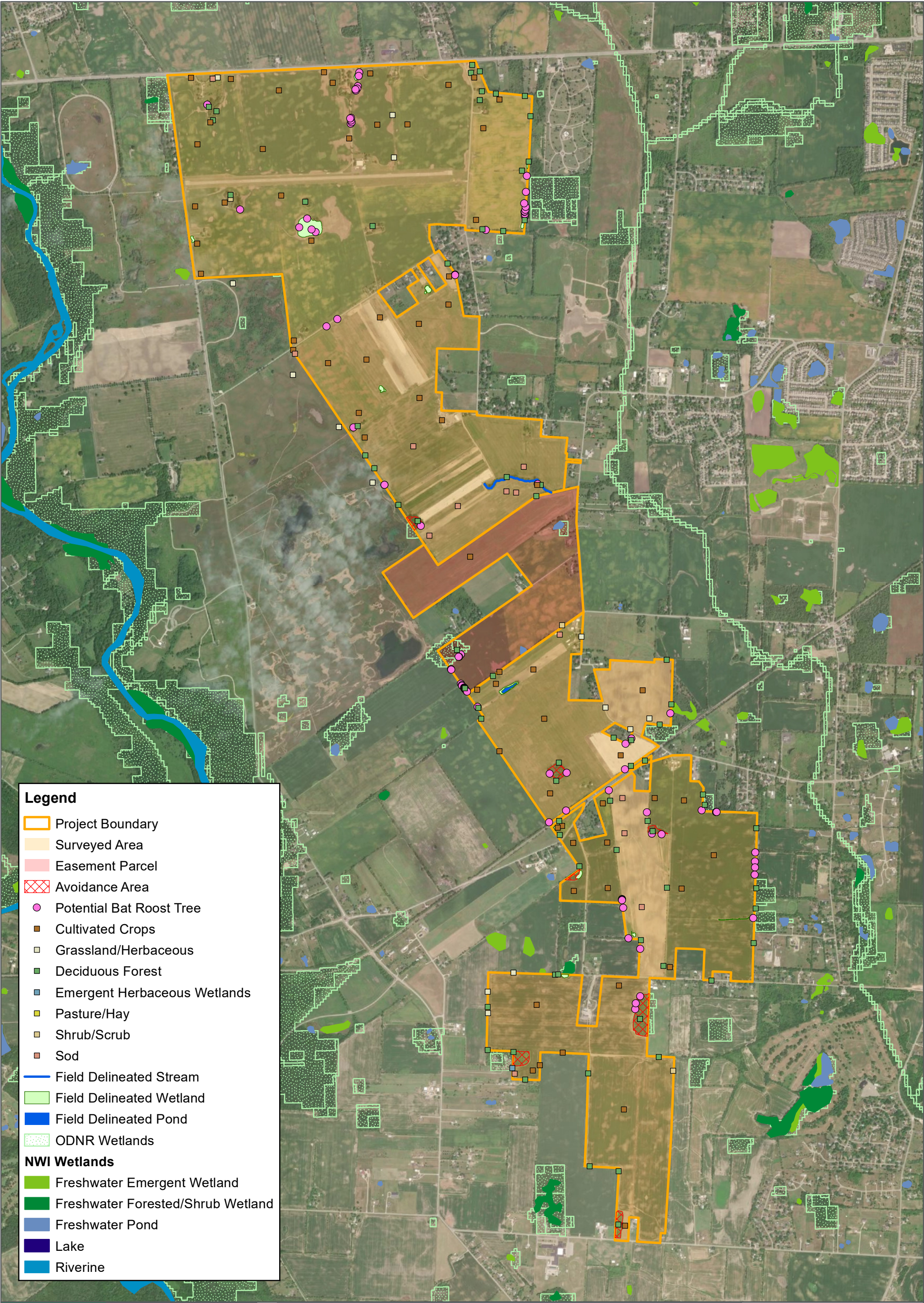
Site Characterization Study Report
Pleasant Prairie Solar Energy Project

APPENDIX

A

PROJECT FIGURES





Legend

- Project Boundary
- Surveyed Area
- Easement Parcel
- Avoidance Area
- Potential Bat Roost Tree
- Cultivated Crops
- Grassland/Herbaceous
- Deciduous Forest
- Emergent Herbaceous Wetlands
- Pasture/Hay
- Shrub/Scrub
- Sod
- Field Delineated Stream
- Field Delineated Wetland
- Field Delineated Pond
- ODNR Wetlands

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

Image: 2019

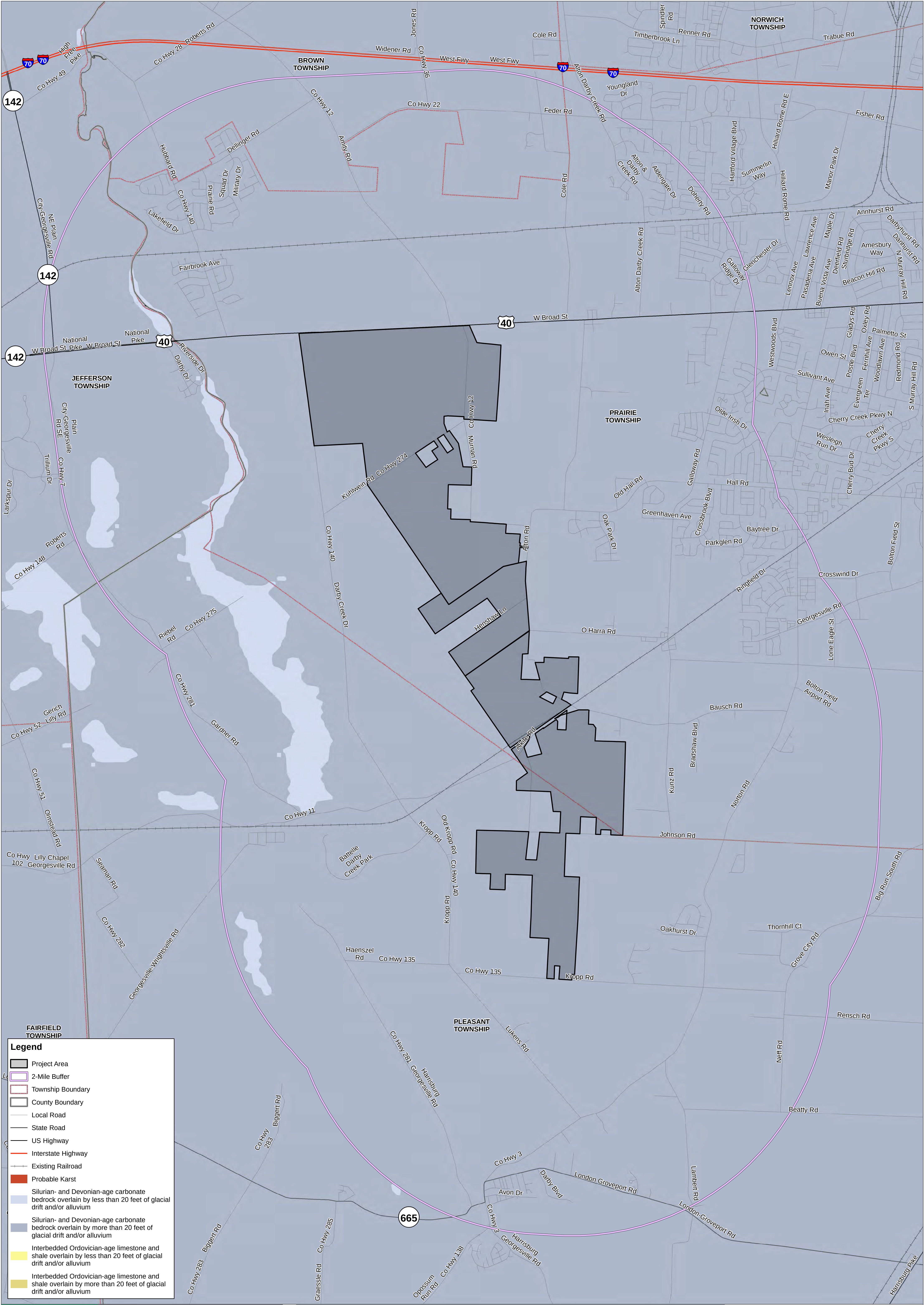
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Figure A-3
Field Delineated Features and Observations

Pleasant Prairie Solar Energy Project
Franklin County, Ohio



121 Continental Drive, Suite 308
Newark, DE 19713
Phone (+1) 302-395-1919 Fax (+1) 302-395-1920
www.cardno.com



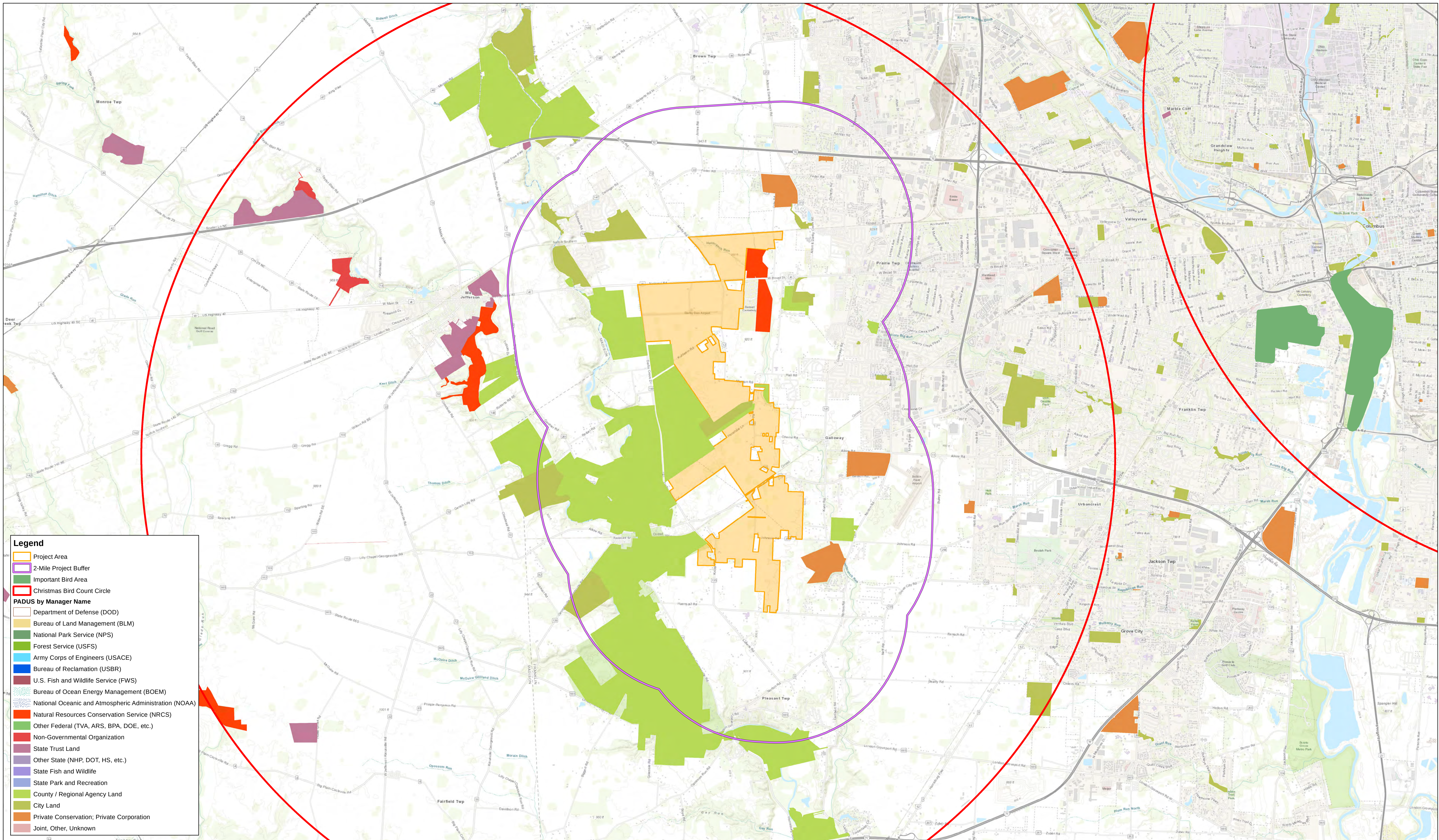


Figure A-5 - Protected Areas
Pleasant Prairie Solar Project
Franklin County, Ohio

Site Characterization Study Report
Pleasant Prairie Solar Energy Project

APPENDIX

B

AGENCY CORRESPONDENCE

From: [Ohio, FW3](#)
To: [Stephanie Healey](#)
Cc: [Parsons, Kate](#); nathan.reardon@dnr.state.oh.us
Subject: Pleasant Prairie Solar Energy Project, Franklin County, Near Galloway OH
Date: Friday, November 13, 2020 10:12:10 AM
Attachments: [Outlook-5i3m4pgd.png](#)
[Outlook-ilkwcdph.png](#)
[Pleasant Prairie Solar - Ibat buffers.pdf](#)



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-0289

Dear Ms. Healey,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the 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. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed 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 travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) 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 and abandoned mines.

The proposed project is in the vicinity of confirmed records of Indiana bats (*see attached pdf file*). Female Indiana bats exhibit strong site fidelity to summer roosting and foraging areas, meaning that they return to the same area, and often the same trees, to roost, year after year. Projects that result in a significant amount of localized forest clearing could result in adverse effects on Indiana bats, even if tree clearing is conducted during the winter season when Indiana bats are not present. 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>).

Additional information is needed on the extent of tree clearing proposed in order for the Service to evaluate the potential impact to Indiana bats, and to determine if seasonal clearing is sufficient to avoid take.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), 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 that 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.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, 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, consultation with the Service should be initiated to assess any potential impacts.

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 ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the 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.

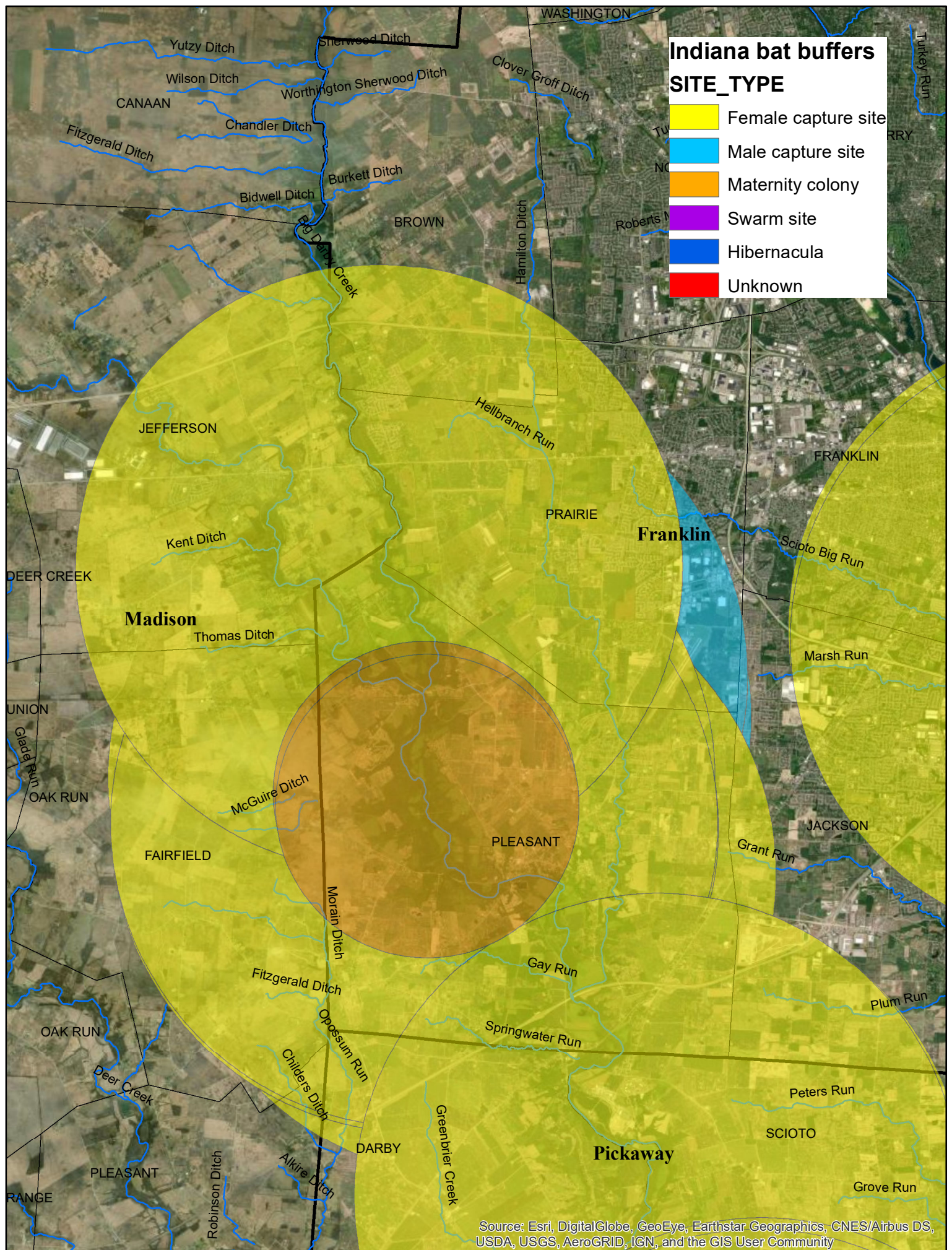
Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice Ashfield", is written over a faint, light blue rectangular background.

Patrice Ashfield

Field Office Supervisor

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





January 20, 2021

Mr. Jeromy Applegate
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
4625 Morse Rd Suite 104
Columbus, OH, 43230

Cardno

121 Continental Drive
Suite 308
Newark, DE 19713
USA

Phone: +1 302 395 1919
Fax: +1 302 395 1920

www.cardno.com

VIA EMAIL: jeromy_applegate@fws.gov

**Subject: Proposed Pleasant Prairie Solar Energy Project
Franklin County, Ohio
RE: Request for Environmental Review for TAILS# 03E15000-2021-TA-0289**

Dear Mr. Applegate:

Thank you for taking the time to discuss the proposed Pleasant Prairie Solar Energy Project (Project) and the anticipated impacts of the preliminary Project design. Pleasant Prairie Solar Energy LLC (Pleasant Prairie) recognizes the potential for the federally endangered Indiana bat (*Myotis sodalist*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*) to occur within the vicinity of the Project, and as such the Project has been designed in a way to minimize impacts to potential bat habitat. Pleasant Prairie conservatively estimates the need to clear up to 7 acres of woody vegetation for the installation of solar panel arrays, access roads, and collection lines for the Project. The enclosed figure (Figure 1) uses aerial imagery to illustrate the impacts due to these installations. It is anticipated that windrows and isolated trees within the Project Area provide minimal habitat for bats. Pleasant Prairie is committed to minimizing tree clearing and observing seasonal tree clearing restrictions and only clear between October 1 and March 31, or as conditions specify.

Additionally, as the Project is sited directly adjacent to the Battelle Darby Creek preserve, Pleasant Prairie intends to utilize a mix of native grasses and pollinator species for ground cover, which will help to enhance the adjacent preserve and avoid the introduction of non-native species into the vegetative community.

We appreciate the opportunity to provide additional information on the Project and request that USFWS provide updated guidance on the potential for impacts to listed bats (or other species) from the construction of the Project. We look forward to your continued coordination on the Pleasant Prairie Solar Energy Project. Please reach out with any questions or if you require additional information to make your determination.

USFWS
January 20, 2021

2

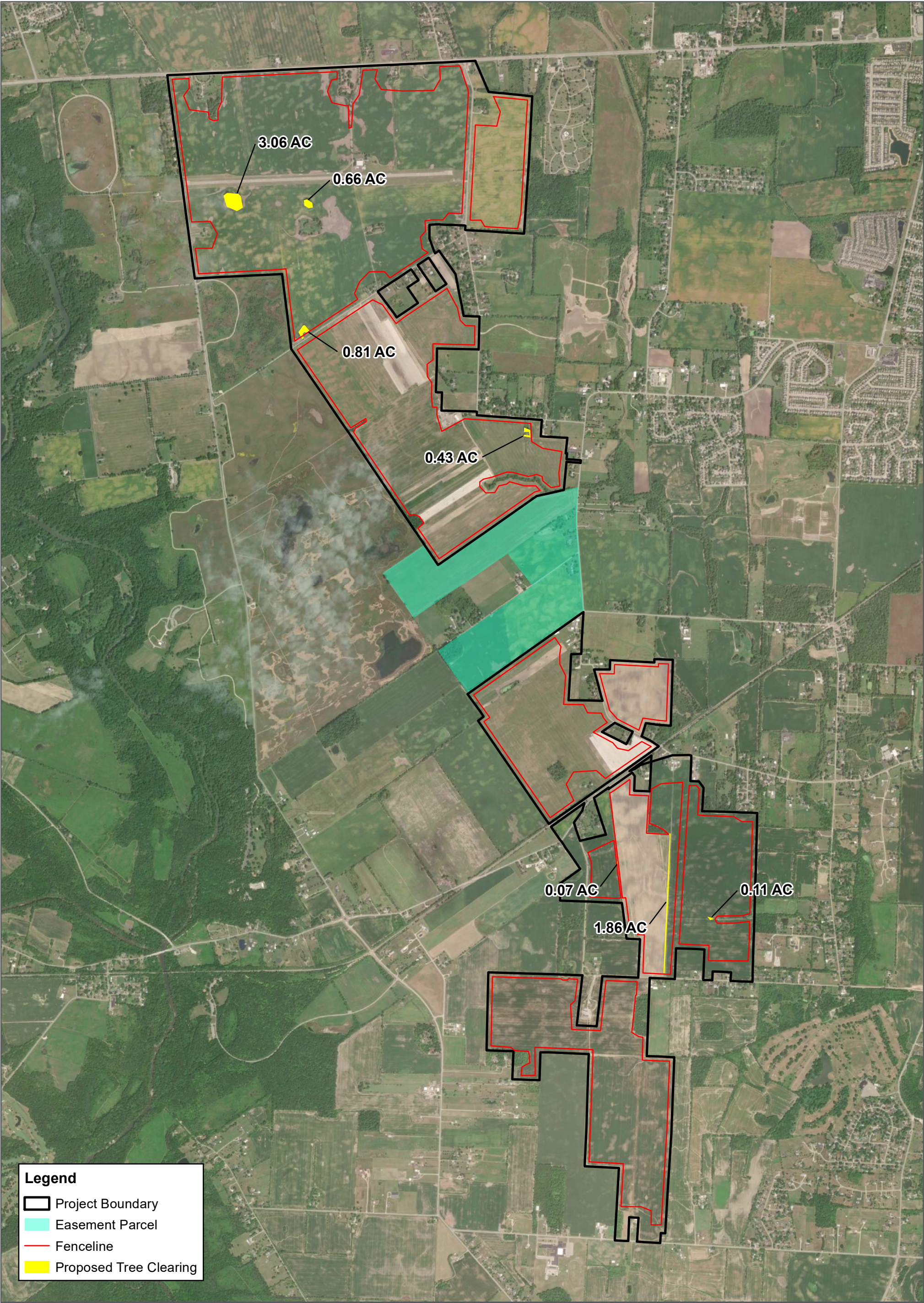


Thank you,

A handwritten signature in blue ink that reads 'Stephanie Healey'.

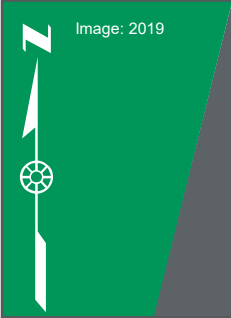
Stephanie Healey
Project Scientist
for Cardno
Direct Line +1 813 367 0985
Email: stephanie.healey@cardno.com

Enclosed: Figure 1. Anticipated Tree Clearing Impacts for the Pleasant Prairie Solar Energy Project



Legend

-  Project Boundary
-  Easement Parcel
-  Fenceline
-  Proposed Tree Clearing



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Anticipated Tree Clearing

Pleasant Prairie Solar Energy Project

Franklin County, Ohio



121 Continental Drive, Suite 308
Newark, DE 19713
Phone (+1) 302-395-1919 Fax (+1) 302-395-1920
www.cardno.com

From: [Ohio, FW3](#)
To: [Ryan Rupprecht](#)
Cc: [asasson@aol.com](#); [jeromy_applegate@fws.gov](#); [Stephanie Healey](#); [Wojcikiewicz, John](#)
Subject: Pleasant Prairie Solar Energy Project, Franklin County, Ohio
Date: Tuesday, January 26, 2021 10:10:13 AM
Attachments: [pastedImagebase640.png](#)
[pastedImagebase641.png](#)



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-0289

Dear Mr. Rupprecht,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

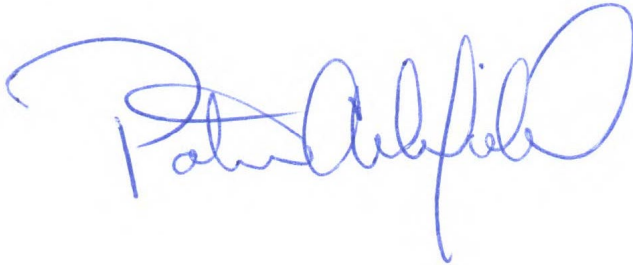
FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, 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, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that 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.

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.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the 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 M. Ashfield". The signature is fluid and cursive, with a large initial "P" and "A".

Patrice M. Ashfield
Field Office Supervisor

cc: Anthony Sasson (Darby Creek Association)



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

December 7, 2020

Stephanie Healey
Cardno
3905 Crescent Park Drive
Riverview, Florida 33578

Re: 20-990; Pleasant Prairie Solar Energy Project

Project: The proposed project involves the construction of a 250-megawatt solar facility.

Location: The proposed project is located in Prairie and Pleasant Townships, Franklin 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 the following records at or within a one-mile radius of the project area:

Prairie brome (*Bromus kalmii*), P
Tall larkspur (*Delphinium exaltatum*), P
Scaly blazing-star (*Liatris squarrosa*), P
Showy goldenrod (*Solidago speciose*), T
Purple wartyback (*Cyclonaias tuberculata*), SS
Northern Riffleshell (*Epioblasma rangiana*), E, FE
Snuffbox (*Epioblasma triquetra*), E, FE
Wavy-rayed lampmussel (*Lampsilis fasciola*), SC
Clubshell (*Pleurobema clava*), E, FE
Kidneyshell (*Ptychobranhus fasciolaris*), SC
Salamander mussel (*Simpsonaias ambigua*), SC
Rabbitsfoot (*Theliderma cylindrica*), E, FT
Fawnsfoot (*Truncilla donaciformis*), T
Pondhorn (*Uniomereus tetralasmus*), T
Rayed bean (*Villosa fabalis*), E, FE
Lake chubsucker (*Erimyzon sucetta*), T

Iowa darter (*Etheostoma exile*), E
Spotted darter (*Etheostoma maculatum*), E
Tippecanoe darter (*Etheostoma tippecanoe*), T
Blacknose shiner (*Notropis heterolepis*), X
Upland sandpiper (*Bartramia longicauda*), E
American bittern (*Botaurus lentiginosus*), E
Least bittern (*Ixobrychus exilis*), T
Indiana bat (*Myotis sodalis*), E, FE
Badger (*Taxidea taxus*), SC
Big Darby Creek State Scenic River
Little Darby Creek State Scenic River
Miller & Schmidt Scenic River Easements – ODNR Scenic Rivers Program
Battelle Darby Creek Metro Park – Columbus & Franklin Co. Metro Parks
Prairie Oaks Metro Park – Columbus & Franklin Co. Metro Parks
Big Darby Creek Preserve – The Nature Conservancy
Alton Road Parkland – Columbus Recreation & Parks
Blauser Clean Ohio Parkland – Columbus Recreation & Parks
Clover Parkland – Columbus Recreation & Parks

The review was performed on the project area specified in the request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

A Conservation Site is an area deemed by the Natural Heritage Database to be a high-quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

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.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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. 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 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 project is within the vicinity of records for 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, and the little brown bat (*Myotis lucifugus*), a state endangered species. Because presence of state endangered bat species has been established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

In addition, 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 bat species 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. The DOW recommends tree 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.

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 following listed mussel species.

Federally Endangered

purple cat’s paw (*Epioblasma o. obliquata*)

clubshell (*Pleurobema clava*)

northern riffleshell (*Epioblasma torulosa rangiana*)

rayed bean (*Villosa fabalis*)

snuffbox (*Epioblasma triquetra*)

Federally Threatened

rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Endangered

long solid (*Fusconaia maculata maculate*)

Ohio pigtoe (*Pleurobema cordatum*)

pocketbook (*Lampsilis ovata*)

washboard (*Megaloniaias nervosa*)

elephant-ear (*Elliptio crassidens crassidens*)

State Threatened

black sandshell (*Ligumia recta*)

threehorn wartyback (*Obliquaria reflexa*)

pondhorn (*Unio merus tetralasmus*)

fawnsfoot (*Truncilla donaciformis*)

This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area,

as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at:
<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The project is within the range of the following listed fish species.

Federally Endangered

Scioto madtom (*Noturus trautmani*)

State Endangered

goldeye (*Hiodon alosoides*)

Iowa darter (*Etheostoma exile*)

popeye shiner (*Notropis ariommus*)

northern brook lamprey (*Ichthyomyzon fossor*)

spotted darter (*Etheostoma maculatum*)

shortnose gar (*Lepisosteus platostomus*)

tonguetied minnow (*Exoglossum laurae*)

State Threatened

lake chubsucker (*Erimyzon sucetta*)

paddlefish (*Polyodon spathula*)

Tippecanoe darter (*Etheostoma tippecanoe*)

The DOW recommends no in-water work in perennial streams from April 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.

Breeding has been documented within the vicinity of the project area for the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the black-crowned night-heron (*Nycticorax nycticorax*), a state-threatened bird. Night-herons are so named because they are nocturnal, conducting most of their foraging in the evening hours or at night, and roost in trees near wetlands and waterbodies during the day. Night herons are migratory and are typically found in Ohio from April 1 through December 1 but can be found in more urbanized areas with reliable food sources year-round. Black-crowned night-herons primarily forage in wetlands and other shallow aquatic habitats, and roost in trees nearby. These night-herons nest in small trees, saplings, shrubs, or sometimes on the ground, near bodies of water and wetlands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the cattle egret (*Bubulcus ibis*), a state endangered bird. Cattle egrets are not strictly wetland birds. They often forage in dry pastures and fields. Egrets nest in

colonies and will build a nest out of sticks and other materials wherever it can be supported. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 15. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the lark sparrow (*Chondestes grammacus*), a state endangered bird. This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and shrubby fields along sandy beach ridges. These summer residents normally migrate out of Ohio shortly after their young fledge or leave the nest. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to June 30. If this habitat will not be impacted, this project is not likely to impact this species.

Breeding has been documented within the vicinity of the project area for the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

Breeding has been documented within the vicinity of the project area for the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this 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 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

Breeding has been documented within the vicinity of the project area for the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact 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.

Natural Areas: The Ohio Scenic Rivers Program has the following comment.

The Ohio Scenic Rivers Program appreciates the opportunity to review the proposed Pleasant Prairie Solar Energy Project in Pleasant and Prairie townships, Franklin County, Ohio. The project is located within the watershed of the Big Darby Creek State and National Scenic River. Big Darby Creek is one of the most outstanding rivers in Ohio. Together with the Little Darby Creek, it provides habitat to the greatest diversity of freshwater mussels of any river of its size in the Midwest, including federally endangered species.

While the Ohio Scenic Rivers Program does not have regulatory authority regarding the Pleasant Prairie Solar Energy Project, we submit the following recommendations for your consideration as an enormous opportunity to enhance local ecology and hydrology for the benefit of the river and the surrounding communities. A broad coalition of private and public partners, including the Ohio Department of Natural Resources, have invested in the protection of this resource for over thirty years. Approximately \$120 million has been invested to date in habitat protection, and many millions of dollars more in land use planning, restoration and ongoing resource management. We hope you will join us as a partner in this important effort.

Should Invenergy choose to implement the recommendations below, they should be incorporated into the general notes of the project design and/or plan set. Construction best management practices (BMPs) should be implemented before earthwork commences and be adhered to for the duration of the project.

Project Siting: This project is located adjacent to large areas of prairie and wetland restoration within Battelle Darby Creek Metro Park that contribute to the protection and enhancement of Big Darby Creek and comprise a premiere central Ohio bird habitat and recreational amenity. The Hellbranch Meadows restoration project (completed by Franklin Soil and Water Conservation District) is also located nearby to the east. As such, special care should be taken to protect the water quality of the Big Darby Creek, improve habitat and connect recreational and habitat features:

- Conduct an environmental resources survey, including delineation of wetlands and streams, prior to PUCO approval.
- Avoid existing wetlands and provide a buffer of native vegetation to allow for hydraulic and habitat functions.
- Create habitat connections with native vegetation between existing wetlands on the project site and to wetlands on Metro Park property to provide for wildlife migration corridors.
- Preserve forested areas of three acres or more.
- Preserve existing streams (including ephemeral and intermittent streams and the perennial Hellbranch Run) and preserve / create vegetative buffers (see SWPPP development below).
- Provide for recreational trail connection to the Metro Park and Hellbranch Meadows areas.

Native prairie flower and grass planting: The Ohio Pollinator Habitat Initiative has developed a Solar Site Pollinator Habitat Planning and assessment form (<http://www.ophi.info/>). The Scenic

Rivers program recommends that Invenergy achieve a score of 85 or greater on this form. Establishing flowering plants on at least 50% of the site is a primary BMP listed to meet this goal. While beneficial to pollinators, the root systems of such plants will also enhance the infiltration of precipitation into the soil. Increased infiltration will reduce runoff, in-stream habitat disturbance and flooding, and will increase the recharge of groundwater that provides vital flow to Big Darby Creek and tributary streams during dry months.

In addition, we recommend that seed mixes be limited to native species, and that they incorporate native prairie grasses. The project site is located within an historic warm season prairie region known as the Darby Plains. Incorporating grasses and flowering plants native to this region will help protect and enhance Darby Plains restoration efforts already underway by conservation partners, including those immediately adjacent to the project site at Battelle Darby Creek Metro Park.

Storm Water Pollution Prevention Plan (SWPPP): A Notice of Intent (NOI) must be submitted to obtain coverage under the Ohio EPA General Stormwater Permit for Construction Projects. The NOI must be submitted 21 days prior to construction. Copies of NOI forms and Instructions can be found at <http://epa.ohio.gov/dsw/storm/stormform.asp>. A SWPPP must be developed specific for the project to address sediment and erosion controls in compliance with the permit. The SWPPP must be submitted for review to the attention of the appropriate district office's Ohio EPA Storm Water Coordinator prior to construction.

- A. **Erosion Controls:** A sediment and erosion control plan should be developed for the site and implemented before earthwork commences. Particular attention should be given to any drainage ways, ditches and streams that could convey sediment laden water directly to state scenic rivers. Properly installed (framed and entrenched) sediment fence should be utilized around the work site perimeter and storm water inlets. Appropriately designed rock-check dams and other erosion controls should be utilized in ditches and drainage ways. All controls should be properly maintained until final site stabilization is achieved. All sediment and erosion controls should be removed upon stabilization of the project area with vegetation. Straw bales should not be permitted as a form of erosion control. All denuded areas, including ditches, culverts and river/stream banks should be permanently seeded and mulched (or fiber mat) immediately upon completion of earthwork or temporarily seeded and mulched (or fiber mat) within 7 days if the area is to remain idle for more than 30 days.
- B. **Trench and Groundwater De-watering:** No wastewater of any kind should be directly discharged into any of drainage ways or ditches. Any water pumped from open trenches should be passed through a sediment impoundment structure that provides for complete settling of all suspended solids or pumped onto a vegetated area a sufficient distance from the stream so as to provide for complete infiltration. Adequate outlet protection must be provided for each impoundment. There should be no discharges of turbid water to State Scenic Rivers or their tributaries.
- C. **Runoff Infiltration:** Permits issued within the Big Darby Creek watershed contain requirements for runoff infiltration. The Scenic Rivers Program recommends that Invenergy meet or exceed these requirements through long-

chain treatment systems that include native prairie flower and grass plantings, bioswales, raingardens and infiltration trenches. Invenergy should also find and disable existing farm drain tiles throughout the site.

D. **Riparian setbacks:** The Scenic Rivers Program recommends that Invenergy adhere to the riparian setbacks required for projects in the Big Darby Creek watershed. The permit states that riparian setbacks shall be sized as the greater of the following:

- i. The regulatory 100-year floodplain based on FEMA mapping;
- ii. A minimum of 100 feet from the top of the streambank on each side; or
- iii. A distance calculated based on the width of the stream's meander pattern using the following equation: $W = 133DA^{0.43}$

Where:

DA = drainage area (mi²)

W = total width of riparian setback (ft)

Notification: The Scenic Rivers Program would appreciate receiving additional planning information and construction dates for this project. Please contact the Central Ohio Regional Scenic Rivers Program Manager, Heather Doherty, at (740) 258-0567 or heather.doherty@dnr.ohio.gov.

Geological Survey: The Division of Geological Survey has the following comment.

Physiographic Region

The proposed project area is in Pleasant and Prairie Townships, Franklin County. This area is in the Darby Plain physiographic region. This region is characterized by moderately low relief and few large streams. The region is primarily made up of broadly hummocky ground moraine and includes several indistinct recessional moraines. Loamy till that is Wisconsinan in age with a high lime concentration covers Silurian and Devonian-aged carbonate and shale bedrock (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-aged glacial features. The project area is covered by the relatively flat, gently undulating, continuous Darby Till of the Wisconsinan ground moraine. The southern portion of project area has a high concentration of surface boulders (Pavey et al, 1999). Glacial drift throughout most of the study area is between 57 and 250 feet thick. Drift is thinnest in the western portion of the study area and thickest along the eastern edge of the study area (Powers and Swinford, 2004).

Bedrock Geology

The uppermost bedrock unit in the project area is the Columbus Limestone. This unit is Devonian-aged and consists of bluish gray to brown fossiliferous limestone. The unit may be dolomitic in places and frequently contains solution features. This unit makes up much of the northern portion of the project area. Underlying the Columbus Limestone is the Silurian-aged Salina Undifferentiated. This unit is characterized by a gray to brown dolomite which contains argillaceous partings, brecciated intervals, algal laminations and anhydrite/gypsum zones. It should be noted that bedrock is not exposed at the surface within the boundaries of the project area due to significant glacial drift (Slucher et al, 2006).

Oil, Gas and Mining

ODNR has record of two oil and gas wells within one mile of the proposed project area. These wells are listed as Plugged and abandoned (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 is the remains of the released Madison Stone Quarry located 2.3 miles to the west of the project area (Ohio Department of Natural Resources, Division of Mineral Resources, *Mines of Ohio*).

Seismic Activity

Few earthquakes have historically been recorded near the site. 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
October 21, 2013	2.0	15.4 miles	Pickaway	Jackson
January 4, 1873	3.8	18.9 miles	Delaware	Orange
October 4, 1980	2.0	29.7 miles	Clark	Green

Karst

Karst features usually form in areas that are covered by thin or no glacial drift and the bedrock is limestone or dolomite. There are no sinkholes within the bounds of the project area. Although the underlying Columbus Limestone, and Salina Formation are composed of carbonate bedrock which can be prone to the development of karst features, the thickness of drift makes sinkhole development unlikely. The nearest verified sinkhole is 0.5 miles to the west of the project area (Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Karst*).

Soils

According to the USDA Web Soil Survey, the project area consists primarily of soils derived from glacial till, outwash and alluvium. Kokomo, Lewisburg, and Crosby are the most common soil series found within the boundaries of the project area. Together these soils cover over 91% of the project area and have a silty clay loam soil texture (USDA Web Soil Survey).

There is a low to moderate risk of shrink-swell potential in these soils. Slope is variable within the hummocky ground moraine but seldom exceeds a 6% grade. (McLoda and Parkinson, 1980 and USDA Web Soil Survey).

Groundwater

Groundwater resources are plentiful throughout the project area. Wells developed in bedrock are likely to yield more than 100 gallons per minute. Bedrock groundwater yields are exceptional throughout the project area (Schmidt, 1993 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. The lowest unconsolidated aquifer yields are in the western portion of the project area. 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 1323 water wells drilled within one mile of the project area. These wells range in depth from 7.1 to 280 feet deep, with an average depth of 127 feet. The most common

aquifer is Limestone. Limestone, limestone and shale, rock or stone are listed as the primary aquifer on 688 water well records. The remaining records list clay and rock or sand and gravel as the aquifer. A sustainable yield of 4 to 150 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 23 gallons per minute. This is based on records from 267 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)

References:

- McLoda, N.A., and Parkinson, R.J., (1980) Soil Survey of Franklin County, Ohio. United States Department of Agriculture, Natural Resources Conservation Science. Retrieved from nrcs.usda.gov
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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>.



OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING JUNE 2020

Agency Contacts:

ODNR-DOW Permit Coordinator: Wildlife.Permits@dnr.state.oh.us, (614) 265-6315

ODNR-DOW Bat Survey Coordinator: Sarah Stankavich, sarah.stankavich@dnr.state.oh.us, (614) 265-6764

Due to the evolving situation with COVID-19, we are temporarily suspending bat-handling activities until more is known about the risk to North American bats. This document has been updated with new state guidance for the 2020 field season only, or until bat-handling activities are reinstated. These guidelines replace previous guidelines released in March 2020.

This guidance applies to state recommendations only. Contact the USFWS to determine if federal consultation is also necessary to comply with federal law.

Ohio Mist Net Surveys:

Mist-netting for presence/absence surveys, education events, or research activities will not be authorized for the 2020 season.

Ohio Acoustic Surveys:

Acoustic bat surveys for presence/absence will be accepted by ODNR for the 2020 season. Surveys should follow guidelines laid out in the USFWS Range-wide Indiana Bat Survey Guidelines (March 2020) with the following exceptions:

- Ohio survey dates are June 1 – August 15, 2020
- After conducting automated analyses using one or more of the currently available ‘approved’ acoustic bat ID programs¹, qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species (*Myotis sodalis*, *M. septentrionalis*², *M. lucifugus*², and *Perimyotis subflavus*²) must be completed.
 - At a minimum, for each detector site/night a program considered presence of state-listed bats likely, review all files (including no IDs) from that site/night. If more than one acoustic bat ID program is used, qualitative analysis must also include a comparison of the results of each program by site and night.

During Field Season:

- **Prior to initiation of field work (a minimum of two weeks in advance)**, permittees must provide proposed survey plans to ODNR-DOW via e-mail. **Plans must be reviewed and approved by ODNR-DOW before ANY surveys take place.** Study plans must specify objectives, location details, dates of proposed work, and all other relevant details.

¹ <https://www.fws.gov/midwest/Endangered/mammals/inba/surveys/inbaAcousticSoftware.html>

² State listing as endangered effective July 1, 2020

After Field Season:

- By March 15, you must submit your final ODNR-DOW report(s) from the previous summer. You are not required to fill out the ODNR-DOW Wildlife Diversity Bat Excel Spreadsheet; instead, please forward your USFWS Midwestern US Spreadsheet (found here: <http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>) to the ODNR-DOW Bat Survey Coordinator and ODNR-DOW Permit Coordinator and include your state permit number along with an electronic copy of the project report. Electronic summaries emailed during the field season are NOT considered as full compliance of this reporting requirement.

Ohio Environmental Review Recommendations for projects involving disturbance near potential/known bat hibernacula (cliffs, caves, mines) or tree cutting:

Step 1: Coordinate with Ohio Division of Wildlife (DOW) regarding existing records for state-listed endangered bat summer and/or winter occurrence information.

If project site contains a known bat hibernaculum(a) –

- For state-listed endangered species other than the Indiana bat, a recommendation of 0.25-mile tree cutting buffer around all known entrances to protect existing conditions at the hibernaculum(a). If the project involves subsurface disturbance, consultation with DOW is required.
- Limited summer and winter tree cutting may be permitted within the buffer following guidelines detailed below. Coordinate with DOW before cutting.

If a project site does not contain known bat hibernaculum(a)

- Conduct a habitat assessment (desktop or field-based, using methods detailed in current USFWS Range-wide Indiana Bat Guidelines) to determine if a potential hibernaculum(a) is present within the action area.

Step 2: When conducted, a presence/absence survey must follow current DOW guidelines.

Step 3: If a state-listed endangered bat is captured or recorded during the survey:

- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 5 miles of the capture site if a roost is not located.
- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 2.5 miles of a roost tree if located.

If no state-listed endangered bat is captured or recorded during the survey:

- Summer tree cutting may proceed for 5 years before a new survey is needed under state guidance.

Limited summer tree cutting guidance for bats that are only state-listed endangered: Limited tree cutting in summer may be permitted after consultation with DOW, but clearing trees with the following characteristics should be avoided unless they pose a hazard: dead or live trees of any size with loose, shaggy bark; crevices, holes, or cavities; live trees of any species with DBH $\geq$ 20.

FREQUENTLY ASKED QUESTIONS

When does the Bat Survey protocol have to be used?

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio. For 2020 only, acoustic surveys will meet the ODNR-DOW requirements unless new guidance allowing for the handling of bats during presence/absence surveys is released from USFWS.

How many net surveys are required for presence/probably absence?

As described in the current USFWS Range-wide Indiana Bat Guidelines: Linear projects: a minimum of 2 detector nights per km (0.6 miles) of suitable summer habitat

Non-linear projects: a minimum of 8 detector nights per 123 acres (0.5 km²) of suitable summer habitat. At least 2 detector locations per 123 acre "site" shall be sampled until at least 8 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 4 detectors for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 4 nights each (can sample the same location or move within the site)
- 1 detector for 8 nights (must sample at least 2 locations and move within the site)

How long are the results of the surveys valid for an assessment of an area?

Mist-net or acoustic surveys documenting probable absence of state-listed endangered bats are valid for five years.

When can acoustic surveys occur in Ohio?

In Ohio, acoustic surveys may only be conducted from June 1 through August 15 unless indicated otherwise in your state permit. Any surveys outside of the June 1 - August 15 timeframe cannot be used in Ohio to assess the presence/probable absence of state-listed bats.

Can a presence/probable absence survey be conducted within a known Indiana bat and/or northern long-eared bat capture/detection buffer?

Surveys generally cannot be used to document presence/probable absence of state-listed endangered bats where presence of the species has already been confirmed by prior surveys.

What if a project is proposing to clear trees between April 1 and September 30 when bats may be present but no bat records exist in the project area?

Any Ohio project that is not within a known bat record buffer, and tree clearing between April 1 and September 31 is being proposed, may have a presence/absence survey conducted between June 1 and August 15 following the range-wide guidance. If a presence/absence survey is not performed, presence of listed bats is assumed.

How does take of northern long-eared bats differ from Indiana bats?

Under Ohio law, there is no exemption for take of any listed bat species.

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: 0

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



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

2/19/2021 11:45:07 AM

in

Case No(s). 20-1679-EL-BGN

Summary: Application - 4 of 25 (Exhibit B - Site Characterization Report) electronically filed by Christine M.T. Pirik on behalf of Pleasant Prairie Solar Energy LLC