

June 9, 2021

Ms. Tanowa Troupe, Secretary  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, Ohio 43215-3797

**Re: Case No. 20-1679-EL-BGN - In the Matter of the Application of Pleasant Prairie Solar Energy LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Franklin County, Ohio.**

**Response to Fifth Data Request from Staff of the Ohio Power Siting Board**

Dear Ms. Troupe:

Attached please find Pleasant Prairie Solar Energy LLC's ("Applicant") Response to the Fifth Data Request from the staff of the Ohio Power Siting Board ("OPSB Staff"). The Applicant provided this response to OPSB Staff on June 9, 2021.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

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Ms. Tanowa Troupe  
Pleasant Prairie Solar Energy LLC  
Case No. 20-1679-EL-BGN  
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### CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 9<sup>th</sup> day of June, 2021.

/s/ Christine M.T. Pirik

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4836-3012-1452 v1 [39579-53]

**BEFORE  
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Pleasant Prairie Solar )  
Energy LLC for a Certificate of Environmental )  
Compatibility and Public Need to Construct a Solar- ) Case No: 20-1679-EL-BGN  
Powered Electric Generation Facility in Franklin County, )  
Ohio. )

**PLEASANT PRAIRIE SOLAR ENERGY LLC 'S  
RESPONSE TO THE FIFTH DATA REQUEST  
FROM THE STAFF OF THE OHIO POWER SITING BOARD**

On February 19, 2021, as supplemented on April 7 and 21, 2021, Pleasant Prairie Solar Energy LLC (“Applicant”) filed an application (“Application”) with the Ohio Power Siting Board (“OPSB”) proposing to construct a solar-powered electric generation facility in Franklin County, Ohio.

On May 26, 2021, the Staff of the OPSB (“OPSB Staff”) provided the Applicant with OPSB Staff’s Fifth Data Request. Now comes the Applicant providing the following response to the Fifth Data Request from the OPSB Staff.

1. **Please provide an update on coordination/concurrence from the Ohio Historic Preservation Office (OHPO) on specific avoidance or mitigation measures for impacts from the project on archaeological and historic/architecture sites.**

**Response:** The attached Memorandum of Understanding (“MOU”) has been finalized in review from both the Applicant and SHPO, and is currently in process to be executed by both parties. An executed version will be submitted to the OPSB as soon as it is fully executed.

Respectfully submitted,

/s/ Christine M.T. Pirik  
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*Attorneys for Pleasant Prairie Solar Energy LLC*

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE OHIO STATE HISTORIC PRESERVATION  
OFFICE AND SYCAMORE CREEK SOLAR, LLC REGARDING THE  
SYCAMORE CREEK SOLAR ENERGY PROJECT IN  
CRAWFORD COUNTY, OHIO**

**WHEREAS**, on February 19, 2021 Pleasant Prairie Solar Energy LLC (“Pleasant Prairie Solar”) submitted an application for a Certificate of Environmental Compatibility and Public Need in Case No. 20-1679-EL-BGN (“Certificate”) to the Ohio Power Siting Board (“OPSB”), and intends to operate the Pleasant Prairie Solar Energy Center Project (“Project”), an up to 250 MW solar-powered electric generating facility to be located in Pleasant and Prairie Townships in Franklin County, Ohio.

**WHEREAS**, a Phase I Archaeological Reconnaissance Survey and Report and a Phase 1 History Architecture Reconnaissance Survey and Report were completed (collectively, the “Reports”);

**WHEREAS**, Pleasant Prairie Solar and the Ohio State Historic Preservation Office (“SHPO”) established an Area of Potential Effects (“APE”) for the Survey to include the area of potential ground disturbance and any property that may be physically altered or destroyed by the Project, as well as a visual radius around the Project for visual impacts; and

**WHEREAS** the Reports identified cultural resources of archaeological or architectural significance;

**WHEREAS**, the archaeological sites 33-Fr-3401, 33-Fr-3412, 33-Fr-3413, and 33-Fr-3425 were identified within the boundaries of the Project and determined through SHPO consultation to be potentially eligible for the NRHP;

**WHEREAS**, seventeen architectural resources were identified within the visual APE of the Project through the Survey (Ohio Historic Inventory Ref. Nos. FRA1094528, FRA0194328, FRA1094728, FRA0176528, FRA0176628, FRA1094928, FRA1095227, FRA1095327, FRA1095527, FRA0175928, FRA1095128, FRA0176028, FRA0176128, FRA0176228, FRA0176828, FRA0176928, and FRA0875528), which have been determined as individually eligible for listing in the National Register of Historic Places (“NRHP”);

**WHEREAS**, five of the seventeen resources were preliminarily identified in the Phase 1 History Architecture Reconnaissance Survey and Report as having potential indirect adverse effects due to visual impacts from the Project (Ohio Historic Inventory Ref. No. FRA0176628, FRA1094928, FRA1095327, FRA1095527 and FRA1095128);

**WHEREAS**, adverse impacts from the Project are not anticipated to resources FRA1095527 and FRA1095128 due to their distance from the Project, existing vegetation in the direct vicinity of these resources that assist with screening, existing vegetation at greater distances from the resources that help to obscure portions of the Project’s aboveground infrastructure from view, and the continued traditional agricultural use of the surrounding landscape;

**WHEREAS**, Pleasant Prairie Solar utilized its currently proposed Landscape Mitigation Plan as submitted in their application (Exhibit E) to the OPSB to address visual impacts to resources FRA0176628, FRA1094928, and FRA1095327 from the Project and propose strategies to mitigate adverse impacts, a copy of which is attached as **Appendix A**. A final landscape plan will be provided to OPSB and SHPO for review prior to construction; based on final design; however, the historic properties screening



Plan (**Appendix B**) depicts vegetation mitigation plans as related to the historic properties referenced herein. In addition, Invenenergy has submitted voluntary filing to the OPSB (**Appendix C**) further defining the extent of Module 3 screening that will occur in association with the Project.

**WHEREAS**, Effects and Mitigation Measures for the foregoing resources have been identified as **Appendices A and B**.

**NOW, THEREFORE**, the SHPO and Pleasant Prairie Solar agree in this Memorandum of Understanding (“MOU”) as follows:

## **I. RECITALS**

The recitals set forth above are incorporated into and are made a part of this MOU.

## **II. STIPULATIONS**

- A. The SHPO agrees that the provisions of **Appendices A and B** specific to the foregoing identified resources the associated resource specific mitigation measures adequately address the impacts to the resources identified in the recitals to this MOU.
- B. The SHPO and Pleasant Prairie Solar agree that if the Project is constructed, the Project shall be implemented in accordance with the following stipulations to account for the effect of the Project on historic resources.
  - 1. Pleasant Prairie Solar will avoid ground disturbance in the designated avoidance areas for archaeological sites 33-Fr-3401, 33-Fr-3412, 33-Fr-3413, and 33-Fr-3425. Construction fencing will be placed within the 50-foot buffer of these resources, near the buffer edge, prior to construction to physically demarcate the area from construction personnel, indicating avoidance. This fencing will be maintained in good condition throughout the duration of construction.
  - 2. Subject to paragraph 3 below, Pleasant Prairie Solar will implement a project-specific Landscape Mitigation Plan to mitigate for adverse effects.
  - 3. Pleasant Prairie Solar may revise the Landscape Mitigation Plan upon development of the Project’s final facility layout subject to the following conditions:
    - a. The revised Landscape Mitigation Plan shall not remove planned vegetative screening between any of the aboveground Project components and architectural resources FRA0176628, FRA1094928, and FRA1095327.
    - b. Changes to the Landscape Mitigation Plan that do not impact views to the resources identified in paragraph (a) above are not subject to SHPO review.

- c. Any reduction in screening between aboveground project components and the resources identified in paragraph (a) above shall not occur unless an amendment to this MOU is executed pursuant to Section IV of this MOU.

### **III. POST-REVIEW DISCOVERIES**

1. In the event that Pleasant Prairie Solar discovers a previously unidentified site within the APE that may be eligible for listing in the NRHP that would be affected by the Project, Pleasant Prairie Solar shall promptly stop work in the immediate area of the unidentified site and notify the SHPO within 48 hours of the discovery. If Pleasant Prairie Solar and SHPO concur that the discovered resource is eligible for listing in the NRHP, Pleasant Prairie Solar will consult with the SHPO to evaluate measures that will avoid, minimize, and/or mitigate adverse effects. Upon agreement between Pleasant Prairie Solar and SHPO regarding such measures, Pleasant Prairie Solar shall implement the measures and notify the OPSB through its Staff of the implementation of the measures.
2. If Pleasant Prairie Solar discovers any human or burial remains during implementation of the Project, Pleasant Prairie Solar shall cease work immediately in the surrounding area, notify the SHPO and the OPSB's Staff and adhere to applicable state and federal laws regarding the treatment of human or burial remains.

### **IV. AMENDMENTS**

This MOU may be amended upon the written agreement of the SHPO and Pleasant Prairie Solar. The amendment will be effective on the date a copy is signed by all parties unless otherwise stated and agreed to in the amendment.

### **V. TERMINATION**

If Pleasant Prairie Solar determines that the terms of this MOU will not or cannot be carried out, they shall immediately consult with the SHPO to attempt to develop an amendment per Section IV of this MOU. If terms of an amendment cannot be reached within thirty days, the MOU may be terminated upon written notification to the SHPO.

Should the OPSB deny Pleasant Prairie Solar's application for a Certificate and such order of the OPSB becomes final and non-appealable, then either party may terminate this MOU at its discretion by providing written notice to the other party.

### **VI. DURATION**

This MOU is effective upon its execution by both the SHPO and Pleasant Prairie Solar and shall remain in effect leading up to and upon receipt of a Certificate issued by the OPSB to Sycamore Creek Solar or any subsequent transferee. Thereafter, this MOU shall remain in effect until expiration of the Certificate.

## **VII. EXECUTION IN COUNTERPARTS**

This MOU may be executed in counterparts, with a separate page for each signatory, each of which shall constitute an original, and all of which shall constitute one and the same agreement.

**Ohio History Connection  
State Historic Preservation Office**

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Diana Welling, Department Head &  
Deputy State Historic  
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Date

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**Pleasant Prairie Solar Energy LLC**

---

Michael Kaplan

Date

Authorized Signatory Pleasant Prairie Solar Energy, LLC

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## **Appendix A - Landscape Mitigation Plan**

**Exhibit E**  
**Landscape, Vegetation Management, and**  
**Lighting Plan**

**HGS, LLC**

**January 2021**



**Invenergy**

Invenergy

## **Conceptual Vegetation Management Plan for the Pleasant Prairie Solar Energy Project**

Prairie and Pleasant Townships, Franklin County, Ohio

January 2021

**Prepared By:**

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Appendix D. Ohio Noxious and Invasive Species Plant Lists

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## 1.0 Introduction and Purpose

The Pleasant Prairie Solar Energy Project ("Project") is located in Franklin County, Ohio. Invenery plans to construct a solar energy generation facility, consisting of solar arrays, gravel access roads, buried electrical collection lines, a substation, an overhead transmission line, and associated Project facilities. The Project Study Area ("Study Area") is located between S.R. 40 and Kropp Road in Galloway, Ohio on private parcels accounting for approximately 2,314 acres (Appendix A. Figures. Figure 1. Project Location Map).

To support the development of the Project and successful vegetation establishment, RES, LLC ("RES") was contracted to prepare this Conceptual Vegetation Management Plan ("CVMP") for the Study Area. The CVMP was developed to guide the establishment of permanent, regionally appropriate, native vegetative cover within the Study Area and minimize future erosion, undesirable vegetation species, and maintenance costs. The CVMP also provides details on lighting at the Project and addresses the prescriptive measures for vegetative clearing, site preparation, and vegetative screening modules. The CVMP is a working document that will be further developed as new information pertaining to site characteristics and Project details are finalized. The details contained in this document are intended to present the pathways for sound vegetation management prior to, during, and following construction.

## 2.0 Existing Site Conditions

### 2.1 Desktop Assessment and Analysis

#### 2.1.1 Methods

RES performed a desktop review of available information for the Study Area, including the shapefiles of the delineated aquatic resources. In addition, RES reviewed publicly available data sources, including NRCS Soil Survey Geographic Database (SSURGO), the NRCS Websoil Survey, EPA's National Hydrology Dataset (NHD), and the USFWS National Wetlands Inventory (NWI). RES mapped the following features using the desktop data or existing reports for inclusion in this CVMP: (a) water resources; (b) land cover types; and (c) protected areas (Appendix A. Figures). The NRCS Websoil data reports identifying soil mapping are also included as Appendix E. NRCS Soil Reports.

#### 2.1.2 Results

The Project is located within a rolling till plain known as the Eastern Corn Belt Plains Ecoregion. With extensive glacial deposits and local terminal moraines, the soils tend to have developed from loamy, limy glacial deposits (Winken, 2011). The relatively fertile and well-drained forested plains were converted to agriculture during European settlement. The historic vegetative communities were likely a complex of tall-grass prairie, wetlands, and forested dominated by beech, oak-sugar maple, or elm-ash.

Historic aerial and topographic imagery indicate that the Study Area was cleared and in agriculture prior to the 1950s. Land use surrounding the Project consists primarily of large tracts of agricultural fields, primarily row crops and pasture, with heavily urbanized areas to the east and a complex of forests, streams, and restored prairies and wetlands associated with Darby Creek and the Battelle Darby Creek Metro Park to the west (Figure 2. 2011 NLCD Map). As summarized in Table 1. Existing Land Cover Summary, the existing land cover within the Study Area is primarily agriculture (tilled rowed crops, sod, and pasture), with strips of perennial vegetation adjacent to streams, drainages, and woodlots not conducive to row crop agriculture. Small farm home sites are located throughout the Study Area, with minor local roads bisecting the fields.

<b>Cover Type</b>	<b>Acres in Study Area</b>	<b>Percent within Study Area</b>
Cultivated Crops (including sod)	1956.6	83.67%
Pastures/Hay	254.4	10.88%
Developed	80.0	4.44%
Deciduous Forest	14.4	0.62%
Grassland/Herbaceous	5.7	0.25%
Emergent Herbaceous Wetlands	1.9	0.08%
Woody Wetlands	1.5	0.06%
<b>Total Acres</b>	<b>2,314.0</b>	





As shown in Figure 3. Ecological Inventory Map, there are no National Hydrography Database (NHD) streams located within the Study Area. The Study Area drains into the Big Darby Creek, and ultimately, the Scioto River. The National Wetlands Inventory Database indicates that there are 10 palustrine emergent (PEM), 5 palustrine scrub-shrub/forested (PSS/PFO) wetlands, and 5 freshwater ponds (POW) located within the Study Area (Figure 3. Ecological Inventory Map). The existing wetland and watercourse investigation confirmed the presence of 11 PEM, 1 PSS, 3 PFO, and 1 PUB wetlands, as well as one intermittent stream within the Study Area (Figure 4. Watercourse and Wetland Delineation Map, Cardno Delineation Data, 2020).

Based on the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey, the Study Area is underlain by numerous soil types but dominated by three dominant soil series: Kokomo silty clay loam (45%), Lewisburg-Crosby complex (36.4%), and Crosby silt loams (16.4%) (Table 2. Soil Series; Appendix E. NRCS Soil Report). These soils are consistent with those described for the ecoregion, with a landscape position within till plains and moraines. They have relatively high fertility, as all are categorized as prime farmland or prime farmland if drained. The Lewisburg-Crosby complex soils are moderately well drained; however, the other dominant soils are somewhat poorly – very poorly drained. The Kokomo silty clay loam is mapped as a hydric soil and it is typically located in depressional areas of the till plains, with a shallow depth to the water table (0-6"). Soil restrictive layers appear to be deep on average, ranging from 24 - 80".

## 2.2 Initial Site Investigations

RES performed an initial investigation of the Study Area on November 17, 2020. The objectives of the survey were to assess existing site conditions, including the surface features, drainage, and topography. In addition, existing vegetation was evaluated to determine the need to manage for invasive species or opportunities to incorporate existing vegetation into the vegetation planning. Soil sampling and analysis will be performed in future investigations to inform the topsoil management and amendment strategy.

During the site visit, RES observed the built and natural features on the landscape within the Study Area that were identified in the shapefiles provided for the conceptual project area (Appendix F. Representative Photographs). The assessment confirmed that the Study Area is primarily comprised of modern, tilled, row crop and sod producing agricultural lands with very small strips of perennial vegetation adjacent to streams, fencerows, and woodlots that were not conducive to row crop agriculture. Small farm homesites are located throughout the Study Area with minor local roads bisecting the site.

The Study Area is largely made up of actively managed sod farms and row-crop agriculture. As such, most surface features (e.g., homes, fences, structures, etc.) have been removed to allow for modern agricultural equipment. Several fields have demolished or dilapidated structures, which will be included in the Project design setbacks and excluded from this document. Most of the perennial vegetation is either in sod plantings or is heavily impacted by seasonal herbicide broadcasting and rotational tillage. Perennial vegetation populations are restricted to the sod plantings, roadside ditches, very narrow fencerows, tree and shrub lined fence rows, and small woodlots adjacent to the Project. A few of the fields have incorporated grass-lined drainage swales to aid in water quality and erosion control enhancements. These drainages are dominated by Eurasian, cool-season grasses. No noxious or invasive species, as established in Appendix D. Ohio Noxious and Invasive Species Plant Lists, were observed within the Study Area. Although designs have not been finalized, the locations of solar panel installation are expected to be primarily, if not all, located where agriculture currently exists.

Existing hydrology exists primarily within grassed swales and one intermittent stream which drains the croplands. Some wetland pockets were observed that were not farmable, which were left in degraded native vegetation or non-native cool-season grasses. No major subsurface drains were observed within the study area.

Several tilled fields showed signs of ephemeral water flow where topsoil and freshly tilled soils had eroded in low points, but the vegetation was intact and erosion potential was low. Although the soil survey data indicates that there are hydric soils present on-site, standing water was not observed during the field investigation and it would appear that the agricultural drainage features are moving water off the fields at a regular rate.





Table 2: Soil Series within the Pleasant Prairie Solar Energy Project Study Area

Soil Series Symbol	Soil Series Description	Acres in Project Area	Percent of Project Area	Soil Series Setting (Landform)	Parent Material	Farmland Classification	Soil Limitations				Hydrologic Soil Group
							Depth to Restrictive Features		Natural Drainage Class	Hydric Rating Percentage ((%) <sup>2</sup> )	
							Depth to Any Soil Restrictive Layer (inches)	Depth to Water Table (inches)			
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	1087.5	46.50%	Depressions on till plains	Loamy glaciofluvial deposits derived from sedimentary rock over loamy till derived from limestone/dolomite	Prime farmland if drained	>80	0-6	Very poorly drained	90	C/D
LeB	Lewisburg-Crosby complex, 2 to 6 percent slopes	809	34.60%	Till plains	Loamy till	Prime farmland	>80	24-48	Moderately well-drained	15	D
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	243.8	10.40%	Moraines	Silty material or loess over loamy till	Prime farmland if drained	24-40	6-24	Somewhat poorly drained	5	C/D
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	146	6.20%	Moraines	Silty material or loess over loamy till	Prime farmland if drained	24-40	6-24	Somewhat poorly drained	5	C/D
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	17.2	0.70%	Moraines	Silty material or loess over loamy till	Prime farmland	20-40	12-30	Moderately well-drained	4	C/D
MIc2	Miamian silty clay loam, 6 to 12 percent slopes, eroded	14.3	0.60%	Till plains	Loamy till	Not prime farmland	>80	>80	Well drained	5	C
CeB	Celina silt loam, 2 to 6 percent slopes	7	0.30%	Till plains	Loess derived from quartzite over loamy till derived from limestone/dolomite	Prime farmland	24-40	12-30	Moderately well-drained	10	C/D
Cc	Carlisle muck	5.4	0.20%	Depressions	Organic material over glaciofluvial deposits	Not prime farmland	>80	0-12	Very poorly drained	95	A/D
Wt	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2 percent slopes	5.5	0.20%	Depressions and swales on stream terraces	Loess over loamy outwash over sandy and gravelly outwash	Prime farmland if drained	40-60	0-6	Poorly drained	90	B/D
CeA	Celina silt loam, 0 to 2 percent slopes	1.4	0.10%	Ground moraines	Loess over loamy till derived from limestone and dolomite	Prime farmland	20-40	12-30	Moderately well-drained	5	C/D
EIB	Eldean silt loam, 2 to 6 percent slopes	0.6	0.00%	Outwash terraces	Loamy outwash	Prime farmland	20-40	>80	Well drained	0	B





### 3.0 Site Clearing

The Project's limit of disturbance (LOD) will be staked prior to construction to protect drainage systems or other sensitive areas. As the site is unforested, tree clearing would be limited to occasional individuals within existing field edges and fencerows and is anticipated to be less than seven acres in total area. If required, tree clearing would be done by hand or through mechanical means, depending on the level of effort required and proximity to sensitive areas.

Coordination has been initiated with the US Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resource to determine if any time of year (TOY) restrictions may be required. It is understood that if any tree clearing must be done outside of the winter clearing window for Indiana Bats, additional coordination with the USFWS will be required. The Project is committed to conducting tree clearing between October 1 and March 31, and no adverse impacts to bat species are anticipated.

In addition, woody vegetation BMPs such as barrier fencing will be employed to protect crowns and root zones from disturbance during construction activities. Where necessary, setbacks will be employed and demarcated in the field to protect sensitive resource areas. Pre-construction surveys and invasive species control are recommended for noxious and invasive weed infestations prior to construction.

### 4.0 Site Preparation

After earth disturbance is completed and the panels are installed, all existing vegetation within areas that are to be seeded should be inventoried for noxious, invasive, or undesirable vegetation that needs to be treated. This includes all disturbed areas that will be revegetated and maintained. Areas that will return to tillage should be excluded from these measures. Ohio has published both an invasive species and a noxious species list (Ohio Department of Agriculture, 2018; Appendix D). In order for the native species to establish successfully, intensive maintenance must occur prior to permanent seeding during the first three years of establishment. This maintenance will involve a combination of species-specific mechanical and chemical weed control.

Mechanical control may involve mowing, trimming, or cutting of invasive or undesirable annual species to prevent these species from setting seed and to allow light filtration for developing herbaceous material, trees, and shrubs. Chemical control methods will be needed for highly aggressive invasive species that grow rhizomatously, disperse large quantities of seed, and/or are generally resistant to most methods of mechanical weed control. There are several different methods for chemical application, all of which require the use of the proper herbicide. Herbicide application shall follow label directions for the target species and site conditions. Where undesirable species exist adjacent to aquatic resources, the applicator shall use an aquatic-approved herbicide. Herbicide application shall occur not less than 2 weeks before the final seeding installation. Eradication shall be confirmed, and follow-up herbicide applications may be necessary.

Where dense areas of undesirable vegetation exist, boom spraying and biomass removal may be necessary for efficient removal and establishment of desired vegetative cover. Seeding may be required where herbicide impacts exceed the vegetation establishment requirements dictated by the Stormwater Pollution Prevention Plan (SWP3) permits.

Post-construction, areas where existing vegetation persists within the planting zones, mowing shall occur to a height of 6-8 inches approximately 1 week prior to seed installation. Where undesirable species exist, herbicide application shall occur not less than 2 weeks before the final installation. In disturbed areas lacking vegetation, mechanical decompaction or scarification of the topsoil may be needed.

Based on an assessment of existing conditions, the topsoil is anticipated to be adequate for the establishment of the seed mixes developed for the Project. Topsoil testing will be performed prior to the Final VMP to analyze the soil pH, fertility, organic content, and mechanical composition in order to provide recommendations regarding soil amendments prior to planting.

### 5.0 Revegetation

Revegetation at the Project site will include practices for all phases of construction and maintenance and will apply only to the Project areas associated with the solar arrays, other Project infrastructure, or those adjacent areas that were disturbed during construction. This project will comply with the requirements for construction projects located within the Big Darby Creek watershed or portions of the Olentangy watershed, including TMDL conditions,





riparian mitigation requirements, and groundwater requirements, as applicable to Ohio EPA Permit OHC000005 from April 2018.

The following seed mixes have been designed to provide native vegetative cover while ensuring performance goals for the Project. These seed mixes are intended to be installed at various stages of construction, as specified below, utilizing the mix-specific directions for installation.

### 5.1 Temporary Revegetation

In accordance with the General Permit for Storm Water Discharges associated with Construction Activity under the NPDES, temporary soil stabilization must occur during construction to reduce soil erosion, minimize soil compaction, and preserve topsoil. These Best Management Practices (BMPs) will be summarized in greater detail within the Project's SWP3, which includes the use of temporary (annual) seed mixes and winter crops to ensure all land and water resources are protected during construction.

### 5.2 Permanent Groundcover Establishment

Once the Project planting zones have been prepared, the installation of the permanent native seed mixes developed for the Project will be installed in accordance with the SWP3 and as instructed by the Owner. Any final seeding that occurs on the bare ground shall include the Nurse Crop Seed Mix in addition to the permanent Low-Profile Solar Array Seed Mix.

#### 5.2.1 Nurse Crop Seed Mix

The Nurse Crop Seed mix (Table 3) is intended to be installed on all disturbed or bare soil as a nurse crop, providing cover while the permanent seed mixes establish. This mix shall be installed in combination with all final seed mixes proposed for the specific site conditions and is not intended as a standalone mix. If temporary seeding is required, refer to the Temporary Seeding descriptions above.

Table 3. Nurse Crop Seed Mix for the Pleasant Prairie Solar Energy Project		
Species	Common Name	Seeding Rate
<i>Avena sativa</i>	Annual Seed Oats	20 lbs/acre
<i>Lolium multiflorum</i>	Annual Ryegrass	20 lbs/acre

#### 5.2.2 Low Profile Solar Array Seed Mix

The Low-Profile Solar Array Seed Mix is intended to be installed in all areas of the Project where the vegetation has been removed for construction, where permanent vegetation is not already established, and where mowing will be required. This seed mix will be utilized across most of the Project, within and under solar panel arrays. This seed mix is designed to provide short stature stabilization using regionally appropriate warm and cool-season grasses that are adapted to thrive in the climate and soil conditions. Based upon coordination with the Metro Parks restoration staff, a native, small-stature prairie grass component is also recommended to enhance wildlife benefits and continuity to the adjacent prairie restorations. Mowing regimens can be reduced by employing shorter stature species. At a minimum, seed shall be installed at a seeding rate of 20 lbs/acre with a mix composition as proposed in Table 4 below.

Table 4. Low Profile Solar Array Seed Mix for the Pleasant Prairie Solar Energy Project		
Species	Common Name	Mix Composition
<i>Festuca rubra</i>	Creeping Red Fescue	45.5%
<i>Festuca brevipila</i>	Hard Fescue	15.0%
<i>Festuca ovina</i> var. <i>duriscula</i>	Hard Fescue	15.0%
<i>Festuca rubra</i> ssp. <i>commutata</i>	Chewings Fescue	10.0%
<i>Poa pratensis</i>	Kentucky Bluegrass	10.0%
<i>Trifolium repens</i>	White Clover	4.5%
<i>Schizachyrium scoparium</i>	Little Bluestem	1.0%
<i>Bouteloua curtipendula</i>	Side-oats Grama	1.0%





### 5.3 Landscape Screening

Visual mitigation and landscape screening plan will be developed for the Final Vegetation Management Plan for locations along public roadways, areas buffering aquatic resources, roads, fencelines, and residences where mitigation against views of the solar arrays is perceived to be needed or desired. The planting modules will be offset approximately 10-15 feet from the facility fencing to prevent damage from roots and will vary in width (15-25 feet) based upon site specific conditions and screening needs. The three tiers of screening modules proposed are described below:

- Module 1 screening – areas requiring minimal screening and employing native pollinator habitat mix only;
- Module 2 screening- areas requiring more moderate screening and employing the native pollinator mix with native tree plantings every 10 year feet; and
- Module 3 screening - areas requiring the most privacy screening and employing two rows of native trees at a rate of one tree every 10 feet with native shrubs interspersed.

Module 1 screening is proposed in areas with low viewership, to include local roadways and property boundaries where viewership is periodic but viewing period is low. A native shortgrass prairie pollinator habitat mix is proposed to provide additional ecological benefits to the project and enhance the visual aesthetics of the screening areas. Given the proximity to the restored prairies at the Battelle Darby Metro Park and in consideration of the Ohio Pollinator Habitat Initiative (OHPI) recommendations, a native shortgrass prairie mix will allow the screening areas greater ecological consistency with the natural character of the surrounding landscape (Appendix C.)

In Project areas requiring a more moderate amount of screening, such as along major/through roads, the Module 2 screening is proposed the buffer is proposed to include the pollinator seed mix and one row of native shrubs at a rate of one shrub every 10 feet.

The Module 3 screening is proposed for areas in which viewership is the highest and viewing period the longest, such as when a residence is located across the street or adjacent to a facility. This module is proposed to include two rows of native trees, every ten feet, with shrubs interspersed. At installation, the evergreen trees will be approximately six to eight feet in height (balled and burlapped root), the deciduous trees will be approximately three to four feet in height (three-gallon containerized) and the shrubs will be two to three feet in height (one-gallon containerized). The outer row of trees will consist of evergreen species and the inner row of trees will consist of a combination of native deciduous species. A variety of native species will be installed to increase the aesthetic, as well as the pollinator and wildlife value of the buffer in accordance with Ohio DNR and Ohio State University Extension species recommendations (Appendix B. Ohio Native Tree and Shrub Lists).

Based on the existing conditions observed on-site and coordination with the local Metro Parks staff, Table 5. Landscape Screening Woody Species Recommendations provide a recommendation of the species that are likely to be suitable and attractive for the buffer plantings but also consistent with the character of the adjacent Metro Parks ecosystems. If site-specific conditions indicate that micro-habitat conditions exist, other more suitable species are permissible provided they are regionally appropriate and included in Appendix B.

All woody materials for the buffer must be acclimated by the nursery, as appropriate for the local hardiness zone (Zone 6a – Temperature -10 to -5 degrees Fahrenheit), and must be guaranteed upon installation to be healthy and free of disease before installation. Survivorship of 75% of plantings must be achieved with replantings guaranteed for any mortality exceeding this threshold.

The project will utilize some safety and security lighting at commonly occupied areas and this may be a component of the landscape screening areas. Where used, this lighting will meet residential zone code levels and will be motion activated to reduce any impacts on wildlife.





Table 5. Landscape Screening Woody Species Recommendations for the Pleasant Prairie Solar Energy Project		
Planting Type	Scientific Name	Common Name
Tree	<i>Acer rubrum</i>	Red maple
	<i>Acer saccharum</i>	Sugar maple
	<i>Celtis occidentalis</i>	Hackberry
	<i>Cornus florida</i>	Flowering dogwood
	<i>Diospyros virginiana</i>	Persimmon
	<i>Fagus grandifolia</i>	American beech
	<i>Juniperus virginiana</i>	Eastern red cedar
	<i>Pinus strobus</i>	White pine
	<i>Prunus americana</i>	Wild plum
	<i>Quercus macrocarpa</i>	Bur oak
	<i>Quercus rubra</i>	Red oak
	<i>Quercus stellata</i>	Post oak
	<i>Thuja occidentalis</i>	Northern white cedar
	<i>Zanthoxylum americanum</i>	Prickly Ash
Shrub	<i>Ceanothus americanus</i>	New Jersey tea
	<i>Corylus americana</i>	American Hazelnut
	<i>Cornus racemosa</i>	Gray dogwood
	<i>Lindera benzoin</i>	Spicebush
	<i>Rhus aromatica</i>	Fragrant sumac
	<i>Rhus glabra</i>	Smooth sumac
	<i>Rosa setigera</i>	Prairie rose
	<i>Viburnum lentago</i>	Nannyberry

## 6.0 Vegetation Maintenance and Monitoring

### 6.1 Establishment Period Management

Proper management during the vegetation establishment (“Establishment Period”) is critical to realize the long-term cost benefits associated with a regionally appropriate vegetation community that includes deep-rooted native species. Typically, the Establishment Period for these plants lasts two to three years for the plants to develop extensive root systems and cycle through seasonal germination periods.

It should be anticipated that permanent seeding and stabilization measures will be installed in phases throughout the Project as portions of the Project are completed by the Contractor. Once final permanent seeding and stabilization measures have been accepted by the Owner, the Contractor shall begin maintenance and monitoring protocols as described below.

Below we have listed specific management activities to be implemented during the Establishment Period, which we have outlined as the first three years after installation.

#### 6.1.1 Years One and Two of the Establishment Period

##### 6.1.1.1 Monitoring

Monitoring of vegetation and site conditions should be completed in coordination with SWP3 inspection requirements to ensure proper establishment of the desired vegetation until the SWP3 Notice of Termination (NOT) has been received. Vegetation monitoring shall occur a minimum of twice (spring and fall), with more as needed.

##### 6.1.1.2 Mowing

Mowing shall occur throughout the entire Project before or at the latest when vegetation exceeds 18 inches in height. Mowing requirements shall occur based upon vegetation growth and undesirable vegetation control. Specific mowing targets shall focus on annual, undesirable vegetation for control while perennial vegetation begins to establish.





#### 6.1.1.3 Herbicide

The first year of maintenance should primarily focus on mowing and mechanical control of vegetation. However, if perennial noxious or invasive species are identified in any monitoring or maintenance events, chemical control should be employed. Herbicides shall be applied on a spot application basis, focused upon target plants. If large stands of undesirable vegetation are identified, boom spraying can be discussed. Re-seeding of the planned seed mixes shall be implemented at least two weeks after undesirable vegetation is eradicated. Herbicide application shall be conducted by trained and licensed professionals, following label conditions at all times.

#### 6.1.1.4 Overseeding

Installation of additional seed should be anticipated in areas where seed mixes are underperforming, or areas where planting densities fall below the plan-specified success criteria. Consideration should be given to why the previously installed seed mix is underperforming to determine if an alternate mix is warranted. If deemed necessary, overseeding shall be performed by installing the planned seed mixes by native seed drill. Seeding rates lower than those indicated in the initial installation tables can be considered, provided specific performance goals are agreed upon.

### 6.1.2 Year Three of the Establishment Period

#### 6.1.2.1 Monitoring

Monitoring of vegetation and site conditions should be completed in coordination with SWP3 inspection requirements to ensure the proper establishment of the desired vegetation. Vegetation monitoring shall occur once annually, with more as needed.

#### 6.1.2.2 Mowing

Mowing shall occur within the low-profile areas within the panel arrays, adjacent to Project facilities, and adjacent to drives when vegetation exceeds 18 inches in height. Outside of the Low-Profile Areas, mowing should be done only as needed and only one-two times a year during the agreed upon mowing window. If substantial undesirable annual vegetation persists within the buffer areas, mowing regimens shall follow the low-profile schedule.

#### 6.1.2.3 Herbicide

Herbicide application may become a more significant component of the strategy, controlling undesirable perennial species during the third year of maintenance as the site soils have stabilized and annual vegetation is removed from the vegetation matrix. Herbicides shall be applied on a spot application basis, focused upon target plants. If large stands of undesirable vegetation are identified, boom spraying can be discussed. Re-seeding of the planned seed mixes shall be implemented once undesirable vegetation is eradicated. Herbicide application shall be conducted by trained and certified professionals, following label conditions at all times.

#### 6.1.2.4 Overseeding

Installation of additional seed should be anticipated in areas where seed mixes are underperforming, or areas where planting densities fall below the plan-specified success criteria. If undertaken, overseeding shall be performed by installing the planned seed mixes by native seed drill. Seeding rates lower than those indicated in the initial installation tables can be considered, provided specific performance goals are agreed to by the owner.

## 6.2 Long-term Management

The long-term management and monitoring of the site should align with the approach described for the Year 3 Establishment Period in Section 6.1.2.

## 7.0 Net Ecological Improvements Narrative

Through the conversion of approximately 2,000 acres of intensively managed active agricultural fields to permanently stabilized, perennially vegetated grasslands, the proposed Project is anticipated to improve a number of key ecosystem services and exhibit an improved ecological condition.

The Project is centrally located to a number of managed and conserved lands. In particular, the Project abuts restored wetland and prairie complexes associated with the Battelle Darby Metro Park and Hellbranch Meadows Restoration Site. The use of a shortgrass prairie – pollinator-friendly seed mix where possible, and native woody plantings in the





landscaped screening buffers, will create wildlife and pollinator habitat and will provide both corridors for wildlife between the Metro Park and Project. The plantings will also provide some ecological and visual consistency between the conservation areas and the Project. For example, plantings in the visual screening buffers will take into consideration the habitat needs of predatory birds to supplement the owl habitat restorations discussed with Metro Park staff on adjoining properties.

Through the removal of widespread pesticide application, in combination with the planting of native and pollinator-friendly seed mixes and woody plantings, the Project is anticipated to have beneficial impacts on the local ecosystem and water quality. Pesticide application to crops nationwide is estimated at 698 million pounds annually (Weiben 2019). Conventional corn and soybean farming account for approximately 71% of this use (Fernandez-Cornejo, 2014). Although important for crop management, pesticides can be transported to surface and groundwater and degrade water quality. They are also likely an important factor in biodiversity and pollinator decline. In Franklin County, Ohio, for example, an estimated 22 tons/acre of glyphosate, a commonly used broadleaf, and grassweed killer, are applied to agricultural fields annually (Weiben, 2019). The proposed Project will eliminate all large-scale pesticide application for approximately 2000 acres. This would amount to removing approximately 44,000 tons of glyphosate from the watershed annually. This tonnage does not include very occasional and highly localized use of herbicides which will be required to manage invasive species; this effort will also result in a net benefit to the landscape through the long-term reduction of invasive species on the landscape and the promotion of native and/or pollinator-friendly vegetation.

The proposed Project is also anticipated to have beneficial impacts on local water quality as a result of the removal of the widespread fertilizer application associated with modern agricultural practices. According to the Ohio EPA, 48% of Ohio's watersheds are degraded as a result of nutrient runoff associated with agriculture. Although fertilizer application varies widely according to crop and site-specific characteristics, the USDA estimates that 175 lbs/acre of nitrogen and 73 lbs/acre of phosphate are applied to cornfields in Ohio annually. Although an initial soil amendment may be required, no long-term or large-scale fertilization would be required for this project. Although various crops are currently grown across the existing Project site, using the USDA estimated application rates for corn production in Ohio (USDA, 2018), the conversion of 2000 acres associated with the solar farm could remove up to as much as 175 tons of nitrogen and 73 tons of phosphates from the watershed annually.

The dense perennial grasses within the array and pollinator planting areas will also provide ecological benefits for the region. The cool-season perennial grasses will more quickly stabilize the area and prevent erosion. The inclusion of native warm-season grasses, which are more deeply rooted, will also provide good long-term erosion control. They are also capable of growing on poorer soils and are more ecologically suited for the landscape. Once stabilized, mowing be performed only at needed (once or twice a year) and vegetation will be permitted to maintain a height of 18", which will substantially slow the movement of water, capture sediment as it moves across the fields, and increase the infiltration of groundwater.

The proposed land-use conversion may also reduce greenhouse gas emissions and increase the storage and biogeochemical cycling of carbon in a number of ways. Synthetic fertilizer production is for agricultural use is one of the leading contributors to greenhouse gas emissions into the atmosphere. Through the direct removal of the fertilizers, the fuel required for operating farm equipment, and the pesticides all associated with modern agriculture, the Project would be expected to reduce substantial greenhouse gas emissions. The Project's VMP is also anticipated to directly increase CO<sub>2</sub> uptake and long-term storage. Young trees absorb CO<sub>2</sub> at a rate of 13 lbs/year prior to year 10, at which point their average storage is estimated at 48 lbs/year (Urban Forestry Network). Although not equivalent to trees within a mature forest, the woody plantings associated with the screening buffers could store upwards of 1 ton of CO<sub>2</sub> each in their lifetime, providing much longer-term and more substantial CO<sub>2</sub> storage in their tissues than would be accomplished by the agricultural landscape. Agricultural crops can take up a large amount of carbon but only temporarily, as the benefits are lost rapidly lose most of the annual carbon stored in plant tissues during harvest cycles, grassland and meadows are excellent carbon sinks. Their thick mats of roots trap organic matter and convert it into soil carbon at great depths. Ongoing climate research suggests that some grasslands because they primarily store carbon underground, may more resilient carbon sinks than even forested systems (UC Davis, 2018).





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## Appendix A / Figures



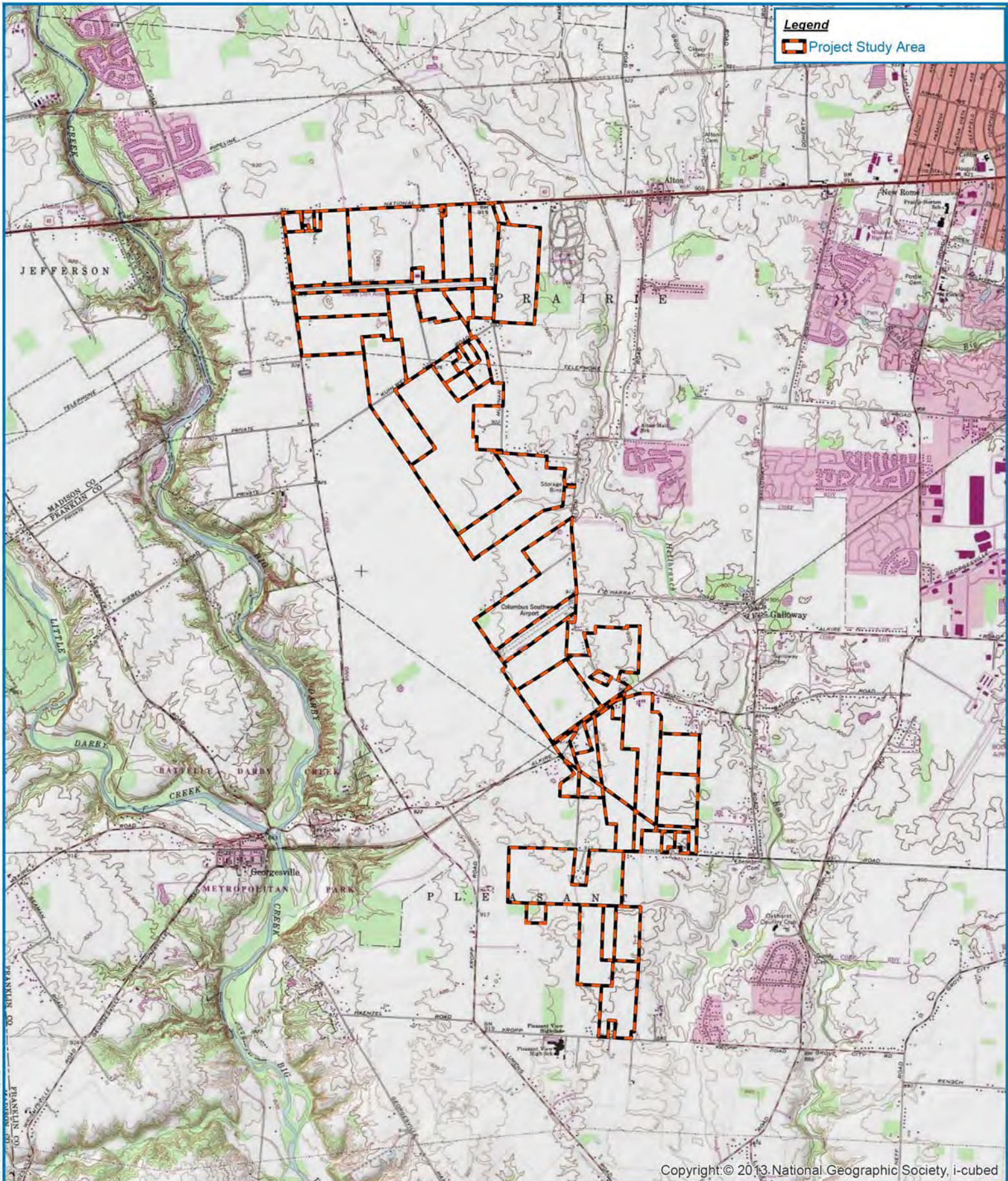


FIGURE 1

PLEASANT PRAIRIE SOLAR ENERGY PROJECT  
 CONCEPTUAL VEGETATION MANAGEMENT PLAN  
 PROJECT LOCATION MAP

FRANKLIN COUNTY, OHIO

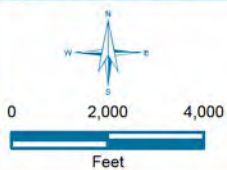
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Drawn by: HK

Checked by: JP

1 inch = 4,000 feet

Invenergy





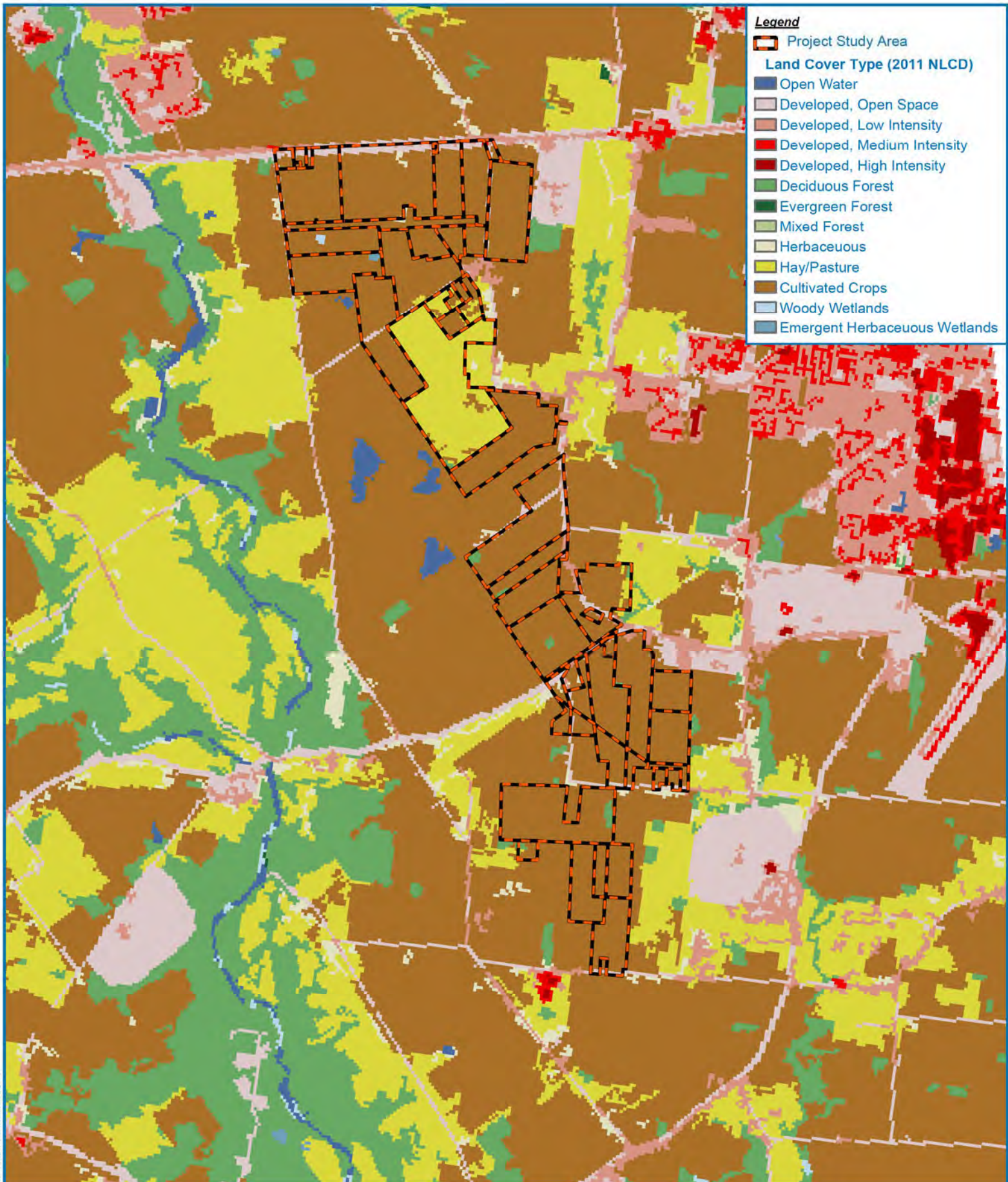


FIGURE 2

PLEASANT PRAIRIE SOLAR ENERGY PROJECT  
CONCEPTUAL VEGETATION MANAGEMENT PLAN  
2011 NATIONAL LAND COVER DATA MAP

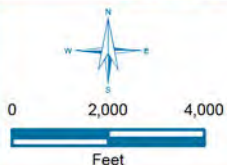
FRANKLIN COUNTY, OHIO

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Checked by: JP

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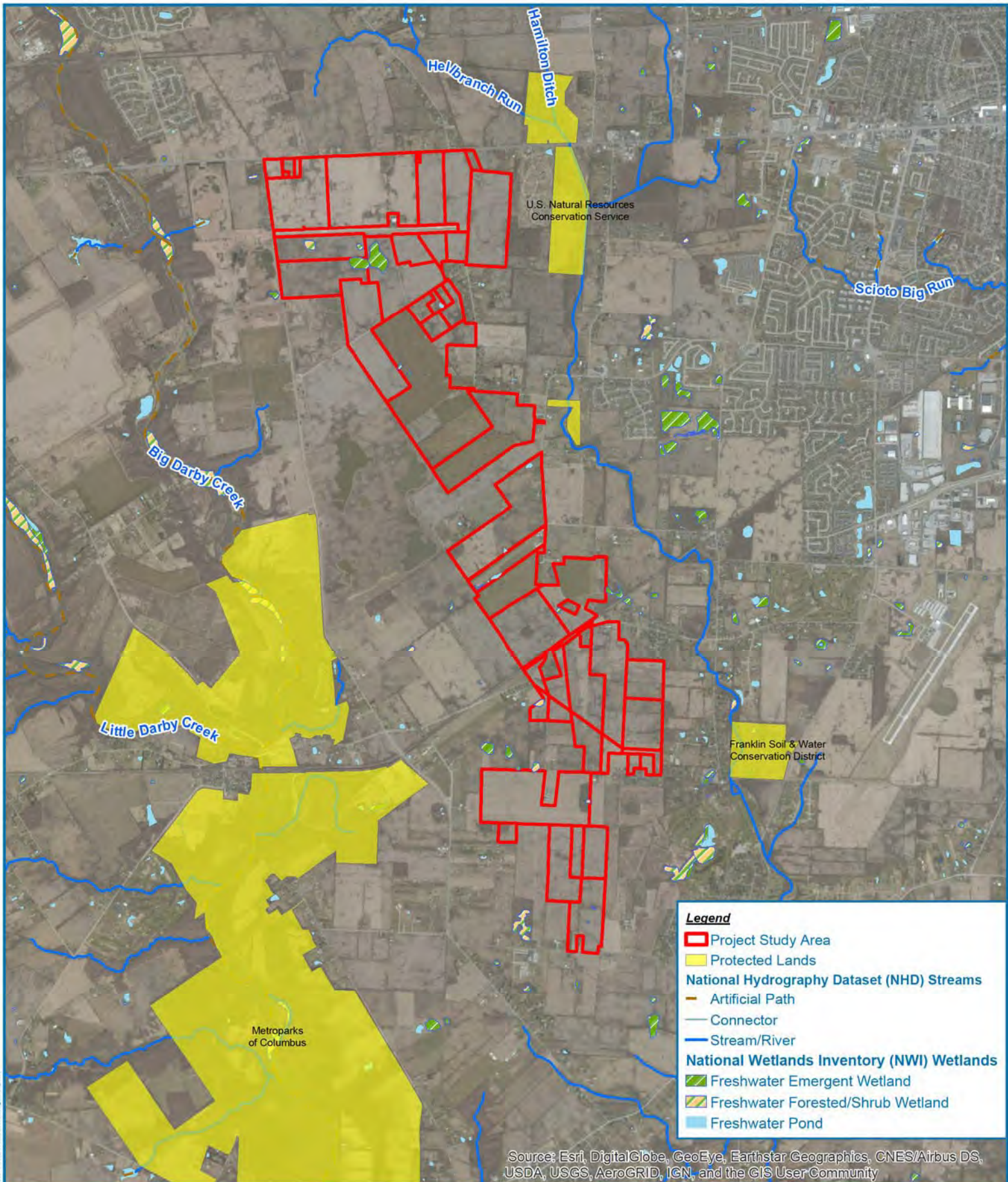


FIGURE 3

PLEASANT PRAIRIE SOLAR ENERGY PROJECT  
CONCEPTUAL VEGETATION MANAGEMENT PLAN  
ECOLOGICAL INVENTORY MAP

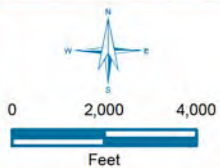
FRANKLIN COUNTY, OHIO

Date: 11/5/2020

Drawn by: HK

Checked by: JP

1 inch = 4,167 feet









## Appendix B / Ohio Native Tree and Shrub Species List





# Extension FactSheet

School of Natural Resources, 2021 Coffey Road, Columbus, Ohio 43210

## Native Landscaping for Birds, Bees, Butterflies, and Other Wildlife

Kathi L. Borgmann, Graduate Associate  
Amanda D. Rodewald, State Extension Specialist, Wildlife

Throughout the world, habitat loss is the leading cause of species endangerment and extinction. In the Midwest, a large portion of the land has been cleared due to agricultural and urbanization pressures, leaving marginal and fragmented habitats. Consequently, backyards play an increasingly important role in wildlife conservation. You can help reduce the negative effects of habitat loss on birds, bees, butterflies, and other wildlife species in your area by creating a favorable landscape. Providing wildlife-friendly habitat in urban and suburban areas is especially important for migrating birds and butterflies. These groups of animals also are least likely to cause nuisance or damage problems.

### Landscaping with native trees and shrubs

A wildlife-friendly landscape is composed of four essential items: 1) food, 2) water, 3) cover or shelter, and 4) a place to raise young. To provide the most beneficial habitat for birds, bees, and butterflies, native trees and shrubs should be emphasized. Why native species? Native plants are adapted to local conditions and, therefore require less maintenance (especially irrigation and fertilization). Native plants also provide the best quality resources because wildlife species are adapted to use native plants. Planting native species also maintains the natural diversity of flora and fauna in the area.

Exotic plants can threaten other plant and animal species. Several exotic plants have escaped from garden cultivation and are now causing serious damage to natural areas and preserves. Examples of highly invasive

exotic plants include multiflora rose (*Rosa multiflora*), bush honeysuckle (*Lonicera maackii*, *Lonicera morrowii*, and *Lonicera tatarica*), garlic mustard (*Alliaria petiolata*), asian bittersweet (*Celastrus orbiculatus*), russian olive (*Elaeagnus angustifolia*), privet (*Ligustrum vulgare*), japanese honeysuckle (*Lonicera japonica*), and dame's rocket (*Potamogeton crispus*). A complete list of problem exotic species can be obtained from ODNR Division of Natural Resources (<http://www.dnr.state.oh.us/odnr/dnap/dnap.html>) and the Ohio Chapter of The Nature Conservancy (<http://www.tnc.org>). Avoid choosing horticultural varieties when possible because altered varieties may not be appropriate for growing conditions of Ohio nor provide the best resources for wildlife.

Before you start landscaping your yard, plan ahead. Map your backyard and determine what environmental conditions you have (i.e., soil conditions and amount of

sun). To provide optimal habitat for a diverse array of species in your backyard, choose a variety of trees and shrubs of varying heights to mimic natural forest structure. You will want to plant a few different species of canopy trees, along with fruiting shrubs of various shapes and sizes. Choose plants that provide habitat or resources at different times of the year. For example, conifer trees provide cover and

warmth during the winter, whereas fruiting trees provide seasonal food resources. When choosing fruiting shrubs, select species that produce fruits at different times of the year to ensure that food is available throughout the season. In addition, many of the fruiting shrubs display large fragrant flowers that add to the attractiveness of your yard.

**A wildlife-friendly landscape is composed of four essential items:**

- 1) food**
- 2) water**
- 3) cover or shelter**
- 4) a place to raise young**

## What Should I Plant?

Below is a list of recommended native Ohio trees and shrubs you can plant to create a wildlife friendly backyard.

Species	Wildlife Benefits <sup>1</sup>	Soil Conditions <sup>2</sup>	Light Conditions <sup>3</sup>
<b>Trees</b>			
Boxelder ( <i>Acer negundo</i> )	W, B, BF	W - D, V	SU - LS
Black Maple ( <i>Acer nigrum</i> )	W, B	M, AK	LS
Red Maple ( <i>Acer rubrum</i> )	W, B	W - D, V	LS - SH
Silver Maple ( <i>Acer saccharinum</i> )	W, B	M, V	SU - LS
Ohio Buckeye ( <i>Aesculus glabra</i> )*	W, B, BF	W - M, AC	SU - LS
Paw Paw ( <i>Asimina triloba</i> )*•	W, BFL	M - D	SU - LS
Shagbark Hickory ( <i>Carya ovata</i> )	W, B	M - D	SU - LS
Mockernut Hickory ( <i>Carya tomentosa</i> )	W, B	M - D	SU - LS
Hackberry ( <i>Celtis occidentalis</i> )*	W, B, BFL	V, L, AK	SU
Red Bud ( <i>Cercis canadensis</i> )*	BE, HB, BF	M - D, V	SU - SH
Flowering Dogwood ( <i>Cornus florida</i> )*•	W, B, BFL	M - D	SU - LS
American Beech ( <i>Fagus grandifolia</i> )	W, B	M - D, AC	SU - LS
Red or Green Ash ( <i>Fraxinus pennsylvanica</i> )	W, B	W - M, V	SU - LS
Honeylocust ( <i>Gleditsia triacanthos</i> )*	W, B, BE	V	SU - LS
Common Juniper ( <i>Juniperus communis</i> )*•	W, B	D, V	SU
Eastern Red Cedar ( <i>Juniperus virginiana</i> )*•	W, B	M - D, AK - AC	SU
Tuliptree ( <i>Liriodendron tulipifera</i> )*	HB, BFL	W - M	LS - SH
Sweetbay Magnolia ( <i>Magnolia virginiana</i> )*•	W, B	M - D, V	SU - SH
Red Mulberry ( <i>Morus rubra</i> )*•	W, B	M	SU
White Pine ( <i>Pinus strobus</i> )	W, B	M - D, AC	SU - LS
Eastern Cottonwood ( <i>Populus deltoides</i> )	W, B, BF	W - M	SU
Black Cherry ( <i>Prunus serotina</i> )*•	HB, BFL, B	M, V	SU - LS
Common Chokecherry ( <i>Prunus virginiana</i> )*•	W, B, BF	M - D, N	SU
White Oak ( <i>Quercus alba</i> )	W, B	M - D, V	SU



Species	Wildlife Benefits <sup>1</sup>	Soil Conditions <sup>2</sup>	Light Conditions <sup>3</sup>
Scarlet Oak ( <i>Quercus coccinea</i> )	W, B, BFL	D	SU - LS
Red Oak ( <i>Quercus rubra</i> )	W, B, BFL	M - D, AC	SU - LS
Black Oak ( <i>Quercus velutina</i> )	W, B, BFL	M - D, AC, V	SU
Canadian Yew ( <i>Taxus canadensis</i> )*•	W, B	W - M	SU - SH
American Basswood ( <i>Tilia americana</i> )	B, BE	M, AK, AC	SU - LS
<b>Shrubs</b>			
Black Chokecherry ( <i>Aronia melanocarpa</i> )*•	W, B	D, AC	SU - LS
Cockspur Hawthorn ( <i>Crataegus crus-galli</i> )*•	W, B	M - D, V	SU
Thicket Hawthorn ( <i>Crataegus punctata</i> )*•	W, B	M - D, V	SU
Washington Hawthorn ( <i>Crataegus phaenopyrum</i> )*•	W, B, BF	W - M	SU
Dogwood ( <i>Cornus</i> Spp.) [Red-osier ( <i>C. stolonifera</i> ), Silky ( <i>C. obliqua</i> ), Pagoda ( <i>C. alternifolia</i> ), and Gray ( <i>C. racemosa</i> )]*•	W, B, BFL	W - M	SU - LS
Burning Bush ( <i>Euonymus atropurpureus</i> )*	W, B	M - D	SU - SH
Running Strawberry Bush ( <i>Euonymus obovatus</i> )*	W, B	M - D	SU - SH
Common Winterberry ( <i>Ilex verticillata</i> )*•	W, B	M - D, AC	SU - LS
Spice Bush ( <i>Lindera benzoin</i> )*•	W, B, BF, BFL	M, V	SU - SH
Common Ninebark ( <i>Physocarpus opulifolius</i> )*•	W	W - D, AC, AK	SU - LS
Smooth Sumac ( <i>Rhus glabra</i> )*•	W, B, BF	M - D	SU
Elderberry ( <i>Sambucus canadensis</i> )*•	W, B, BF	M, D, W	SU - LS
Bladdernut ( <i>Staphylea trifolia</i> )*	W, BE	M - D	SU - SH
Maple-leaf Viburnum ( <i>Viburnum acerifolium</i> )*•	W, B	M - D, AC	SU - SH
Arrowwood ( <i>Viburnum dentatum</i> )*•	B	M, AC, V	SU - LS
Nannyberry ( <i>Viburnum lentago</i> )*•	W, B	M - D	SU - SH
Blackhaw Viburnum ( <i>Viburnum prunifolium</i> )*•	W, B	D, AK	SH

\* flowering species      • fruiting species valuable to wildlife and/or birds

<sup>1</sup> Food and/or cover provided for; W = wildlife, B = birds, BF = butterflies, BFL = butterfly larva, BE = bees, HB = hummingbirds

<sup>2</sup> W = wet, M = moist, D = dry, N = neutral soils, AK = alkaline soils, AC = acidic soils, CA = calcareous soils, L = limestone, V = adaptable to a variety of soil conditions

<sup>3</sup> SU = sun, LS = light shade, SH = shade

## Beware of Exotic Species

- Multiflora Rose (*Rosa multiflora*)
- Bush Honeysuckle (*Lonicera maackii*,  
*Lonicera tatarica*, *Lonicera morrowii*)
- European Buckthorn (*Rhamnus cathartica*)
- Privet (*Ligustrum vulgare*)
- Barberry (*Berberis thunbergii*)
- Russian Olive (*Elaeagnus angustifolia*)

## Additional Resources

### Online Resources

- **National Wildlife Federation**—<http://www.nwf.org>  
Provides helpful information on creating backyard wildlife habitat and provides certification
- **OhioLine**—<http://ohioline.ag.ohio-state.edu/~ohioline>  
Native Plants Bulletin—<http://ohioline.osu.edu/b865/index.html>  
Information on native plants of OH; growing conditions, where to purchase, etc.
- **National Audubon Society**—<http://www.audubon.org/>
- **Ohio Department of Natural Resources**—<http://www.odnr.gov/>  
Division of Natural areas—<http://www.dnr.state.oh.us/odnr/dnap>  
Division of Wildlife 1-800-WILDLIFE <http://www.dnr.state.oh.us/wildlife/resources/>  
Provides information on backyard wildlife habitat  
Division of Forestry—<http://www.hcs.ohio-state.edu/odnr/forestry.htm>  
You can purchase several native trees and shrubs from the Division
- **Birdsource**—<http://www.birdsource.org/>  
Information on creating backyard wildlife habitat as well as information on the great backyard bird count.  
The great backyard bird count is an excellent way to contribute to bird conservation and research. Feb. 15-18th
- **Environmental Protection Agency Green Acres Program**—<http://www.epa.gov/grtlakes/greenacres/>

### Books

*Go Native—Gardening with Native Plants and Wildflowers in the Lower Midwest* by Carolyn Harstad

*Landscaping with Wildflowers and Native Plants* by William Wilson

*Peterson's Guide to Eastern Birds*

*The Birds of Ohio* by Bruce Peterjohn

*Peterson's Guide to Eastern Trees and Shrubs* by George A. Petrides

*The Woody Plants of Ohio* by Lucy Braun

*Newcomb's Wildflower Guide* by Lawrence Newcomb

### Benefits of Native Landscaping

- Reduces time, energy, and money spent on yard maintenance
- Raises property values
- Promotes biodiversity
- Increases value to wildlife
- Prevents or reduces erosion
- Reduces the need for herbicide, pesticide, and fertilizer applications

Visit Ohio State University Extension's web site "Ohioline" at: <http://ohioline.osu.edu>

All educational programs conducted by Ohio State University Extension are available to clientele on a nondiscriminatory basis without regard to race, color, creed, religion, sexual orientation, national origin, gender, age, disability or Vietnam-era veteran status.

Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

7/02-klw





# Selected Ohio Native Plants

## For Landscape and Restoration Use

Compiled by the ODNR Division of Natural Areas and Preserves, this list represents those species native to Ohio that can be used for a variety of habitats.

### *Field and Prairie Species*

Plant Type	Scientific Name	Common Name
<b><i>Deciduous-Shrub</i></b>		
	Ceanothus americanus	New Jersey tea
	Cornus racemosa	gray dogwood
	Corylus americana	American hazelnut or filbert
	Rhus aromatica	fragrant sumac
	Rhus copallina	winged sumac
	Rhus glabra	smooth sumac
	Rhus typhina	staghorn sumac
	Rosa setigera	prairie rose
	Rubus idaeus	red raspberry
	Rubus occidentalis	black raspberry
	Salix humilis	prairie willow
<b><i>Deciduous-Tree</i></b>		
	Diospyros virginiana	persimmon
	Malus coronaria	wild crabapple
	Prunus americana	wild plum
	Quercus imbricaria	shingle oak
	Quercus macrocarpa	bur oak
	Quercus stellata	post oak
<b><i>Forb-Annual</i></b>		
	Chamaecrista fasciculata	partridge-pea
	Sabatia angularis	rose-pink
<b><i>Forb-Annual/Bienni</i></b>		
	Lobelia spicata	pale lobelia

Plant Type	Scientific Name	Common Name
<b><i>Forb-Biennial</i></b>	Rudbeckia hirta	black-eyed susan
	Gaura biennis	biennial gaura
<b><i>Forb-Perennial</i></b>	Allium cernuum	nodding onion
	Anemone canadensis	Canada anemone, windflower
	Anemone virginiana	thimbleweed, tall anemone
	Asclepias sullivantii	Sullivant's milkweed
	Asclepias tuberosa	butterfly weed
	Asclepias verticillata	whorled milkweed
	Aster ericoides	heath aster, white wreath aster
	Aster laevis	smooth aster
	Aster novae-angliae	New England aster
	Aster oolentangiensis	sky blue aster
	Baptisia alba	white false indigo
	Baptisia tinctoria	yellow false indigo
	Blephilia ciliata	downy woodmint
	Coreopsis lanceolata	long-stalked coreopsis
	Coreopsis tripteris	tall coreopsis
	Delphinium exaltatum	tall larkspur
	Dodecatheon meadia	shooting star
	Echinacea purpurea	purple coneflower
	Eupatorium altissimum	tall boneset
	Eupatorium coelestinum	mist flower
	Euphorbia corollata	flowering spurge
	Helianthus grosseserratus	sawtooth sunflower
	Helianthus hirsutus	hairy sunflower
	Helianthus occidentalis	western sunflower
	Helianthus strumosus	pale-leaved sunflower
	Helianthus tuberosus	Jerusalem-artichoke
	Heliopsis helianthoides	ox-eye sunflower



Plant Type	Scientific Name	Common Name
	<i>Houstonia canadensis</i>	Canada bluets
	<i>Hypoxis hirsuta</i>	yellow star-grass
	<i>Lespedeza capitata</i>	roundheaded bush-clover
	<i>Liatris aspera</i>	rough blazing-star
	<i>Liatris scariosa</i>	large blazing-star
	<i>Liatris spicata</i>	spiked blazing star
	<i>Liatris squarrosa</i>	scaly blazing-star
	<i>Lithospermum canescens</i>	hoary puccoon
	<i>Monarda fistulosa</i>	wild bergamot
	<i>Onosmodium molle</i>	false gromwell
	<i>Penstemon digitalis</i>	beardtongue
	<i>Penstemon hirsutus</i>	hairy beardtongue
	<i>Phlox maculata</i>	spotted phlox
	<i>Phlox pilosa</i>	prairie phlox
	<i>Physostegia virginiana</i>	obedient plant
	<i>Pycnanthemum tenuifolium</i>	slender mountain-mint
	<i>Pycnanthemum verticillatum</i>	hairy mountain-mint
	<i>Pycnanthemum virginianum</i>	Virginia mountain-mint
	<i>Ratibida pinnata</i>	gray-headed coneflower
	<i>Rudbeckia fulgida</i>	brown-eyed susan
	<i>Rudbeckia triloba</i>	three-lobed coneflower
	<i>Ruellia humilis</i>	wild petunia
	<i>Senna hebecarpa</i>	wild senna
	<i>Silphium terebinthinaceum</i>	prairie dock
	<i>Silphium trifoliatum</i>	whorled rosinweed
	<i>Solidago juncea</i>	early goldenrod
	<i>Solidago nemoralis</i>	gray goldenrod
	<i>Solidago riddellii</i>	Riddell's goldenrod
	<i>Solidago rigida</i>	stiff goldenrod
	<i>Solidago speciosa</i>	showy goldenrod
	<i>Tephrosia virginiana</i>	goat's rue

Plant Type	Scientific Name	Common Name
	Teucrium canadense	American germander
	Tradescantia ohiensis	Ohio spiderwort
	Verbena simplex	narrow-leaved vervain
	Verbena stricta	white vervain
	Vernonia gigantea	tall ironweed
	Veronicastrum virginicum	Culver's root
	Viola sagittata	arrow-leaved violet
	Zizia aptera	heart-leaved golden alexanders
	Zizia aurea	golden alexanders
<b>Graminoid</b>		
	Andropogon gerardii	big bluestem
	Bouteloua curtipendula	sideoats gramma
	Bromus kalmii	prairie brome, wild chess
	Elymus canadensis	Canada wild rye
	Eragrostis spectabilis	purple lovegrass
	Panicum virgatum	switchgrass
	Schizachyrium scoparium	little bluestem
	Sorghastrum nutans	Indian grass
<b>Vine</b>		
	Clematis virginiana	virgin's bower

Species represented in this list were chosen because they are relatively common native plants. They generally are not weedy and are thought to be fairly easy to grow. No threatened or endangered species are included. This list is subject to continuous revisions. The most up-to-date version of this list will be available on the Division's

#### FOR MORE INFORMATION CONTACT:

ODNR Division of Natural Areas and Preserves

2045 Morse Road, Bldg. C-3  
Columbus, OH 43229  
[naturepreserves.ohiodnr.gov](http://naturepreserves.ohiodnr.gov)

January 2007



## Appendix C / Pollinator Habitat Seed Mix

## SGI for RES 100 acres

25278

### FORBS

Description	Quantity	# Seeds	/Sq-FT	% Ct	% Wt	Lot	Genotype	Comment
Allium cernuum (Nodding Onion)	6.250 LB	760,000	0.2	0.23	0.54		,	
Asclepias tuberosa (Butterfly Weed)	12.500 LB	860,000	0.2	0.26	1.09		,	
Astragalus canadensis (Canada Milk Vetch)	4.688 LB	1,275,000	0.3	0.38	0.41		,	
Baptisia alba (White Wild Indigo)	12.500 LB	340,000	0.1	0.10	1.09		,	
Chamaecrista fasciculata (Partridge Pea)	100.000 LB	4,320,000	1.0	1.29	8.70		,	
Coreopsis lanceolata (Lance-leaf Coreopsis)	50.000 LB	16,000,000	3.7	4.76	4.35		,	
Dalea candida (White Prairie Clover)	37.500 LB	11,400,000	2.6	3.39	3.26		,	
Dalea purpurea (Purple Prairie Clover)	50.000 LB	14,400,000	3.3	4.29	4.35		,	
Echinacea pallida (Pale Purple Coneflower)	25.000 LB	2,080,000	0.5	0.62	2.18		,	
Echinacea purpurea (Purple Coneflower)	12.500 LB	1,320,000	0.3	0.39	1.09		,	
Heliopsis helianthoides (Early Sunflower)	25.000 LB	1,840,000	0.4	0.55	2.18		,	
Lespedeza capitata (Round-headed Bush Clover)	12.500 LB	1,600,000	0.4	0.48	1.09		,	
Oligoneuron rigidum (Stiff Goldenrod)	6.250 LB	4,100,000	0.9	1.22	0.54		,	
Penstemon digitalis (Foxglove Beardtongue)	9.375 LB	19,500,000	4.5	5.81	0.82		,	
Rudbeckia hirta (Black-eyed Susan)	50.000 LB	73,600,000	16.9	21.92	4.35		,	
Senna hebecarpa (Wild Senna)	25.000 LB	560,000	0.1	0.17	2.18		,	
Symphyotrichum laeve (Smooth Blue Aster)	3.125 LB	2,750,000	0.6	0.82	0.27		,	
Verbena stricta (Hoary Vervain)	12.500 LB	5,600,000	1.3	1.67	1.09		,	
<b>SubTotal</b>	7275.000 OZ 454.688 LB	162,305,000		48.33	39.58			

### FORBS

## GRASSES, SEDGES & RUSHES

Description	Quantity	# Seeds	/Sq-FT	% Ct	% Wt	Lot	Genotype	Comment
Bouteloua curtipendula (Side- oats Grama)	306.250 LB	29,400,000	6.7	8.76	26.66		,	
Bouteloua gracilis (Blue Grama)	100.000 LB	64,000,000	14.7	19.06	8.70		,	
Schizachyrium scoparium (Little Bluestem)	246.250 LB	59,100,000	13.6	17.60	21.44		,	
Sporobolus compositus (Rough Dropseed)	40.625 LB	18,200,000	4.2	5.42	3.54		,	
<b>SubTotal</b>	11090.000 OZ 693.125 LB	170,700,000		50.83	60.33			

## GRASSES, SEDGES & RUSHES

Seeding Rate 77 per sq ft.

<b>Grand Totals</b>	18365.000 OZ 1147.813 LB	333,005,000
---------------------	-----------------------------	-------------

Notes We are currently out of Muhlenbergia mexicana - amounts increased for Bouteloua curtipendula, Schizachyrium scoparium, and Sporobolus compositus



## Appendix D / Ohio Noxious and Invasive Species Plant Lists



## **Chapter 901:5-37 Noxious Weeds**

### **901:5-37-01 Prohibited noxious weeds.**

The following plants are hereby designated "prohibited noxious weeds":

- (A) Shatter cane (*Sorghum bicolor*).
- (B) Russian thistle (*Salsola Kali* var. *tenuifolia*).
- (C) Johnsongrass (*Sorghum halepense* ).
- (D) Wild parsnip (*Pastinaca sativa*).
- (E) Grapevines(*Vitis* spp.), when growing in groups of one hundred or more and not pruned, sprayed, cultivated, or otherwise maintained for two consecutive years.
- (F) Canada thistle (*Cirsium arvense* ).
- (G) Poison hemlock (*Conium maculatum*).
- (H) Cressleaf groundsel (*Senecio glabellus*).
- (I) Musk thistle (*Carduus nutans*).
- (J) Purple loosestrife (*Lythrum salicaria*).
- (K) Mile-A-Minute Weed (*Polygonum perfoliatum*).
- (L) Giant Hogweed (*Heracleum mantegazzianum*).
- (M) Apple of Peru (*Nicandra physalodes*).
- (N) Maretail (*Conyza canadensis*)
- (O) Kochia (*Bassia scoparia*).
- (P) Palmer amaranth (*Amaranthus palmeri*).
- (Q) Kudzu (*Pueraria montana* var. *lobata*).
- (R) Japanese knotweed (*Polygonum cuspidatum*).
- (S) Yellow Groove Bamboo (*Phyllostachys aureasculata*), when the plant has spread from its original premise of planting and is not being maintained.
- (T) Field bindweed (*Convolvulus arvensis*).
- (U) Heart-podded hoary cress (*Lepidium draba* sub. *draba*).
- (V) Hairy whitetop or ballcress *Lepidium appelianum*).
- (W) Perennial sowthistle (*Sonchus arvensis*).
- (X) Russian knapweed (*Acroptilon repens*).
- (Y) Leafy spurge (*Euphorbia esula*).
- (Z) Hedge bindweed (*Calystegia sepium*).
- (AA) Serrated tussock (*Nassella trichotoma*).

(BB) Columbus grass (*Sorghum x alnum*).

(CC) Musk thistle (*Carduus nutans*).

(DD) Forage Kochia (*Bassia prostrata*).

(EE) Water Hemp (*Amaranthus tuberculatus*).

Effective: 9/14/2018

Five Year Review (FYR) Dates: 6/29/2018 and 09/14/2023

Promulgated Under: 119.03

Statutory Authority: 901.10, 5579.04

Rule Amplifies: 5579.05, 5579.08

Prior Effective Dates: 10/15/1987, 02/05/1988, 06/30/1992, 11/21/1994, 01/25/2005, 03/26/2007, 11/12/2010



## **901:5-30-01 Invasive plant species.**

(A) In order to protect native plant species and thwart the growth of invasive plant species, the director of the Ohio department of agriculture pursuant to section 901.50 of the Revised Code hereby declares the plants listed in paragraphs (A)(1) to (A)(38) of this rule as invasive plants. The invasive plants are first designated by the plant's botanical name and then by the plants common name. The botanical name is the official designation for the plant.

- (1) *Ailanthus altissima*, tree-of-heaven;
- (2) *Alliaria petiolata*, garlic mustard
- (3) *Berberis vulgaris*, common barberry;
- (4) *Butomus umbellatus*, flowering rush;
- (5) *Celastrus orbiculatus*, oriental bittersweet;
- (6) *Centaurea stoebe* ssp. *Micranthos*, spotted knapweed;
- (7) *Dipsacus fullonum*, common teasel;
- (8) *Dipsacus laciniatus*, cutleaf teasel;
- (9) *Egeria densa* Brazilian, elodea;
- (10) *Elaeagnus angustifolia*, russian olive;
- (11) *Elaeagnus umbellata*, autumn olive;
- (12) *Epilobium hirsutum*; hairy willow herb;
- (13) *Frangula alnus*, glossy buckthorn;
- (14) *Heracleum mantegazzianum*, giant hogweed;
- (15) *Hesperis matronlis*, dame's rocket;
- (16) *Hydrilla verticillata*, hydrilla;
- (17) *Hydrocharis morsus-ranae*, european frog-bit;
- (18) *Lonicera japonica*, japanese honeysuckle;
- (19) *Lonicera maackii*, amur honeysuckle;
- (20) *Lonicera morrowii*, morrow's honeysuckle;
- (21) *Lonicera tatarica*, tatarian honeysuckle;
- (22) *Lythrum salicaria*, purple loosestrife;
- (23) *Lythrum virgatum*, european wand loosestrife;
- (24) *Microstegium vimineum*, japanese stiltgrass;
- (25) *Myriophyllum aquaticum*, parrotfeather;
- (26) *Myriophyllum spicatum*, eurasian water-milfoil;
- (27) *Nymphoides peltata*, yellow floating heart;

- (28) *Phragmites australis*, common reed;
- (29) *Potamogeton crispus*, curly-leaved pondweed;
- (30) *Pueraria montana* var. *lobata*, kudzu;
- (31) *Pyrus calleryana*, callery pear;
- (32) *Ranunculus ficaria*, fig buttercup/lesser celandine;
- (33) *Rhamnus cathartica*, european buckthorn;
- (34) *Rosa multiflora*; multiflora rose
- (35) *Trapa natans*, water chestnut;
- (36) *Typha angustifolia*, narrow-leaved cattail;
- (37) *Typha x glauca*, hybrid cattail; and
- (38) *Vincetoxicum nigrum*, black dog-strangling vine, black swallowwort.

(B) Except as provided in paragraphs (C) and (D) of this rule, no person shall sell, offer for sale, propagate, distribute, import or intentionally cause the dissemination of any invasive plant as defined in paragraph (A) of this rule in the state of Ohio.

(C) The prohibitions listed in paragraph (B) of this rule does not apply to the following:

- (1) *Lythrum virgatum*, european wand loosestrife until one year after the effective date of this rule.
- (2) *Pyrus calleryana*, callery pear until five year after the effective date of this rule.

(D) A person may conduct the following activities with the species listed in paragraphs (A) (1) to (A)(38) of this rule in a manner that does not result in the further spread of those species:

- (1) Dispose of the plant;
- (2) Controlling the plant; and
- (3) Using the plant for research or educational purposes pursuant to a compliance agreement issued by the department.

(E) The director of the Ohio department of agriculture or his authorized representative may seize, order removed from sale, or order destroyed any plant described in paragraph (A) of this rule which has been found in violation of paragraph (B) of this rule.

(F) The director may exempt a cultivar of any invasive plant species defined in paragraph (A) of this rule if scientific evidence is presented that the cultivar is not invasive.

Effective: 1/7/2018

Five Year Review (FYR) Dates: 01/07/2023

Promulgated Under: 119.03

Statutory Authority: 901.50

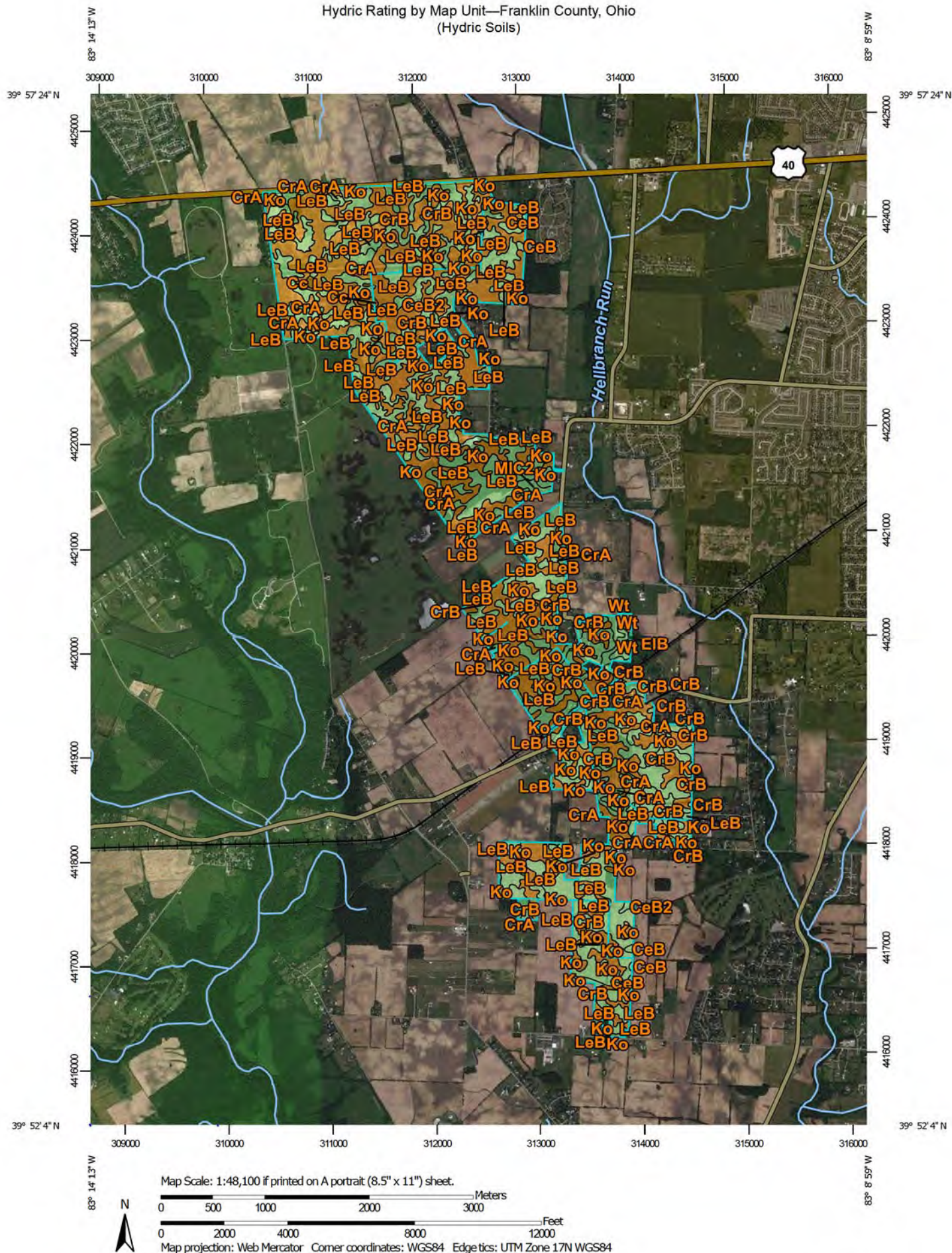
Rule Amplifies: 901.50



## Appendix E / NRCS Soil Reports

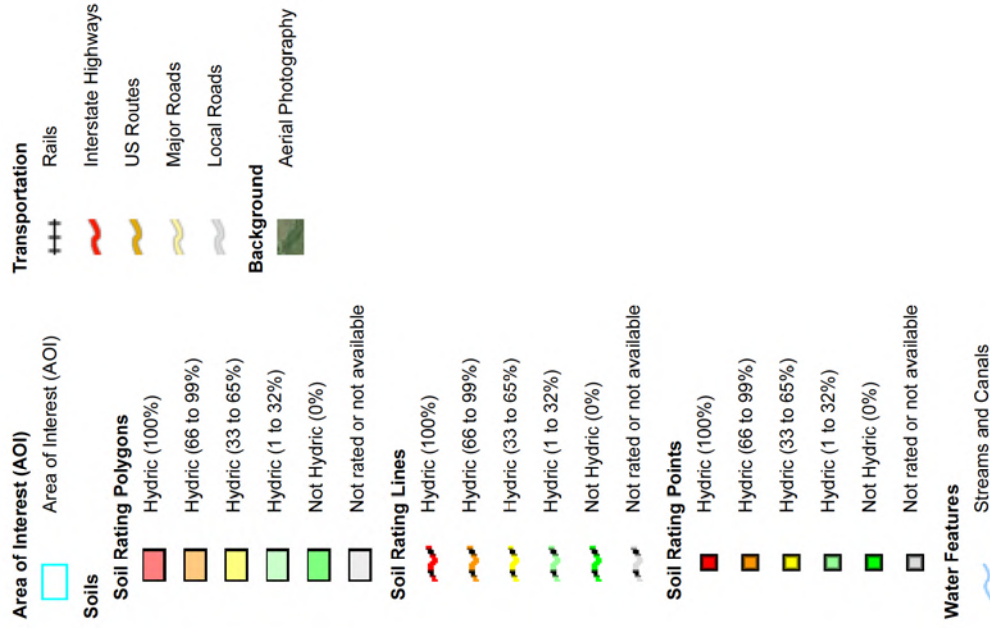


# Hydric Rating by Map Unit—Franklin County, Ohio (Hydric Soils)





## MAP LEGEND



## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.sc.egov.usda.gov/>

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Ohio

Survey Area Data: Version 19, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 12, 2009—Mar 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cc	Carlisle muck	95	5.4	0.2%
CeA	Celina silt loam, 0 to 2 percent slopes	5	1.4	0.1%
CeB	Celina silt loam, 2 to 6 percent slopes	10	7.0	0.3%
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	4	17.2	0.7%
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	5	146.0	6.2%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	5	243.8	10.4%
EIB	Eldean silt loam, 2 to 6 percent slopes	0	0.6	0.0%
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	90	1,087.5	46.5%
LeB	Lewisburg-Crosby complex, 2 to 6 percent slopes	15	809.0	34.6%
MIC2	Miamian silty clay loam, 6 to 12 percent slopes, eroded	5	14.3	0.6%
Wt	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2 percent slopes	90	5.5	0.2%
<b>Totals for Area of Interest</b>			<b>2,337.8</b>	<b>100.0%</b>

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

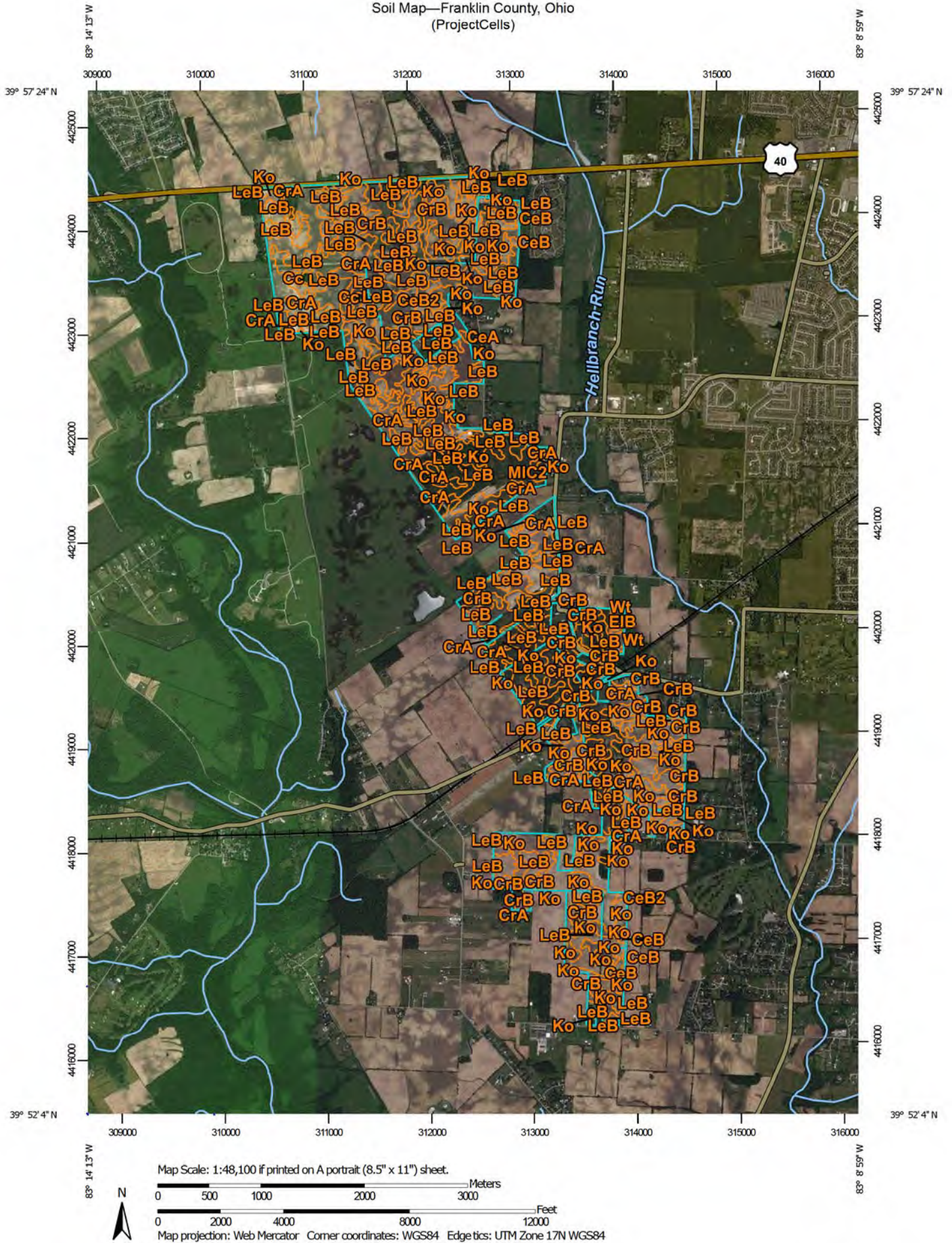
*Aggregation Method:* Percent Present

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower



# Soil Map—Franklin County, Ohio (ProjectCells)



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

11/5/2020  
Page 1 of 3



## MAP LEGEND

<b>Area of Interest (AOI)</b>		Area of Interest (AOI)		Spoil Area
<b>Soils</b>		Soil Map Unit Polygons		Stony Spot
		Soil Map Unit Lines		Very Stony Spot
		Soil Map Unit Points		Wet Spot
<b>Special Point Features</b>		Blowout		Other
		Borrow Pit		Special Line Features
		Clay Spot		<b>Water Features</b>
		Closed Depression		Streams and Canals
		Gravel Pit		<b>Transportation</b>
		Gravelly Spot		Rails
		Landfill		Interstate Highways
		Lava Flow		US Routes
		Marsh or swamp		Major Roads
		Mine or Quarry		Local Roads
		Miscellaneous Water		<b>Background</b>
		Perennial Water		Aerial Photography
		Rock Outcrop		
		Saline Spot		
		Sandy Spot		
		Severely Eroded Spot		
		Sinkhole		
		Slide or Slip		
		Sodic Spot		

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.sc.egov.usda.gov>

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Ohio

Survey Area Data: Version 19, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 12, 2009—Mar 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cc	Carlisle muck	5.4	0.2%
CeA	Celina silt loam, 0 to 2 percent slopes	1.4	0.1%
CeB	Celina silt loam, 2 to 6 percent slopes	7.0	0.3%
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	17.2	0.7%
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	146.0	6.2%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	243.8	10.4%
EIB	Eldean silt loam, 2 to 6 percent slopes	0.6	0.0%
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	1,087.5	46.5%
LeB	Lewisburg-Crosby complex, 2 to 6 percent slopes	809.0	34.6%
MIC2	Miamian silty clay loam, 6 to 12 percent slopes, eroded	14.3	0.6%
Wt	Westland silty clay loam, Southern Ohio Till Plain, 0 to 2 percent slopes	5.5	0.2%
<b>Totals for Area of Interest</b>		<b>2,337.8</b>	<b>100.0%</b>



## Appendix F / Representative Photos





Photo 1. Representative corn field and isolated trees.



Photo 2. Drainage swale within existing sod form fields.



Photo 3. Intermittent stream and overhead electric lines.



Photo 4. Existing electrical substation and access driveway.

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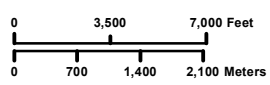
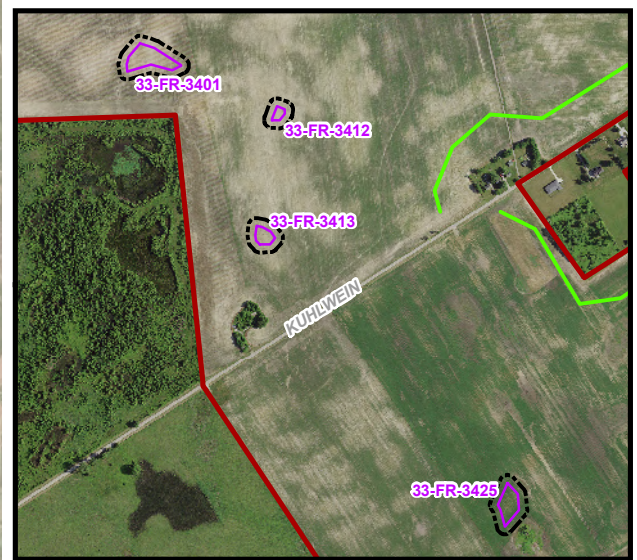
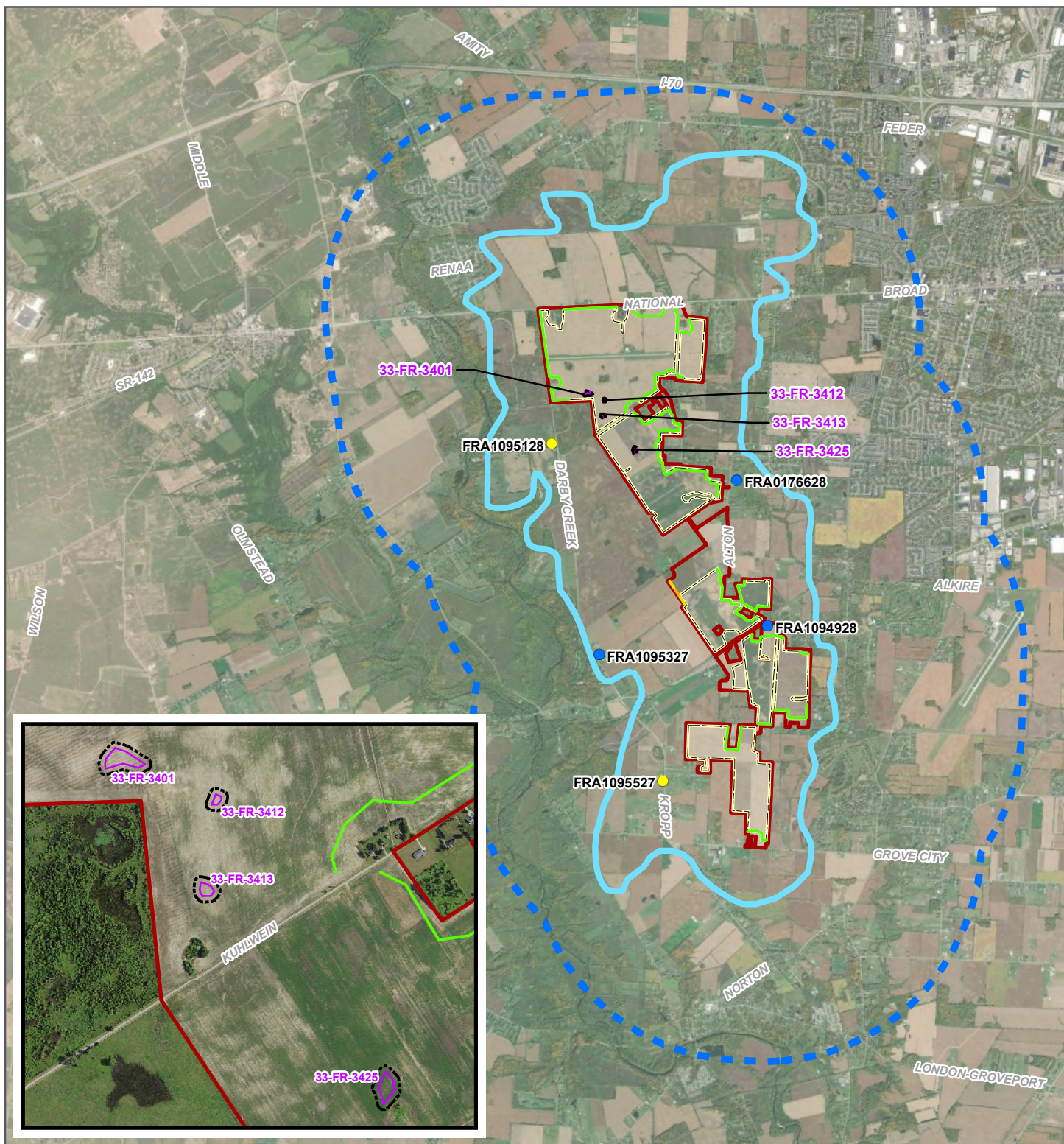
**Case No(s). 20-1679-EL-BGN**

Summary: Application - 7 of 25 (Exhibit E – Landscape, Vegetation Management, and Lighting Plan)

electronically filed by Christine M.T. Pirik on behalf of Pleasant Prairie Solar Energy LLC



## **Appendix B – Historic Properties Screening Plan**



- NRHP Eligible (Effects)
- NRHP Eligible (No Effects)
- Fenceline
- Module 1
- Module 2
- Module 3
- Archaeology Site
- 50ft Buffer
- Direct Project Area
- APE
- 2-Mile Study Area

**7.5' Quadrangle:**  
GALLOWAY

**Project No.**  
e320301701

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## Historic Architecture Screening and Archaeological Site Avoidance

### Pleasant Prairie Solar Energy Center Project Prairie and Pleasant Townships Franklin County, Ohio

**Cardno**

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## **Appendix C – OPSB Supplemental Response – Module 3 Screening**

May 12, 2021

Ms. Tanowa Troupe, Secretary  
Ohio Power Siting Board  
Docketing Division  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, Ohio 43215-3797

**Re: Case No. 20-1679-EL-BGN - In the Matter of the Application of Pleasant Prairie Solar Energy LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Solar-Powered Electric Generation Facility in Franklin County, Ohio.**

**Supplemental Response to Second and Third Data Requests from Staff of the Ohio Power Siting Board**

Dear Ms. Troupe:

Attached please find Pleasant Prairie Solar Energy LLC's ("Applicant") Supplemental Response to the Second and Third Data Requests from the staff of the Ohio Power Siting Board ("OPSB Staff"). The initial responses to the Second and Third Data Requests were provided to OPSB Staff on April 16, 2021. This Supplemental Response provides additional clarification of the responses pertaining to the aesthetics of the Project. The Applicant provided this Supplemental Response to OPSB Staff on May 12, 2021.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

/s/ Christine M.T. Pirik

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Matthew C. McDonnell (0090164)

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*Attorneys for Pleasant Prairie Solar Energy LLC*



Ms. Tanowa Troupe  
Pleasant Prairie Solar Energy LLC  
Case No. 20-1679-EL-BGN  
Page 2

### CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 12<sup>th</sup> day of May, 2021.

/s/ Christine M.T. Pirik

Christine M.T. Pirik (0029759)

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Administrative Law Judge:

[Jay.agranoff@puco.ohio.gov](mailto:Jay.agranoff@puco.ohio.gov)

4839-1615-6137 v1 [39579-53]

**BEFORE  
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Pleasant Prairie )  
Solar Energy LLC for a Certificate of Environmental )  
Compatibility and Public Need to Construct a Solar- ) Case No: 20-1679-EL-BGN  
Powered Electric Generation Facility in Franklin )  
County, Ohio. )

**PLEASANT PRAIRIE SOLAR ENERGY LLC 'S  
SUPPLEMENTAL RESPONSE TO THE SECOND AND THIRD DATA REQUESTS  
FROM THE STAFF OF THE OHIO POWER SITING BOARD**

On February 19, 2021, as supplemented on April 7 and 21, 2021, Pleasant Prairie Solar Energy LLC (“Applicant”) filed an application (“Application”) with the Ohio Power Siting Board (“OPSB”) proposing to construct a solar-powered electric generation facility in Pleasant and Prairie Townships, Franklin County, Ohio.

On April 12 and 15, 2021, the Staff of the OPSB (“OPSB Staff”) provided the Applicant with OPSB Staff’s Second and Third Data Requests, respectively. Now comes the Applicant providing the following Supplemental Response to the Second and Third Data Requests from the OPSB Staff.

**Second Data Request Question 1:** The Application discusses using a chain link fence. Primary concerns involved with a chain link fence would be potential wildlife displacement and aesthetics. Would the project be able to incorporate options which would minimize either or both of these impacts? If no, please explain why chain link is the only option.

**Third Data Request Question 5:** Provide a large-scale aerial map that depicts all inhabited residential dwellings adjacent to the project area that have a direct, unobstructed line-of-sight view to the project boundaries. Identify on the map which receptors are participating and non-participating, as well as any nearby roads and highways.

**Response:** The Second Data Request Question 1 and the Third Data Request question 5 relate to the aesthetics of the perimeter of the Project. To further represent the subject matter expert recommendations provided within the Project’s Viewshed Report and Landscape/Vegetative Management Plan (Application Exhibits E and J, respectively, filed on February 19, 2021), the Applicant has visually represented the locations of Level 3 screening within the map that is included as an attachment to this supplemental response.



Specifically, page 9 of the Landscape/Vegetative Management Plan notes, “[a] [v]isual mitigation and landscape screening plan will be developed for the Final Vegetation Management Plan for locations along public roadways, areas buffering aquatic resources, roads, fence lines, and residences where mitigation against views of the solar arrays is perceived to be needed or desired.” The document, on that same page, then goes on to describe the different landscape screening modules and notes how Module 3 should be “...proposed for areas in which viewership is the highest and viewing period the longest, such as when a residence is located across the street or adjacent to a facility.” (emphasis added)

The above recommendation is also in alignment with the Project’s Viewshed Report, which notes on page 36, section 4.2 Mitigation: “Pleasant Prairie proposes to conduct perimeter plantings to achieve screening and soften views of constructed PV Panels.” The Viewshed Report also provides that “[a]dditional details can be found in the Pleasant Prairie Landscape Mitigation Plan [Application Exhibit E].”

The above noted approach, along with the *additional* 100-foot setbacks incorporated along the Kuhlwein Road. and Murnan Road. corridors, and the use of deer fencing as recommended by local Project stakeholders, are important Project and local aesthetics.

Respectfully submitted,

/s/ Christine M.T. Pirik

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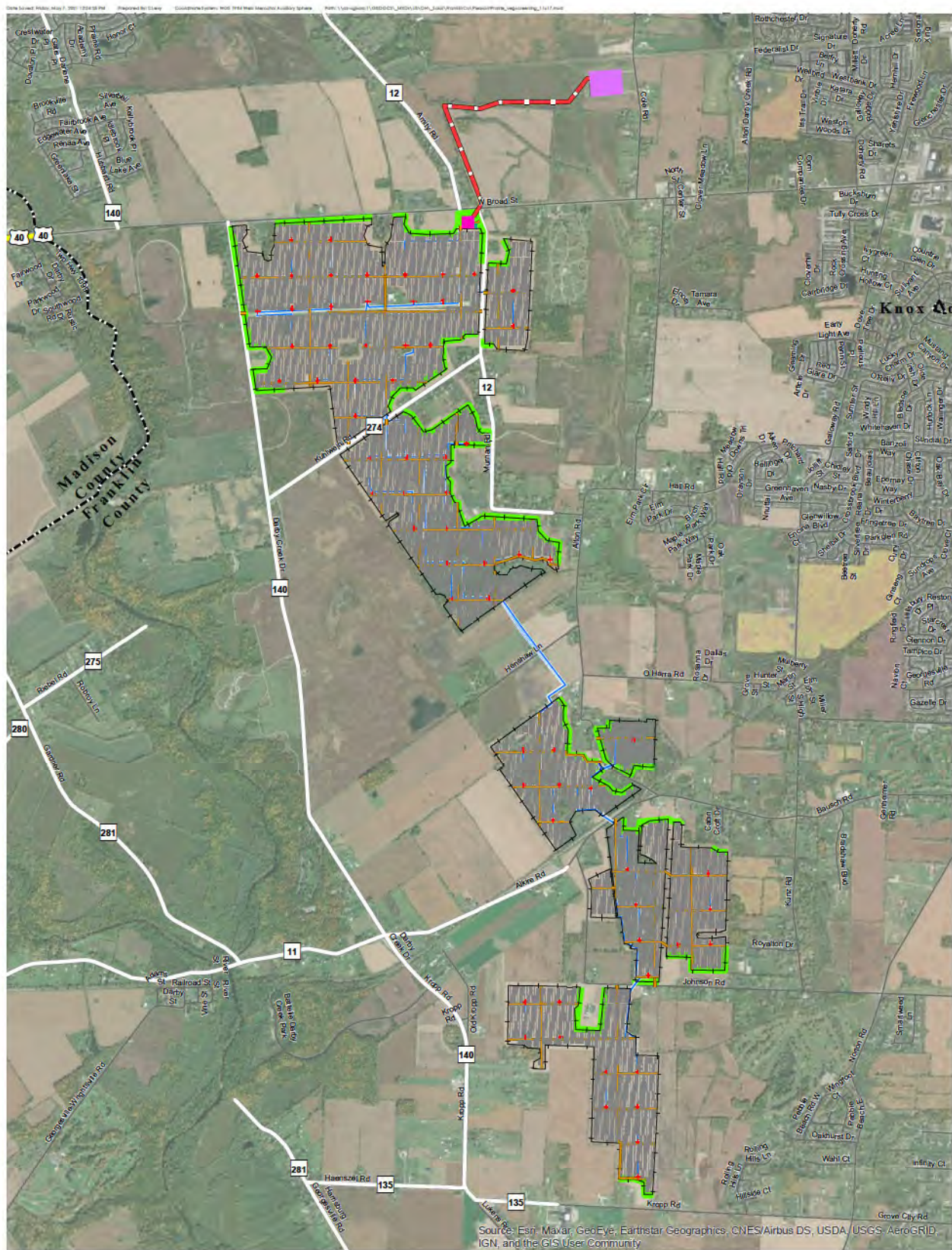
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*Attorneys for Pleasant Prairie Solar Energy LLC*





**Conceptual Module 3 Screening Locations  
For Information/Communication Purposes Only**  
Pleasant Prairie Solar | Franklin County, Ohio

Rev. 00  
May 07, 2021

**Invenergy**



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Summary: Response - Supplemental Response to Second and Third Data Requests from Staff of the Ohio Power Siting Board electronically filed by Christine M.T. Pirik on behalf of Pleasant Prairie Solar Energy LLC

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Summary: Response to Fifth Data Request from Staff of the Ohio Power Siting Board  
electronically filed by Christine M.T. Pirik on behalf of Pleasant Prairie Solar Energy LLC