Construction Notice for the Buckeye Co-Op Extension-Fayette 138 kV Line Rebuild Project

PUCO Case No. 21-0613-EL-BNR

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Administrative Code
Section 4906-6-05

Submitted by:
Ohio Power Company, Inc.

June 25, 2021

CONSTRUCTION NOTICE

Ohio Power Company, Inc.
Buckeye Co-Op Extension-Fayette 138 kV Line Rebuild Project

4906-6-05

Ohio Power Company, Inc. (the "Company") provides the following information to the Ohio Power Siting Board ("OPSB") pursuant to Ohio Administrative Code (OAC) Section 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Construction Notice.

The Company is proposing the Buckeye Co-op Extension-Fayette 138 kV Line Rebuild Project ("Project"), located in Fayettte Township, Lawrence County, Ohio. The Project involves rebuilding approximately 0.1 miles of the existing single circuit Buckeye Co-op Extension-Fayette 138 kV transmission line from the existing South Point-Sporn 138 kV line to the Buckeye Rural Electric Cooperatives' ("Buckeye") Fayette Station. Additionally, the Project will also involve installing the Solida 138 kV Switch, which will be owned by AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco") and will be filed separately with the OPSB in Case No. 21-0606-EL-BNR (Solida 138 kV Switch Project).

The rebuild of the 138 kV transmission line will mainly use existing right-of-way ("ROW"), but will require supplemental easement to accommodate the new location of the Solida Switch. The location of the Project is shown on Figure 1 in Appendix A.

The Project meets the requirements for a Construction Notice ("CN") because it is within the types of project defined by Item 1(a) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix for Electric Power Transmission Lines. This item states:

(1) New Construction, extension or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage as follows:

(a) Line(s) not greater than 0.2 miles in length.

The Project has been assigned 21-0613-EL-BNR.

B(2) Need For The Project

If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The Project requires rebuilding approximately 0.1 mile of existing transmission line and is associated with the need to install a new 138 kV phase-over-phase switch to replace the hard tap on the South Point - Sporn 138 kV line that serves a Buckeye customer (see Case No. 21-606-EL-BNR).

Hard taps limit AEP's ability to sectionalize during outages (planned or unplanned) and can result in over tripping and/or mis-operations affecting customers served from a line. Fayette Substation currently serves 3 MVA of load and approximately 800 customers. Customers served from the South Point-Sporn 138 kV line have experienced over one million customer minutes of interruption over the last five years. Failure to address the existing hard tap and install the new phase-over-phase switch will result in continued reliability issues to Buckeye's customer's delivery point and others served on the South Point-Sporn 138 kV line. Specifically, outages and customer minutes of interruptions will continue to worsen as the line assets continue to deteriorate, restoration activities will continue to be more difficult, and service interruptions to the 138 kV throughpath will continue to occur. Although portions of the affected load are transferrable to other sources, under high loading conditions, transferring loads may not be possible. As such, replacing the hard tap with this switch will significantly improve reliability to the customer substation, allow maintenance to occur without significant interruptions to the 138 kV through path, and helps with restoration times in this remote location.

The need and solution for this Project were presented to PJM on 5/20/2019 and 12/18/2019, then subsequently assigned PJM number s2159. This Project will be included in a supplement to the Company's 2021 Long Term Forecast Report, to be filed in July 2021.

B(3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The location of the Project in relation to existing transmission lines and station is shown on Figure 1, in Appendix A.

B(4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

A formal routing analysis was not needed for this Project due to existing infrastructure and the short distance of the existing Buckeye Co-op Extension-Fayette 138 kV transmission line, which provided limited route alternatives. Utilizing the existing easement to rebuild primarily along the existing centerline is the most feasible option as it minimizes land use impacts, avoids residential areas (the nearest residence is located approximately 500 feet from the Project), minimizes ecological impacts (no impacts to streams or wetlands are anticipated) and the Project will only require minimal supplemental easements (no new property owners will be affected). Supplemental easements are necessary as the Solida 138 kV Switch is unable to be located on existing centerline due to outage restrictions. Therefore, the proposed route for the Project represents the least impactful and most appropriate solution for meeting the Company and Buckeye's need in the area.

B(5) Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Company maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project. The Company also retains land agents who will discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction of the Project is planned to begin in October 2021 with an anticipated in-service date of November 2021.

B(7) Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Appendix A, Figure 1 identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map. Figure 2, in Appendix A is an aerial map of the Project area.

To visit the Project from Columbus, Ohio, take US-23 toward Circleville for approximately 80 miles. Take exit toward State Route 823 and continue for 17 miles. Merge onto US-52E/Ohio River Scenic Byway and continue for 26 miles. Turn left onto Lick Creek Road for 4 miles. Take a slight right onto Solida Road for 1 mile. Turn left onto Co Rd 144 for 0.6 miles. Turn left onto Burlington Macedonia road for 450ft. The Project will be located on the northwest side of Burlington Macedonia Rd at latitude 38.440405, longitude -82.528925.

B(8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

A list of properties required for the Project are provided in the table below.

Property Parcel No.	New Agreement Needed	Easement Agreement Obtained (Yes/No)
06-062-0200.001	Supplement Existing Easement	No
06-059-1400.002	Supplement Existing Easement	No
06-059-1400.003	Supplement Existing Easement	No

B(9) Technical Features

The applicant shall describe the following information regarding the technical features of the project:

B(9)(a) Operating Characteristics

The applicant shall provide operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The transmission line construction along the Project are anticipated to include the following:

Voltage:	138 kV
Conductors:	Single Circuit 336,400 ACSR (Merlin)
Static Wire:	7#8 Alumoweld
Insulators:	Polymer
ROW Width:	100 Feet
Structure Types:	(1) single pole direct embed structure

B(9)(b) Electric Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

Not applicable. No occupied residences or institutions are located within 100 feet of the Project.

B(9)(c) Estimated Costs

The estimated capital cost of the project.

The estimated capital cost of the Project, comprised of applicable tangible and capital costs, is approximately $566,500, using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the Ohio Power Company's FERC formula rate (Attachment H-14 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Ecological Impacts

The applicant shall describe the social and ecological impacts of the project:

B(10)(a) Land Uses

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project area is located within existing ROW, beginning at Buckeye's existing Fayette Station in unincorporated Fayette Township, along the southern border of Lawrence County. The Project area is not located in any incorporated municipality.

The Project area consists of rural residential and forested areas. There are no known parks, wildlife management areas, or nature preserve lands within 1,000 feet of the Project. The Macedonia Missionary Baptist Church, is located approximately 975 feet southeast of the Project area. However, the building is no longer operating as a church.

On-site vegetative communities consist of upland scrub/shrub, upland woods, maintained lawn, and palustrine emergent (PEM) wetland.

The Project area is in the Solida Creek-Ohio River subwatershed (HUC12 code: 050901030101) and the Buffalo Creek-Ohio River subwatershed (HUC12 code: 050901011007). Two wetlands were delineated within the Project area. The Project will impact less than 0.01 acre of palustrine emergent wetland habitat. No other environmental or cultural resources are expected to be impacted as a result of this Project. Archaeological and cultural resources, as well as areas of ecological features are further discussed in Sections (B)(10)(c) and (B)(10)(f), respectively.

B(10)(b) Agricultural Land

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

The Project is not located within registered agricultural district lands, based on coordination with the Lawrence County Auditor's Office on April 23, 2021. Additionally, the Project area does not contain any active agricultural row crop land.

B(10)(c) Archaeological or Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The Company's consultant conducted Phase I Cultural Resource Management Investigations for the Project in July of 2020. The survey concluded that no adverse effects are expected as a result of this Project (see Appendix C).

B(10)(d) Local, State, and Federal Requirements

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharge under NPDES General Permit for Discharges of Storm Water Associated with Construction Activity OHC000005. In addition a Lawrence County Earth Moving Permit will be obtained for the project. The Company will implement and maintain best management practices as

outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion and sediment to Project surface waters during storm events.

The Company's consultant completed a wetland delineation and stream identification field review of the Project area (Appendix D). Two isolated palustrine emergent wetlands were identified within the study area. Less than 0.01 acre of wetland impacts are anticipated for the construction of an access road. The Ohio Environmental Protection Agency issued an Ohio General Permit for Filling Category 1 and Category 2 Isolated Wetlands (Appendix C).

There are no other known local, state, or federal requirements that must be met prior to commencement of the Project.

B(10)(e) Endangered, Threatened, and Rare Species Investigation

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

A desktop review of the Project area was completed relative to Section 7 of the Endangered Species Act (ESA). On-site environmental and ecological assessments were conducted on August 18, 2020 to evaluate the Project area for the occurrence of potential habitat for threatened and endangered (T&E) species. On August 28, 2020, the Company's consultant requested information on T&E species and sensitive habitats within the Project area and its vicinity from the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS). The species list generated by the USFWS consultation letter and the ODNR consultation letter for the Project area is provided in the following table, which also summarizes the findings regarding the identified species.

Table 2. Rare, Threatened and Endangered Species Occurrence

Common Name	Species Name	Federal Status	State Status	Potential Impacts
Indiana bat	*Myotis sodalis*	Endangered	Endangered	No caves or mines are located within the Project area. Minimal tree clearing will be required for the Project. The Company conducted mist net surveys within the Project on 6/4-6/5/21. No rare, threatened, or endangered species were captured. Therefore, no effects to bat species are anticipated.
Northern long-eared bat	*Myotis septentrionalis*	Threatened	Endangered	
Little brown bat	*Myotis lucifugus*	—	Endangered	
Tricolored bat	*Perimyotis subflavus*	—	Endangered	
Gray beard-tongue	*Penstemon canescens*	—	Threatened	Consultation with the ODNR (Appendix C) indicated that no potential habitat for gray beard-tongue is located within the Project area.

On September 4, 2020, USFWS responded that Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) have the potential to occur within the Project area. Mist net surveys were completed on June 4 and 5, 2021. No bats were captured during netting. On June 15, 2021 UWFWS concurred that tree clearing in the Project area at any time of the year is unlikely to result in adverse impacts to Indiana bats and will not result in any unauthorized incidental take of northern long-eared bats (Appendix C).

On October 29, 2020, ODNR responded that gray beard-tongue *(Penstemon canescens*), little brown bat (*Myotis lucifugus*), tricolored bat (*Perimyotis subflavus*), Indiana bat, and northern long-eared bat have the potential to occur within the Project area (Appendix C). On Nobember 16, 2020, ODNR determined appropriate habitat for gray beard-tongue is not present and surveys do not need to be completed. On June 15, 2020 ODNR responded that risk to state-endangered bat species is low in the project area and tree cutting during summer maternity season is not likely to result in direct mortality of these species (Appendix C).

B(10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Environmental and ecological site assessments were conducted on August 18, 2020 (see Appendix D). The Project area consists of an upland forested area, two isolated PEM wetlands, an upland scrub-shrub area, and maintained lawn area. The Project area is surrounded by rural residential areas and forested areas.

There are no national, state or local parks or forests, designated or proposed wilderness areas, national or state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries located within the Project area or the potential disturbance area of the Project. There are also no Federal Emergency Management Agency (FEMA) designated floodplains.

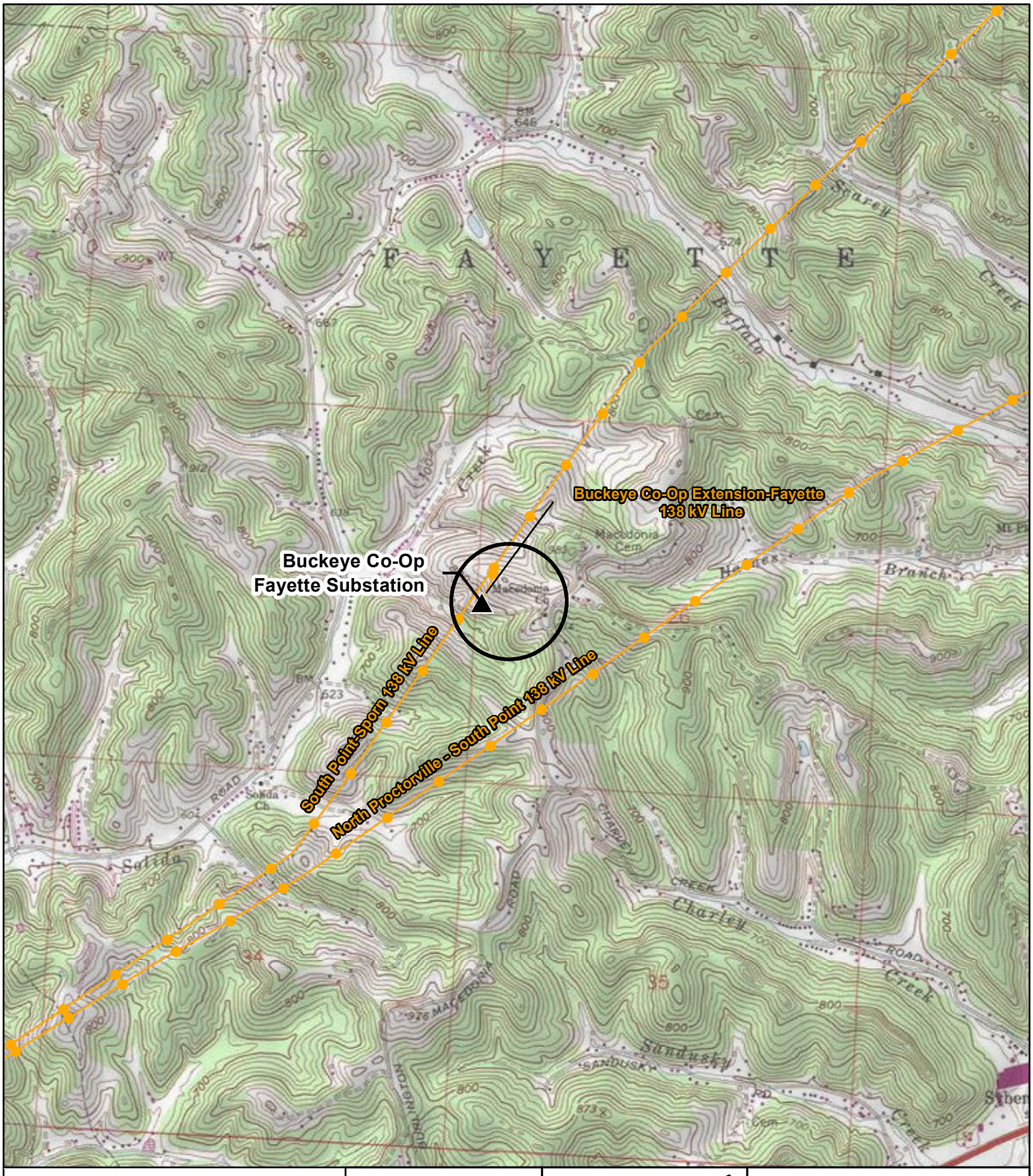
A wetland and waterbody delineation was conducted on August 18, 2020 (see Appendix D). The field delineation identified two isolated PEM wetlands within the Project's environmental study area, totaling less than 0.01 acre. The permanent access road will cross the PEM wetlands and result in permanent wetland impacts (see Appendix D). Less than 0.01 acre of permanent wetland impacts would occur as a result of the Project. Best management practices will be utilized to protect the remaining wetland habitat outside of the Project area.

B(10)(g) Other Information/Unusual Conditions

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A
Maps



Substation

Existing 138 kV Transmission Lines

Project Area

Data Sources: AEP, USGS 7.5' Topographic Quandrangles (Catlettsburg)

Coordinate System and Datum:
NAD 83 State Plane Ohio South, Feet

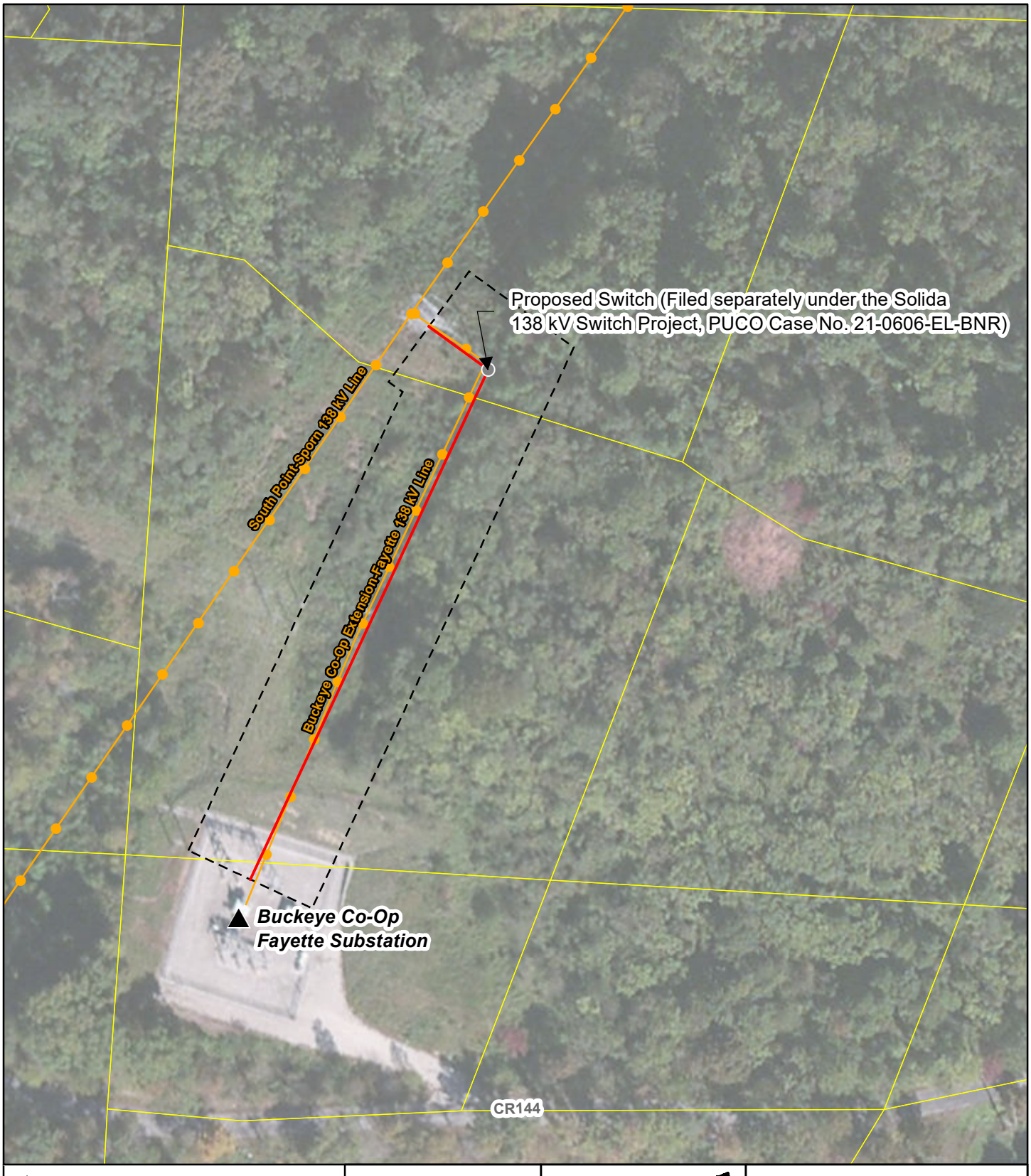
June 16, 2021

FIGURE 1
TOPOGRAPHIC OVERVIEW

Buckeye Co-Op Extension - Fayette 138 kV Line Rebuild Project

0 1,000 2,000 3,000

Feet



▲ Substation
● Solida Switch (Filed Separately)
Proposed Route
Existing 138kV Transmission Line
Right-of-Way (ROW)
Parcel Boundary

Data Sources: AEP, ESRI World Imagery Service (Clarity)

Coordinate System and Datum:
NAD 83 State Plane Ohio South, Feet

June 15, 2021

FIGURE 2
AERIAL MAP

AEP OHIO

Buckeye Co-Op Extension - Fayette 138 kV Line Rebuild Project

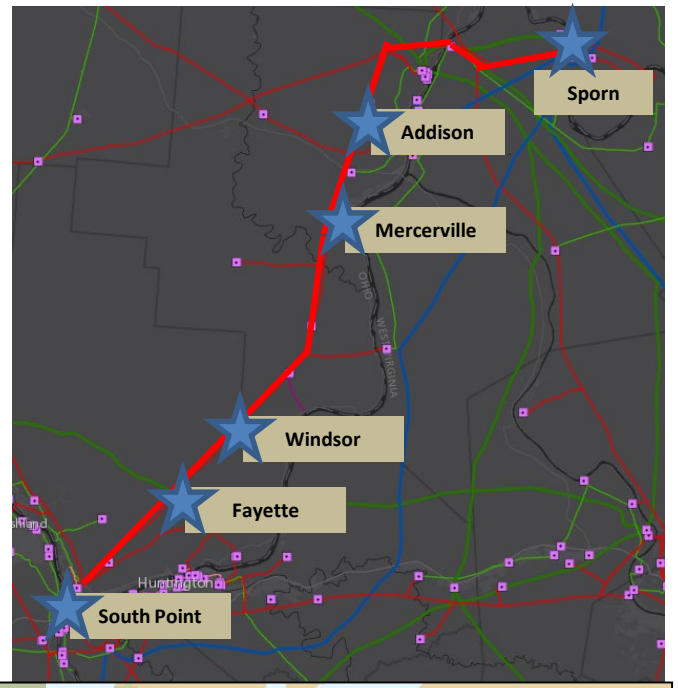
0 100
Feet

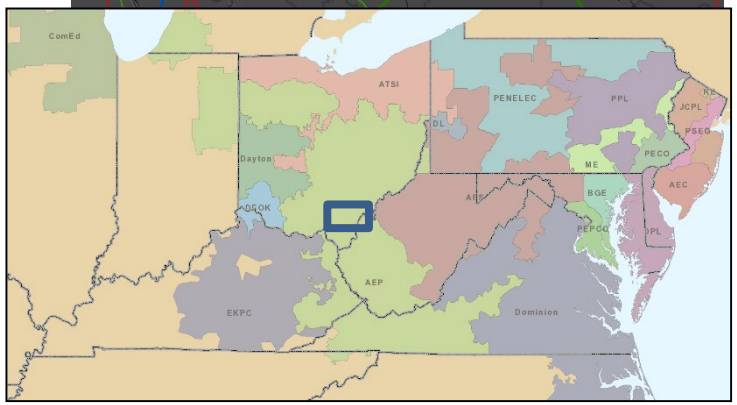
Appendix B
PJM Slides

AEP Transmission Zone: Supplemental Gallia County

Need Number: AEP-2019-OH026
Process Stage: Solutions Meeting 12/18/2019
Previously Presented: Needs Meeting 05/20/2019
Supplemental Project Driver: Operational Flexibility
Specific Assumptions Reference: AEP Guidelines for Transmission Owner Identified Needs
Problem Statement:

- The 58-mile South Point – Sporn 138 kV double circuit line has four delivery points that are connected via hard taps. The hard taps complicate restoration activities and extend outages.
- The four Buckeye Coop delivery points are at Mercerville, Windsor, Fayette, and Addison. These stations are in a remote part of AEP's service territory, which makes outage restoration activities more difficult and resulting in longer outages.
- Over the last five years these delivery points have accumulated 1,348,755 CMI.





AEP Transmission Zone: Supplemental Gallia,County

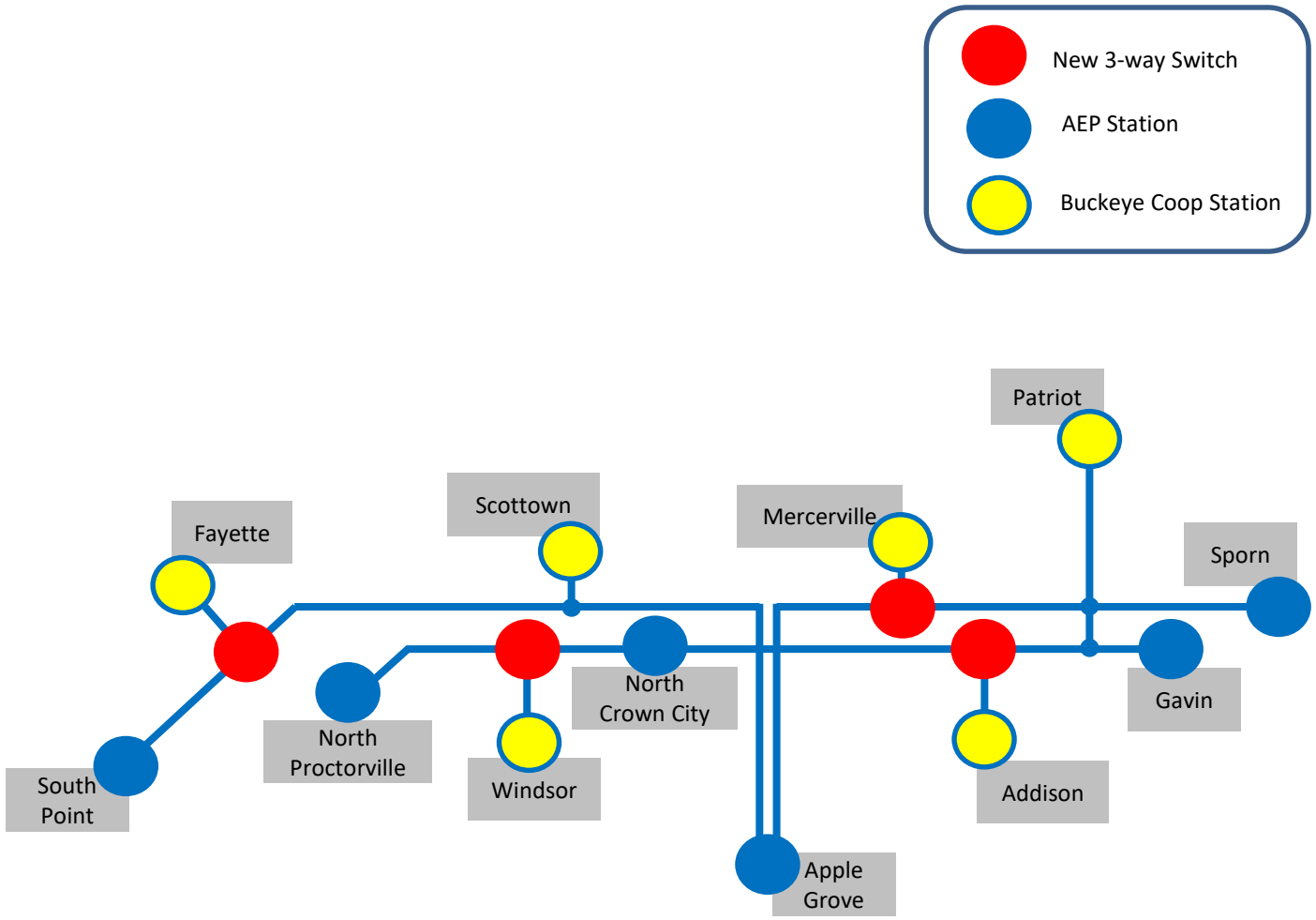
Need Number: AEP-2019-OH026
Process Stage: Solution Meeting 12/18/2019

Proposed Solution:
Install 3-way 138 kV (2000 A) MOAB's at Mercerville hard tap, including dead end structures to connect to new switch pole location. **Estimated Cost: $2.2M**
Install 3-way 138 kV (2000 A) MOAB's at Windsor hard tap.
Estimated Cost: $1.3M
Install 3-way 138 kV (2000 A) MOAB's at Fayette hard tap. Extend the existing line 0.25 miles to the new switch location.
Estimated Cost: $3.5M
Install 3-way 138 kV (2000 A) MOAB's at Addison hard tap, including dead end structures to connect to new switch pole location. **Estimated Cost: $2.5M**

Total Estimated Transmission Cost: $9.5M

Alternatives:
No viable alternatives.

Projected In-Service: 4/30/2021
Project Status: Scoping



Appendix C
Agency Correspondence

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701-2070

REPLY TO ATTENTION OF

May 20, 2021

Regulatory Division
North Branch
LRH-2021-369-OHR

APPROVED JURISDICTIONAL DETERMINATION

Shannon Hemmerly
American Electric Power
8600 Smiths Mill Road
New Albany, Ohio 43054

Dear Ms. Hemmerly:

I refer to the report titled *WETLAND AND WATERBODY DELINEATION REPORT, Solida Switch Project, Lawrence County, Ohio dated March 2021* and submitted by Arcadis U.S., Inc. on your behalf. You have requested an approved jurisdictional determination (JD) for the aquatic resources on the approximate 2.9-acre site. The property is located adjacent to Burlington Macedonia Rd (C.R. 120) in Fayette Township, Lawrence County, Ohio (38.44029 latitude, -82.529005 longitude). Your request has been assigned the following file number: LRH-2021-369-OHR. Please reference this number on all future correspondence related to this request.

The United States Army Corps of Engineers' (Corps) authority to regulate waters of the United States is based on the definitions and limits of jurisdiction contained in 33 CFR 328, including the amendments to 33 CFR 328.3 (85 Federal Register 22250), and 33 CFR 329. Section 404 of the Clean Water Act (Section 404) requires a Department of the Army (DA) permit be obtained prior to discharging dredged and/or fill material into waters of the United States, including wetlands. Section 10 of the Rivers and Harbors Act of 1899 (Section 10) requires a DA permit be obtained for any work in, on, over or under a navigable water.

The Navigable Waters Protection Rule, which became effective on June 22, 2020, was followed in this verification of Section 404 jurisdiction for the two (2) wetlands located within the approved JD boundary. Based upon a review of the submitted report and additional information available to us, this office has determined that:

- Wetlands 01 and 02 (totaling 0.02 acre) do not abut a water identified in 33 CFR 328.3(a)(1), (2), or (3), are not inundated by flooding from a water identified in 33 CFR 328.3(a)(1), (2), or (3) in a typical year, are not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by a natural berm, bank, dune, or similar natural feature, and are not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure. Therefore, Wetlands 01 and 02 are not jurisdictional waters of the United States per 33 CFR 328.3(b)(1).

Wetlands 01 and 02 are not considered jurisdictional waters of the United States and are not subject to regulation under Section 404. These non-jurisdictional features are depicted on the enclosed map and also listed in the enclosed Table 1. You should contact the Ohio Environmental Protection Agency, Division of Surface Water, at (614) 664-2001 to determine state permit requirements.

This jurisdictional verification is valid for a period of five (5) years from the date of this letter unless new information warrants revision of the delineation prior to the expiration date. This letter contains an approved JD for the subject site within the approved JD boundary. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the Great Lakes and Ohio River Division Office at the following address:

Appeal Review Officer
United States Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street, Room 10-714
Cincinnati, Ohio 45202-3222
Phone: (513) 684-7261
Fax: (513) 684-2460

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

The determination included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are United States Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

A copy of this letter will be provided to the Ohio Environmental Protection Agency at Lazarus Government Building, Post Office Box 1049 Columbus, Ohio 43216-3669. If you have any questions concerning the above, please contact Zack Abbott of the North Branch at 304-399-5336, by mail at the above address, or by email at jonathan.z.abbott@usace.army.mil.

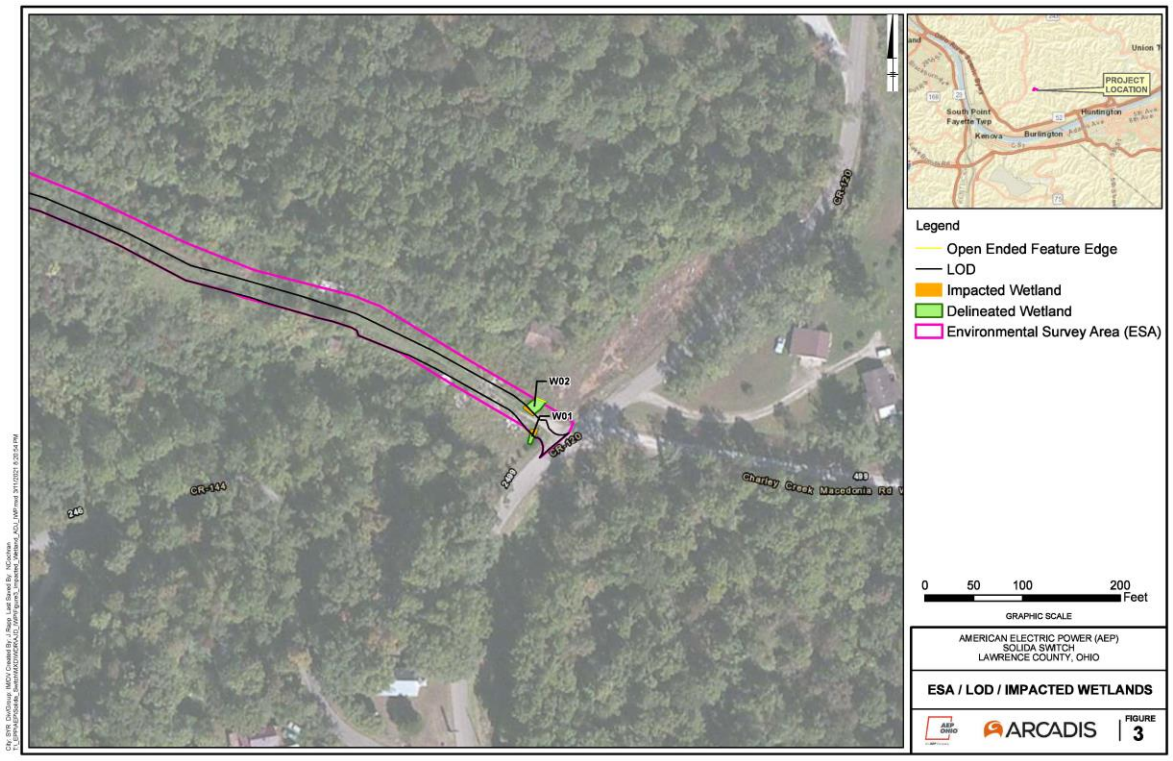
Sincerely,

Nicole Marisavljevic

Nicole Marisavljevic
Regulatory Project Manager
North Branch

Enclosures

Table 1. Features associated with the Solida Switch Project AJD, LRH-2021-369-OHR					
Aquatic Resources	**Latitude & Longitude (°N)**	**(°W)**	**Cowardin Class**	**Linear feet and/or Acres in review area**	**Regulatory Authority**
Wetland 01	38.44029	-82.52901	Emergent	0.01 acre	None; Excluded under (b)(1)
Wetland 02	38.44036	-82.52901	Emergent	0.01 acre	None; Excluded under (b)(1)



NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant:American Electric Power		File Number: LRH-2021-369-OHR	19 May 2021
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
Michael Hatten, Chief, Regulatory Division, 304-399-5710
Teresa Spagna, Chief, North Branch, 304-399-5210
Lee Robinette, Chief, Energy Resource Branch, 304-399-5610
Susan Porter, Chief, South/Transportation Branch, 304-399-5710
Address: U.S. Army Corps of Engineers
Regulatory Division
502 8th Street
Huntington, WV 25701

If you only have questions regarding the appeal process you may also contact:
Jacob Siegrist
Appeal Review Officer
U.S. Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street Room 10-714
Cincinnati, OH 45202-3222
TEL (513) 684-7261; FAX (513) 684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 18-MAY-2021
ORM Number: LRH-2021-00369
Associated JDs: N/A or ORM numbers and identifiers (e.g. HQS-2020-00001-MSW-MITSITE)
Review Area Location[1]:
State/Territory: OH Township: Fayette County/Parish/Borough: Lawrence County
Center Coordinates of Review Area: Latitude 38.44029 Longitude -82.529005

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☐ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in section II.C).
- ☒ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size	§ 10 Criteria	Rationale for § 10 Determination
N/A	N/A	N/A	N/A

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters)[3]

(a)(1) Name	(a)(1) Size	(a)(1) Criteria	Rationale for (a)(1) Determination
N/A	N/A	N/A	N/A

Tributaries ((a)(2) waters):

(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
N/A	N/A	N/A	N/A

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):

(a)(3) Name	(a)(3) Size	(a)(3) Criteria	Rationale for (a)(3) Determination
N/A	N/A	N/A	N/A

Adjacent wetlands ((a)(4) waters):

(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination
N/A	N/A	N/A	N/A

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12))[4]:

Exclusion Name	Exclusion Size	Exclusion[5]	Rationale for Exclusion Determination
W01	0.01 acres	(b)(1) Non-adjacent wetland	Wetland 01 does not abut a water identified in 33 CFR 328.3(a)(1), (2), or (3), is not inundated by flooding from a water identified in 33 CFR 328.3(a)(1), (2), or (3) in a typical year, is not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by a natural berm, bank, dune, or similar natural feature, and is not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure.
W02	0.01 acres	(b)(1) Non-adjacent wetland	Wetland 02 does not abut a water identified in 33 CFR 328.3(a)(1), (2), or (3), is not inundated by flooding from a water identified in 33 CFR 328.3(a)(1), (2), or (3) in a typical year, is not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by a natural berm, bank, dune, or similar natural feature, and is not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

_X_ Information submitted by, or on behalf of, the applicant/consultant: *WETLAND AND WATERBODY DELINEATION REPORT, Solida Switch Project, Lawrence County, Ohio dated March 2021* (JD, March 2021)
This information *(is)* sufficient for purposes of this AJD.
Rationale: *N/A*

___ Data sheets prepared by the Corps: *Title(s) and/or date(s).*

_X_ Photographs: *(aerial and other) Appendix A Photographic Log (JD, March 2021)*

___ Corps Site visit(s) conducted on: *Date(s).*

___ Previous Jurisdictional Determinations (AJDs or PJDs): *ORM Number(s) and date(s).*

_X_ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*

_X_ USDA NRCS Soil Survey: *Figure 3. NRCS Soils Map (JD, March 2021)*

_X_ USFWS NWI maps: Figure 2. NWI / NHD / FEMA Map *(JD, March 2021)*

_X_ USGS topographic maps: *Figure 1. Site Location Map (JD, March 2021)*

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

B. **Typical year assessment(s):** A typical year occurs over a rolling thirty-year period and includes the analysis of precipitation and other climatic variables to establish a normal period range (seasonally or annually) for a specific geographic region where the aquatic resource occurs. One (1) point-in-time data source dated 18 August 2020, with a corresponding antecedent precipitation tool (APT) report, is included in the evaluation for the excluded features listed in Section II D. According to the APT report for 18 August 2020, drier than normal conditions were observed during the WebWIMP dry season with a Palmer Drought Severity Index Value of 2.76 moderate wetness. The 30-day rolling total for precipitation was within the 30-year normal range. With drier than normal conditions, the wetlands did not meet the definition of an adjacent wetland. The wetlands listed in the table in Section II D do not abut a water identified in 33 CFR 328.3(a)(1), (2), or (3), are not inundated by flooding from a water identified in 33 CFR 328.3(a)(1), (2), or (3) in a typical year, are not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by a natural berm, bank, dune, or similar natural feature, and are not physically separated from a water identified in 33 CFR 328.3(a)(1), (2), or (3) only by an artificial dike, barrier, or similar artificial structure. Therefore Wetlands 01 and 02 are not jurisdictional waters of the United States per 33 CFR 328.3(b)(1).

C. Additional comments to support AJD: The entire AJD boundary is located outside the 100-year FEMA floodplain.

[1] Map(s)/Figure(s) are attached to the AJD provided to the requestor.
[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.
[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.
[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.
[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

Ohio Environmental Protection Agency

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

Re: Solida Switch
Permit - Intermediate Approval
401 Wetlands
Lawrence
DSW401217402W

June 14, 2021

Aimee Toole
AEP Ohio Transmission Company, Inc.
8600 Smiths Mill Road
New Albany, OH 43054
artoole@aep.com

Subject: Grant Authorization under Isolated Wetland and Ephemeral Stream General Permit (Level One)
Solida Switch
Ohio EPA ID No. 217402W

Dear Ms. Toole:

On June 8, 2021, the Ohio Environmental Protection Agency (Ohio EPA) received a pre-activity notice (PAN) for coverage under the OHIO GENERAL PERMIT FOR FILLING CATEGORY 1 AND CATEGORY 2 ISOLATED WETLANDS AND EPHEMERAL STREAMS (general permit). In the PAN, you requested to impact <0.02 acres of non-forested Category 1 wetlands for the purpose of removal of an existing hard tap to a customer, installation of a new three-way switch north of Fayette Station, construction of a permanent access road, and a rebuild of approximately 500 feet of existing transmission line. The project is located on Burlington Macedonia Rd (C.R.120), in Fayette Township in Lawrence County (38.440290ºN/-82.529005ºW). As compensatory mitigation for the aforementioned impacts, you provided proof of reservation of 0.1 credits at The Nature Conservancy's In-Lieu Fee program in the Raccoon-Symmes watershed (HUC 05090101).

Ohio EPA has reviewed your request and has determined that it is complete and meets the PAN requirements for coverage under the general permit.

Please familiarize yourself with the general permit (see link below). It contains requirements and prohibitions with which you must comply.

OHIO GENERAL PERMIT FOR FILLING CATEGORY 1 AND 2 ISOLATED WETLANDS AND EPHEMERAL STREAMS

Additionally, please be aware that as per ORC §6111.022(E) and Part VII of the general permit, the proposed filling of the isolated wetland(s) and/or ephemeral stream(s) must be completed by June 14, 2023. If you do not complete the filling within this time, you must submit a new pre-activity notice to Ohio EPA.

You may find a copy of Ohio EPA's rules and laws online at http://www.epa.ohio.gov/dsw/dswrules.aspx. Information regarding Ohio's Section 401 and Isolated Wetlands Permitting programs is also available online at http://www.epa.ohio.gov/dsw/401/permitting.aspx.

If you have any questions, please contact me at 740-380-5225 or via email at Carol.Siegley@epa.ohio.gov.

Sincerely,

Carol Siegley
Application Coordinator
401/Wetlands/Mitigation Section

ec: Andrea Kilbourne, Andrea.Kilbourne@epa.ohio.gov, Ohio EPA, DSW, Mitigation Coordinator
Jeff Boyles, Jeffrey.Boyles@epa.ohio.gov, 401/Wetlands/Mitigation Section Supervisor, Ohio EPA
Wes Barnett, wes.barnett@usace.army.mil, Department of the Army, Huntington District, Corps of Engineers
Devin Schenk, dschenk@TNC.org, The Nature Conservancy
Sarah Miloski, sarah.miloski@arcadis.com, Arcadis, U.S., Inc.
Rachel Taulbee, Rachel.Taulbee@epa.ohio.gov, SEDO, DSW, 401
DSW File

Freer, Julie

From: Ohio, FW3 <ohio@fws.gov>
Sent: Friday, September 4, 2020 3:34 PM
To: Freer, Julie
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate
Subject: AEP, Solida Switch Project, Lawrence Co. OH

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

TAILS# 03E15000-2020-TA-2248

Dear Ms. Freer,

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

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

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

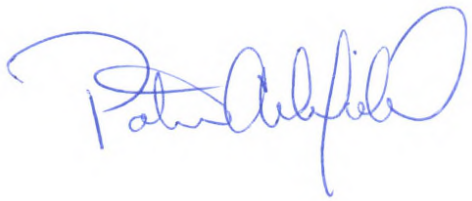
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing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

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

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

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

Sincerely,



Patrice Ashfield
Ohio Field Office Supervisor

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

From:	Ohio, FW3
To:	dsparks@envsi.com
Cc:	Boyer, Angela; nathan.reardon@dnr.state.oh.us; Parsons, Kate; sarah.stankavich@dnr.state.oh.us; Shannon T Hemmerly; jgarofalo@envsi.com; Natasha Brown
Subject:	[EXTERNAL] Solida Switch Project, Lawrence County, USFWS 21-018 Bat Survey Response
Date:	Tuesday, June 15, 2021 11:38:47 AM
Attachments:	pastedImagebase640.png pastedImagebase641.png

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

TAILS# 03E15000-2021-TA-1541

Dear Mr. Sparks,

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

We have received your summer bat survey report for the subject project. The survey was conducted following current Service guidelines. No Indiana bats (*Myotis sodalis*) were captured/detected, demonstrating probable absence of Indiana bats in the project area. Currently, the Service has no known hibernacula or maternity roost records for northern long-eared bat (*Myotis septentrionalis*) in the vicinity of the project. Therefore, the 4(d) rule for the northern long-eared bat could be applied (see: http://www.fws.gov/midwest/endangered/mammals/nleb/index.html). Tree clearing on the project site at any time of the year is unlikely to result in adverse impacts to Indiana bats and will not result in any unauthorized incidental take of northern long-eared bats. Negative Indiana bat summer surveys are valid for five years. Therefore, no tree clearing should occur on the site after March 31, 2026 without further coordination with this office.

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We

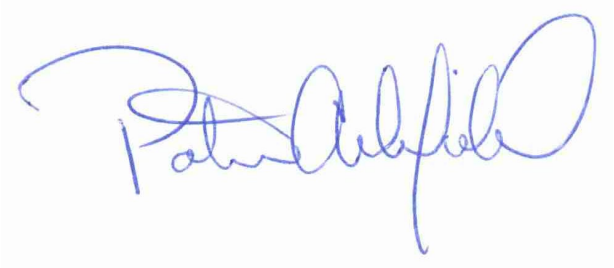
recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

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

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

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

Sincerely,



Patrice M. Ashfield
Field Office Supervisor

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

Miloski, Sarah

From: Freer, Julie
Sent: Thursday, October 29, 2020 3:49 PM
To: Driscoll, Mark; Bosiljevac, Maggie
Cc: Miloski, Sarah
Subject: Fw: 20-857; Arcadis -Solida Switch Project Comments
Attachments: 20-857; Arcadis -Solida Switch Project Comments.pdf; 2020 State bat survey guidance_6_3_20.pdf

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From: sarah.tebbe@dnr.ohio.gov <sarah.tebbe@dnr.ohio.gov>
Sent: Thursday, October 29, 2020 3:45 PM
To: Freer, Julie <Julie.Freer@arcadis.com>
Subject: 20-857; Arcadis -Solida Switch Project Comments

Hi Julie,

Attached are the ODNR comments on the subject project.

Thanks,

Sarah Tebbe
Ohio Department of Natural Resources
REALM Office of Environmental Services
2045 Morse Road
Columbus, Ohio 43229

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

October 29, 2020

Julie Freer
Arcadis U.S., Inc.
4665 Cornell Road, Suite 200
Cincinnati, Ohio 45241

Re: 20-857; Solida Switch Project

Project: The proposed project involves removing an existing hard tap to a customer, installing a new three-way switch north of Fayette Station, constructing a permanent access road, and rebuilding approximately 500 feet of existing transmission line.

Location: The proposed project is located in Fayette Township, Lawrence County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has the following record at or within a one-mile radius of the project area:

Gray beard-tongue (*Penstemon canescens*), State threatened

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

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

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

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

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

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

The project is within the range of the following listed mussel species.
Federally Endangered
fanshell (*Cyprogenia stegaria*)
pink mucket (*Lampsilis orbiculata*)
sheepnose (*Plethobasus cyphyus*)
snuffbox (*Epioblasma triquetra*)

State Endangered
ebonyshell (*Fusconaia ebenus*)
elephant-ear (*Elliptio crassidens*)
little spectaclecase (*Villosa lienosa*)
monkeyface (*Quadrula metanevra*)
Ohio pigtoe (*Pleurobema cordatum*)
washboard (*Megalonaias nervosa*)

State Threatened
black sandshell (*Ligumia recta*)
threehorn wartyback (*Obliquaria reflexa*)
Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

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

State Endangered

goldeye (*Hiodon alosoides*)
shoal chub (*Macrhybopsis hyostoma*)
shortnose gar (*Lepisosteus platostomus*)
shovelnose sturgeon (S*caphirhynchus platorynchus*)

State Threatened
channel darter (*Percina copelandi*)
paddlefish (Polyodon spathula)
river darter (*Percina shumardi*)

The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

Natural Areas: The Division of Natural Areas and Preserves has the following comment.

One state threatened plant species, the gray beard-tongue (*Penstemon canescens*), has been found within close proximity to the Solida switch project footprint. Due to the possible disruption of this species, a pre-construction survey of the proposed project site should be conducted to ensure that the plant and any other rare species within the proposed construction limits are not impacted. If there are any questions about Ohio flora or if survey assistance is required, please contact the Division of Natural Areas and Preserves' Chief Botanist, Rick Gardner. Mr. Gardner can be contacted directly at rick.gardner@dnr.state.oh.us or (614) 265-6419.

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

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

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

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

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

Agency Contacts:

ODNR-DOW Permit Coordinator: Wildlife.Permits@dnr.state.oh.us, (614) 265-6315
ODNR-DOW Bat Survey Coordinator: Sarah Stankavich, sarah.stankavich@dnr.state.oh.us, (614) 265-6764

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

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

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

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

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

During Field Season:

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

[1] https://www.fws.gov/midwest/Endangered/mammals/inba/surveys/inbaAcousticSoftware.html
[2] State listing as endangered effective July 1, 2020

After Field Season:

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

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

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

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

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

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

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

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

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

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

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

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

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

FREQUENTLY ASKED QUESTIONS

When does the Bat Survey protocol have to be used?

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

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

As described in the current USFWS Range-wide Indiana Bat Guidelines: Linear projects: a minimum of 2 detector nights per km (0.6 miles) of suitable summer habitat
Non-linear projects: a minimum of 8 detector nights per 123 acres (0.5 km^2) of suitable summer habitat. At least 2 detector locations per 123 acre "site" shall be sampled until at least 8 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

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

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

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

When can acoustic surveys occur in Ohio?

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

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

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

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

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

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

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

Freer, Julie

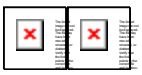
From: Richard.Gardner@dnr.ohio.gov
Sent: Monday, November 16, 2020 1:21 PM
To: Shannon T Hemmerly
Subject: [EXTERNAL] Re: AEP - Solida Switch Project - Lawrence County, OH

Shannon,

I do not see any appropriate habitat for the species. You do not need to do a survey. Thanks for contacting me.

Regards,

Rick Gardner, Chief Botanist
Ohio Department of Natural Resources
Division of Natural Areas and Preserves
2045 Morse Road, A-2
Columbus, OH 43229
614-265-6419 (Office)
614-745-6781 (Cell)



From: Shannon T Hemmerly <sthemmerly@aep.com>
Sent: Monday, November 16, 2020 9:53 AM
To: Gardner, Richard <Richard.Gardner@dnr.ohio.gov>
Subject: AEP - Solida Switch Project - Lawrence County, OH

Good morning Rick,

Thank you for taking time to talk with me on the phone this morning. Please see the attached maps for the Solida Switch project proposed in Lawrence County, Ohio. The project is approximately 2.3 miles north of Burlington, Ohio off Burlington-Macedonia Road (Rte. 120). I am writing to request information for gray beard-lounge with respect to this project.

Thank you for reviewing the information. Please let me know if pre-construction surveys for gray beard-tongue are required for this project.

Sincerely,

SHANNON T HEMMERLY | **ENVIRONMENTAL SPECIALIST SR**
STHEMMERLY@AEP.COM | D:380.205.5439 | C:740.350.6240
8600 SMITHS MILL ROAD, NEW ALBANY, OH 43054

From: Sarah.Stankavich@dnr.ohio.gov
To: Dale W. Sparks; angela_boyer@fws.gov
Cc: Shannon T Hemmerly; Jo Garofalo; Natasha Brown
Subject: [EXTERNAL] RE: 21-018 Final Bat Report AEP"s Solida Station
Date: Tuesday, June 15, 2021 12:02:03 PM
Attachments: image003.png
image004.png

Dale -

We have received the summer bat survey report for the Solida Switch project in Lawrence county, conducted according to current U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources, Division of Wildlife (DOW) guidance. No Indiana (*Myotis sodalis*), northern long-eared (*M. septentrionalis)*, little brown (*M. lucifugus*), or tricolored (*Perimyotis subflavus*) bats were detected, suggesting risk to these state-endangered species is low in the project area and tree cutting during summer maternity season is not likely to result in direct mortality of these species. Please contact DOW immediately should any bats be discovered. Should tree cutting need to occur after March 31, 2026, ODNR recommends further consultation to reevaluate risk to these bat species.

This guidance does not constitute a full ODNR environmental review. If required, please contact the ODNR, Office of Real Estate Management to submit a request for agency environmental review coordination.

Sarah

Sarah Stankavich
Wildlife Technician (bats/pollinators)
ODNR Division of Wildlife
2045 Morse Road
Columbus, OH 43229
Phone: 614-265-6764
Email: sarah.stankavich@dnr.ohio.gov

From: Dale W. Sparks <DSparks@envsi.com>
Sent: Monday, June 14, 2021 3:10 PM
To: Boyer, Angela <angela_boyer@fws.gov>; Stankavich, Sarah <Sarah.Stankavich@dnr.ohio.gov>
Cc: Shannon T Hemmerly <sthemmerly@aep.com>; Jo Garofalo <JGarofalo@envsi.com>; Natasha Brown <NBrown@envsi.com>
Subject: 21-018 Final Bat Report AEP's Solida Station

Angie and Sarah:

Please find attached a final report on OH bat project 21-018. We sampled one site for 2 nights of appropriate weather and captured no state or federally listed bats.

ESI **Dale W. Sparks, Ph.D.**
Principal Scientist
Environmental Solutions & Innovations, Inc.
4525 Este Avenue | Cincinnati, OH 45232 | USA
t: 513.451.1777 **f:** 513.451.3321 **c:** 513.503.2667
dsparks@envsi.com | www.envsi.com

In reply, refer to
2020-LAW-49172

August 28, 2020

Mr. Ryan J. Weller
Weller & Associates, Inc.
1395 West Fifth Avenue
Columbus, Ohio 43212

RE: Solida Switch Project, Fayette Township, Lawrence County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received electronically on July 30, 2020 regarding the proposed Solida Switch Project, Fayette Township, Lawrence County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the Solida Switch Project in Fayette Township, Lawrence County, Ohio* by Weller & Associates, Inc. (2020).

A literature review, visual inspection, shovel probe and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological resources are located within in the project area and no new archaeological sites were identified. Our offices agrees no further archaeological work is necessary.

A literature review and field survey were completed as part of the investigations. While the National Register-listed Macedonia Church (Ref. 78002096) was identified within the study area, the project will not be visible from the historic resource. Therefore, it is our opinion that the proposed project will not impact the integrity or significance of the Macedonia Church in a way that would alter its National Register status.

Based on the information provided, we agree that the project as proposed will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1085027

Appendix D
Ecological Report

ARCADIS Design & Consultancy for natural and built assets

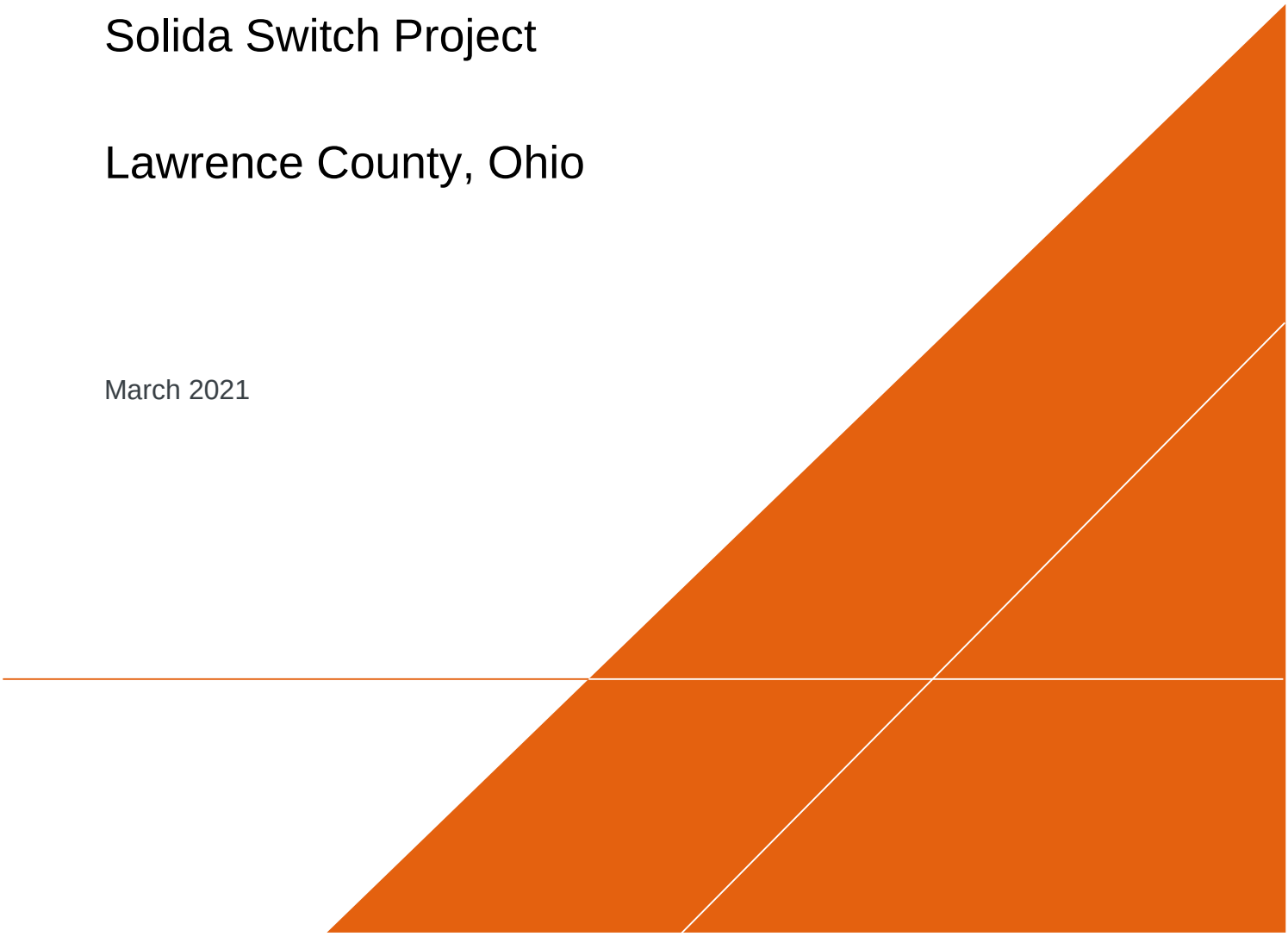
American Electric Power

WETLAND AND WATERBODY DELINEATION REPORT

Solida Switch Project

Lawrence County, Ohio

March 2021



WETLAND AND WATERBODY DELINEATION REPORT

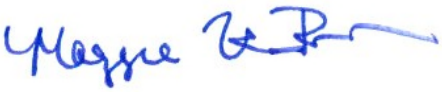
Solida Switch Project

Lawrence County, Ohio

Prepared for:

Ms. Shannon Hemmerly
American Electric Power
8600 Smiths Mill Road
New Albany, Ohio, 43054

Julie Freer
Environmental Scientist



Maggie Vuturo Bosiljevac
Senior Technical Review

Prepared by:

Arcadis U.S., Inc.
4665 Cornell Road
Suite 200
Cincinnati
Ohio 45241
Tel 513 860 8700
Fax 513 860 8701

Date:

March 2021

CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

This Wetland and Waterbody Delineation Report (Report) summarizes the results of wetland and waterbody delineation surveys conducted on August 18, 2020, by Arcadis U.S., Inc. (Arcadis) on behalf of American Electric Power (AEP) for the Solida Switch Project (Project). The Project is in Lawrence County, Ohio, and involves removing an existing hard tap to a customer, installing a new 3-way switch north of the existing Fayette Station, and rebuilding approximately 500 feet of existing transmission line. The Project environmental survey area (ESA) is approximately 2.9 acres (**Figure 1**).

The purpose of the delineation was to assess the presence or absence or wetlands or other waters that may be affected by the proposed Project. Two wetlands were identified within the ESA. No streams were identified within the ESA.

2 BACKGROUND INFORMATION

Prior to conducting the wetland and waterbody delineation survey, Arcadis reviewed the following resources to identify the potential location and extent of wetlands and waterbodies within the Project area:

- United States Geological Survey (USGS) topographic map (*Catlettsburg* quadrangle; USGS 1983),
- USGS National Hydrography Dataset (NHD-mapped streams) (USGS 2020),
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) dataset (USFWS 2020),
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (FEMA 2020),
- United States Department of Agriculture Natural Resource Conservation Service (NRCS) Web Soil Survey of Lawrence County, Ohio (NRCS 2020); and
- Aerial imagery (ESRI 2019)

2.1 USGS Topographic Map

The USGS topographic map (**Figure 1**), which identifies intermittent and perennial streams, indicates that no blueline streams are mapped within the ESA.

2.2 USGS NHD

The NHD represents the drainage network with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and stream gauges (USGS 2020). No NHD waterbodies are mapped within the ESA (**Figure 2**).

The ESA lies within the Solida Creek-Ohio River (United States Geologic Survey [USGS] Hydrologic Unit Code [HUC] 050901030101) subwatershed of the larger Little Scioto-Tygarts Watershed (USGS HUC 05090103) and the Buffalo Creek-Ohio River (USGS HUC 050901011007) subwatershed of the larger Raccoon-Symmes Watershed (USGS HUC 05090101; USGS 2020). The nearest traditionally navigable

waterway (TNW) with a hydrologic surface connection to the waterbodies within the ESA is the Ohio River (USACE, n.d.).

2.3 USFWS NWI Dataset

NWI maps are used as a guide, along with other data, to indicate the potential presence of wetlands. The information is often out of date and not necessarily field-verified. The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. No NWI features are mapped within the ESA (**Figure 2**; USFWS 2020).

2.4 FEMA National Flood Hazard Layer

The identification and location of the mapped 100-year flood hazard zones within the ESA was determined by reviewing the FEMA National Flood Hazard Layer (FEMA 2020). The ESA is within an area of minimal flood hazard (Zone X; **Figure 2**). The extent of the regional mapped FEMA 100-year flood hazard zone is shown in **Figure 2**.

2.5 Digital Soil Survey of Lawrence County, Ohio

According to the NRCS Web Soil Survey for Lawrence County (NRCS 2020), the following two soil units are mapped within the ESA (**Figure 3**). Both of the soil map units were listed as not hydric. Generally, soil units identified as hydric contain soils that indicate through their color and structure that they have experienced dominantly reducing (i.e., oxygen poor) conditions, which are a result of inundation and/or saturation by water. Soil units identified as non-hydric have no hydric soil components identified in the mapped soil unit. The soil units identified within the ESA are displayed on **Figure 3** and listed in **Table 1**, below.

Table 1. Soil Units Identified within the ESA

Soil Map Unit Symbol	Soil Map Unit Name	Hydric Rating
UgD	Upshur-Gilpin complex, 15 to 25 percent slopes	Not hydric
UgF	Upshur-Gilpin complex, 40 to 70 percent slopes	Not hydric

2.6 Aerial Imagery

A review of aerial imagery for the ESA shows that the ESA is immediately surrounded by rural residential areas and forested areas (ESRI 2019). Aerial photography for the ESA and its vicinity is presented as **Figure 4**.

2.6 Antecedent Precipitation

Antecedent precipitation data was analyzed. Data was obtained from a nearby weather station (South Point, OH (USC00337857)) and compared to data from a nearby Climate Analysis for Wetlands (WETS) station (South Point, OH (USC00337857)).

The most recent rainfall event prior to the August 18, 2020, site visit was 0.2 inches, which occurred on August 15, 2020. Precipitation for the 14 days prior to the August 18, 2020, site visit was 1.05 inches. There was no precipitation during the August 18, 2020, field survey.

The precipitation data for the 90-day period prior to the August 18, 2020, field visit (**Appendix D**) was entered into a WETS analysis worksheet to weight the information from each preceding month to analyze hydrologic conditions. Based on this analysis, the antecedent hydrologic conditions for the August 18, 2020, site visit was drier than the normal range, suggesting that climatic/hydrologic conditions were not typical for this time of year. This data suggests that the wetland hydrology observed during the site visit would be less apparent than normal.

3 METHODOLOGY

Pedestrian surveys were conducted within the ESA to identify wetlands and waterbodies on August 18, 2020. Wetland boundaries were field-delineated according to Section 404 of the Clean Water Act routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers Wetlands Delineation Manual* (USACE Environmental Laboratory 1987) and subsequent guidance documents and the U.S. Army Corps of Engineers (USACE) 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). The ESA is within the Major Land Resource Area: Central Allegheny Plateau and the Land Resource Region: East and Central Farming and Forest Region (USACE 2012).

Wetland delineation data were recorded on the USACE Regional Supplement wetland determination data forms. One data point was recorded for each wetland. Corresponding upland data points were recorded to document upland boundaries and conditions surrounding the wetlands within the ESA.

The United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (USACE) published the Navigable Waters Protection Rule (NWPR) in the Federal Register to finalize a revised definition of “waters of the United States” under the Clean Water Act (EPA and USACE 2020). The EPA and USACE have streamlined the definition so that it includes four categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. This final rule became effective on June 22, 2020. Under this new rule, the following four types of waters are considered jurisdictional by the USACE:

- The territorial seas and TNWs,
- Perennial and intermittent tributaries to those waters,
- Certain lakes, ponds, and impoundments, and
- Wetlands adjacent to jurisdictional waters.

It is noted that the USACE continues to maintain authority to determine what wetlands and waterbodies are jurisdictional under the NWPR. Additionally, it is noted that certain waters that the USACE does not consider jurisdictional are regulated on the state level by the Ohio Environmental Protection Agency (OEPA).

The OEPA requires classification of streams and wetlands, if present, according to OEPA methods in order to establish the “quality” of these waterbodies in accordance with the Ohio Wetland Water Quality Standards (Ohio Administrative Code [OAC] 2012). The standards dictate the level of permitting and mitigation

required for impacts to the wetlands. Each identified wetland was evaluated in accordance with the Ohio Rapid Assessment Method (ORAM), developed by the Ohio Environmental Protection Agency (OEPA) (OEPA 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA 2001).

The OEPA classifies larger streams (with watersheds greater than one square mile) in accordance with the OEPA Qualitative Habitat Evaluation Index (OEPA, 2006). Streams with drainage areas smaller than one square mile are evaluated using the OEPA Primary Headwater Habitat Evaluation (HHEI) (OEPA, 2012). The quality of the stream is based on the score, as well as other features such as past modifications and substrate types.

The outer boundaries of each wetland and waterbody, determined by the ordinary high water mark, were delineated and recorded using a handheld Trimble GeoXH Global positioning system receiver. As features were collected, they were given a unique feature identification (ID). If a stream was identified, the centerline of each stream was delineated and recorded.

4 SURVEY RESULTS

4.1 Vegetative Communities and Land Cover Types

Vegetative communities and land cover types observed within the ESA included upland scrub/shrub, upland woods, maintained grass areas, and PEM wetlands. A description of each vegetative community or land cover type and an estimated acreage within the ESA is included in **Table 2** below. Vegetative communities are presented in **Figure 5**. Photographs of the ESA are provided in **Appendix A**.

Table 2. Vegetative Communities and Land Cover Types within the ESA

Vegetative Community/Land Cover Type	Description	Approximate Acreage within ESA
Upland Scrub/Shrub	Mostly within the existing right-of-way (ROW) and contained redbud (*Cercis canadensis*), sycamore (*Platanus occidentalis*), ash-leaf maple (*Acer negundo*), Queen Anne's-lace (*Daucus carota*), rambler rose (*Rosa multiflora*), *Rubus* sp., wingstem (*Verbesina alternifolia*), Japanese stiltgrass (*Microstegium vimineum*), American pokeweed (*Phytolacca americana*), pinkweed (*Persicaria pensylvanica*), sweet-scented joe-pye-weed (*Eutrochium purpureum*), and small carp grass (*Arthraxon hispidus*).	0.5
Upland Woods	Adjacent to the existing ROW and contained mainly sugar maple (*Acer saccharum*), black cherry (*Prunus serotina*), black walnut (*Juglans nigra*), honey locust (*Gleditsia triacanthos*), black locust (*Robinia pseudoacacia*), sassafras (*Sassafra albidum*), staghorn sumac (*Rhus typhina*), common hackberry (*Celtis occidentalis*), callery pear (*Pyrus calleryana*), Christmas fern (*Polystichum acrostichoides*), and rambler rose.	1.7

Vegetative Community/Land Cover Type	Description	Approximate Acreage within ESA
Maintained lawn	Located around the existing substation and contained fescues (*Festuca* spp.), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), English plantain (*Plantago lanceolata*), and Queen Anne's-lace.	0.4
PEM wetland	Located along the proposed access route. Dominated by cottongrass bulrush (*Scirpus cyperinus*) and broad-leaf cat-tail (*Typha latifolia*).	<0.1
Paved/graveled surfaces	Located around the existing substation and where the ESA intersects the public road ROW.	0.3
	Total	**2.9**

4.2 Wetlands

As shown on **Figure 4,** two PEM wetlands were identified in the ESA, totaling <0.01 acres. It is noted that this acreage reflects the amount of wetland delineated within the ESA, and that both wetlands identified within the ESA extended outside the ESA. Additionally, it is noted that an approximate 14-foot wide upland area separates the two wetlands.

The USACE Wetland Determination Data Forms and the OEPA ORAM scoring forms are provided in **Appendix B** and **Appendix C**, respectively. Wetland characteristics are summarized in **Table 3**, below.

Table 3. Environmental Survey Area Wetland Summary

Feature ID	Cowardin Classification	Approximate Area Delineated within the ESA (acres)[1]	ORAM Score[2]	OEPA Wetland Category[2]	12-Digit HUC	Hydrologic Connection[3]
W01	PEM	<0.01	18.5	Category 1	050901011007	Isolated
W02	PEM	<0.01	18.5	Category 1	050901030101	Isolated
	Total:	**<0.01**				

NOTES:
ID = Identification
HUC = Hydrologic Unit Code
ORAM = Ohio Rapid Assessment Method
OEPA = Ohio Environmental Protection Agency
USACE = United States Army Corps of Engineers
PEM = Palustrine Emergent

1 The wetland may extend outside of the Project area; this acreage corresponds to the size of the feature located within the ESA.

2 OEPA Wetland Category is determined based on ORAM score, in accordance with OEPA 2001.

3 The determination of hydrologic connection is based on the boundary delineations and have not been formally approved by the USACE and/or OEPA

4.3 Rare, Threatened, or Endangered Species

On August 28, 2020, Arcadis requested information on rare, threatened, and endangered (RTE) species and sensitive habitats within Project area from the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS).

On September 4, 2020, USFWS responded that Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) have the potential to occur within the Project area, and no known records of sensitive habitats were identified within the Project area.

To date, no response from the ODNR has been received. A list of RTE species identified in Lawrence County (ODNR, 2016; ODNR, 2020) was used to determine state-listed species with the potential to occur within the Project area. The ODNR Rare, Threatened, and Endangered Species Assessment Table is provided in **Appendix E.**

5 CONCLUSIONS

On August 18, 2020, Arcadis conducted wetland and waterbody delineations within the ESA of the proposed Solida Switch Project in Lawrence County, Ohio. Arcadis identified two wetlands, totaling <0.01 acre, within the ESA. Both wetlands extend outside the ESA, and are separated by a 14-foot wide upland area.

Both wetlands have been field-determined by Arcadis to be isolated from jurisdictional surface waters within or near the ESA under the NWPR. The jurisdictional status of wetlands W01 and W02 have not been field-verified by state or federal agencies. It is Arcadis' opinion that neither wetland W01 nor W02 are likely to be considered jurisdictional by the USACE under the new NWPR but will be considered jurisdictional at the state level by the OEPA.

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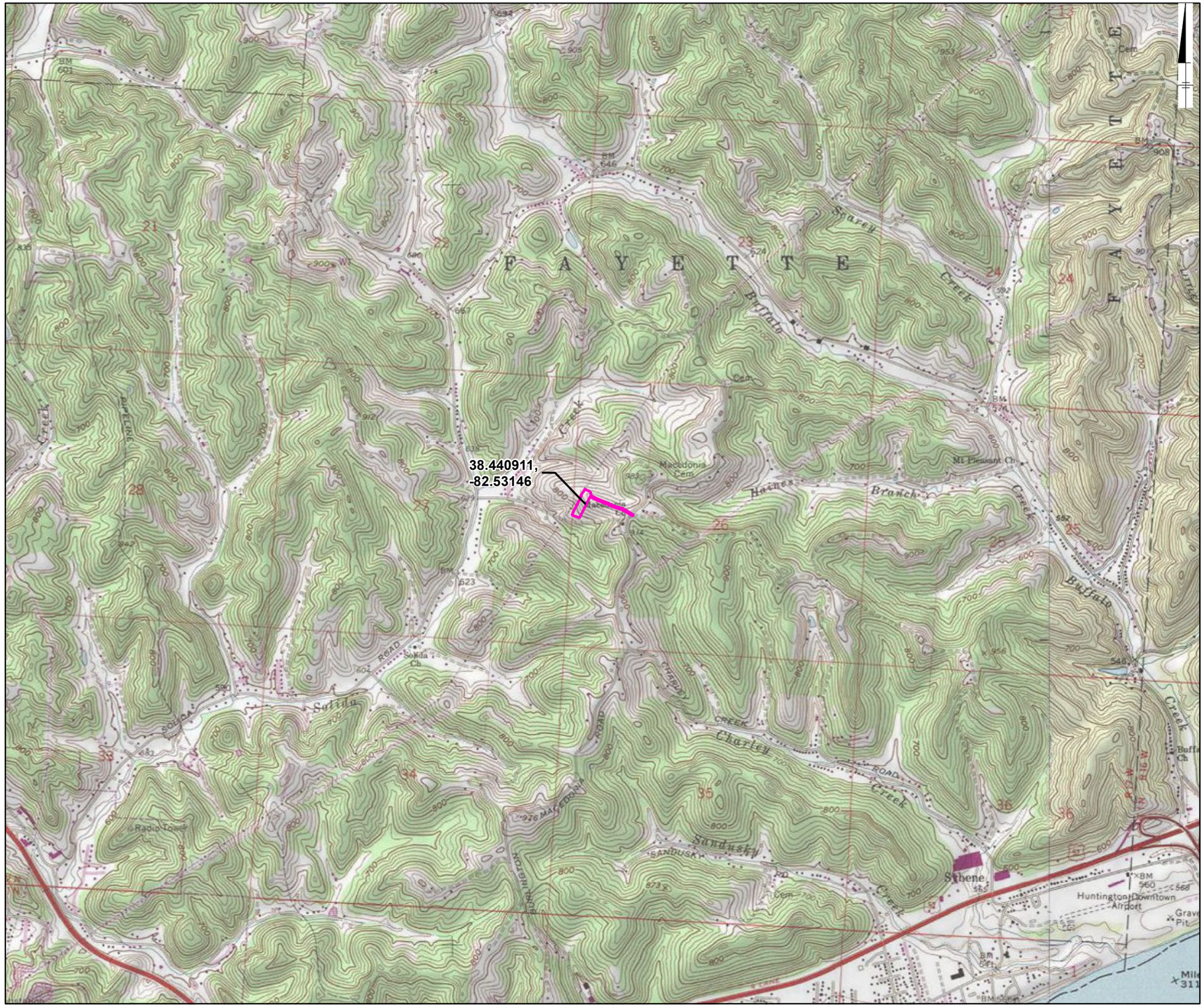
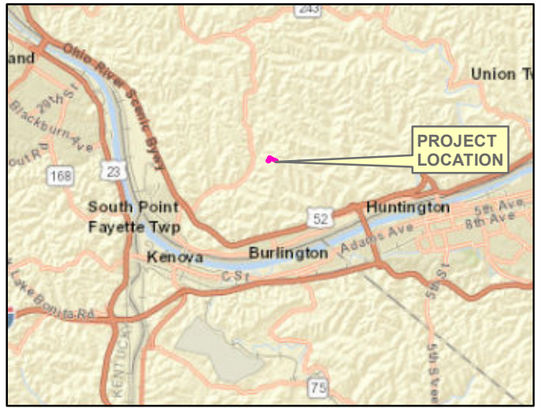
FIGURES





Legend

Environmental Survey Area (ESA)

0 1,000 2,000 4,000 Feet

GRAPHIC SCALE

NOTE:
1. USGS 7.5' TOPOGRAPHIC QUADRANGLE ESRI IMAGERY SERVICE LAWRENCE, OHIO

AMERICAN ELECTRIC POWER (AEP)
SOLIDA SWITCH
LAWRENCE COUNTY, OHIO

TOPOGRAPHIC MAP

AEP OHIO
ARCADIS

FIGURE
1

City: SYR Div/Group: IM/DV Created By: J.Rapp Last Saved By: NCochran
T:_EPPVAEP\Solida_Switch\MXD\WDR\Figure1_Topo.mxd 8/25/2020 4:11:42 PM

Legend

- Stream (NHD)
- Environmental Survey Area (ESA)
- Wetlands (NWI)

0 125 250 500 Feet

GRAPHIC SCALE

NOTE:
1. 2019 IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
2. NATIONAL WETLANDS INVENTORY (NWI) WETLAND DATA OBTAINED FROM THE US FISH & WILDLIFE SERVICE AT: WWW.FWS.GOV.
3. NATIONAL HYDROGRAPHY DATASET (NHD) OBTAINED FROM THE US GEOLOGICAL SURVEY AT: HTTPS://NHD.USGS.GOV.
4. NO FLOOD HAZARDS WITHIN VICINITY OF SITE FEMA FLOOD ZONE DATA OBTAINED FROM: HTTPS://MSC.FEMA.GOV

AMERICAN ELECTRIC POWER (AEP)
SOLIDA SWITCH
LAWRENCE COUNTY, OHIO

NWI / NHD / FEMA MAP

ARCADIS

FIGURE **2**

City: SYR Div/Group: IM/DV Created By: J.Rapp Last Saved By: NCochran
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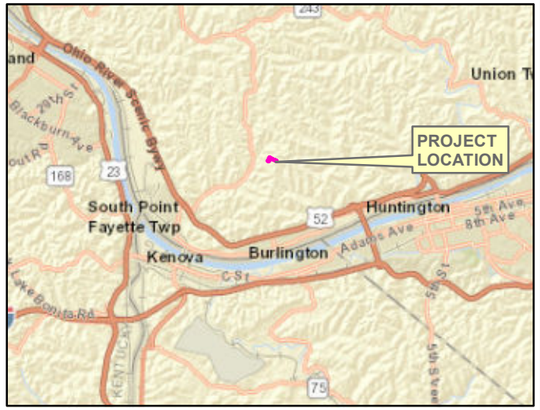

Legend

- Environmental Survey Area (ESA)
- Mapped Soils

Soil Symbol	Soil Description	Hydric Classification
UgD	Upshur-Gilpin complex, 15 to 25 percent slopes	Non-Hydric (0%)
UgF	Upshur-Gilpin complex, 40 to 70 percent slopes	Non-Hydric (0%)

0 50 100 200 Feet

GRAPHIC SCALE

AMERICAN ELECTRIC POWER (AEP)
SOLIDA SWITCH
LAWRENCE COUNTY, OHIO

DELINEATED WETLANDS AND WATERBODIES

ARCADIS

FIGURE 3

City: SYR Div/Group: IM/DV Created By: J.Rapp Last Saved By: NCochran
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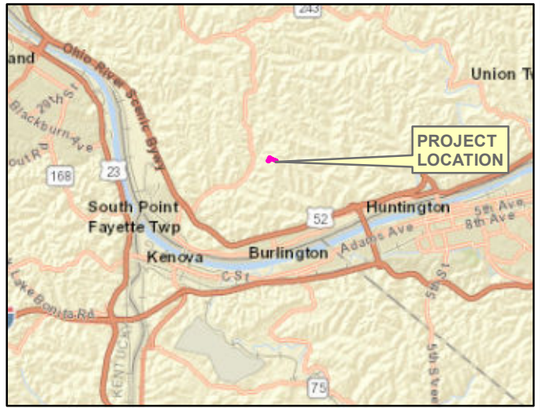

Legend

- Upland Data Point
- Wetland Data Point
- Culvert
- Open Ended Feature Edge
- Delineated Wetland
- Environmental Survey Area (ESA)

0 50 100 200 Feet

GRAPHIC SCALE

AMERICAN ELECTRIC POWER (AEP)
SOLIDA SWITCH
LAWRENCE COUNTY, OHIO

DELINEATED WETLANDS AND WATERBODIES

ARCADIS

FIGURE **4**

City: SYR Div/Group: IM/DV Created By: J.Rapp Last Saved By: NCochran
T:_EPP\AEP\Solida_Switch\MXD\WDR\Figure4_Delineation_Feature.mxd 9/17/2020 4:42:14 PM

Legend

- Developed Land: Paved or Graveled
- Maintained Lawn
- PEM Wetland
- Upland Scrub/Shrub
- Upland Forested
- Environmental Survey Area (ESA)

0 50 100 200 Feet

GRAPHIC SCALE

AMERICAN ELECTRIC POWER (AEP)
SOLIDA SWITCH
LAWRENCE COUNTY, OHIO

VEGETATIVE COMMUNITIES AND LAND COVER TYPES

ARCADIS

FIGURE 5

City: SYR Div/Group: IM/DV Created By: J.Rapp Last Saved By: NCochran
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APPENDIX A

Photographic Log

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 1

Date:
August 18, 2020

Description:
View of wetland W01

Direction:
North

Photo: 2

Date:
August 18, 2020

Description:
View of wetland W01

Direction:
East

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 3

Date:
August 18, 2020

Description:
View of wetland W01

Direction:
South

Photo: 4

Date:
August 18, 2020

Description:
View of wetland W01

Direction:
West

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 5

Date:
August 18, 2020

Description:
View of soil profile, DP02 for wetland W01

Photo: 6

Date:
August 18, 2020

Description:
View of wetland W02

Direction:
North

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 7

Date:
August 18, 2020

Description:
View of wetland W02

Direction:
East

Photo: 8

Date:
August 18, 2020

Description:
View of wetland W02

Direction:
South

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 9

Date:
August 18, 2020

Description:
View of wetland W02

Direction:
West

Photo: 10

Date:
August 18, 2020

Description:
View of soil profile, DP03 for wetland W02

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 11

Date:
August 18, 2020

Description:
View of soil profile, upland point DP04 for wetlands W01 and W02

Photo: 12

Date:
August 18, 2020

Description:
View of upland point DP04 for wetlands W01 and W02

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 13

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
Southwest

Photo: 14

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
Northeast

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 15

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
Southwest

Photo: 16

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
Northeast

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 17

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
West

Photo: 18

Date:
August 18, 2020

Description:
View of erosional ditch near substation

Direction:
East

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 19

Date:
August 18, 2020

Description:
View of Fayette Substation

Direction:
Northwest

Photo: 20

Date:
August 18, 2020

Description:
View of Fayette Substation

Direction:
Southwest

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 21

Date:
August 18, 2020

Description:
View of ESA and existing line near substation

Direction:
Northeast

Photo: 22

Date:
August 18, 2020

Description:
View of ESA near switch

Direction:
South

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 23

Date:
August 18, 2020

Description:
View of ESA near northwest corner of switch

Direction:
South

Photo: 24

Date:
August 18, 2020

Description:
View of proposed access road

Direction:
Southeast

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 25

Date:
August 18, 2020

Description:
View of proposed access road at entrance

Direction:
Northwest

Photo: 26

Date:
August 18, 2020

Description:
View of ESA in proposed new ROW

Direction:
Northeast

Project Photographs

American Electric Power
Solida Switch Project
Lawrence County, Ohio

Photo: 27

Date:
August 18, 2020

Description:
View of ESA in proposed new ROW

Direction:
Northeast

APPENDIX B

USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Solida Switch Project City/County: Lawrence County Sampling Date: 8/18/2020
Applicant/Owner: American Electric Power State: Ohio Sampling Point DP01
Investigator(s): S. Miloski, J. Freer Section, Township, Range: S26 T2N R17W
Landform (hillslope, terrace, etc.): side slope Local relief (concave, convex, none): None Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat.: 38.440904 Long.: -82.532477 Datum: WGS 84
Soil Map Unit Name: UgF: Upshur-Gilpin complex, 40 to 70 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? No Hydric soil present? No Wetland hydrology present? No	**Is the sampled area within a wetland?** No

Remarks:

Upland data point taken where hydrophytic vegetation was noticed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____
Water table present? Yes ____ No X Depth (inches): ____
Saturation present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: DP01

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Liriodendron tulipifera*	50	Y	FACU
2	*Gleditsia triacanthos*	30	Y	FAC
3	*Sambucus nigra*	20	Y	FACU
4				
5				
6				
7				
8				
9				
10				
		100	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Convolvulus arvensis*	30	Y	UPL
2	*Juncus effusus*	30	Y	FACW
3	*Rumex crispus*	30	Y	FAC
4	*Persicaria pensylvanica*	20	N	FACW
5	*Microstegium vimineum*	20	N	FAC
6	*Onoclea sensibilis*	5	N	FACW
7				
8				
9				
10				
11				
12				
13				
14				
15				
		135	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	20	50
Herb Stratum	27	68
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	55	x 2 =	110	
FAC species	80	x 3 =	240	
FACU species	70	x 4 =	280	
UPL species	30	x 5 =	150	
Column totals	235	(A)	780	(B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** DP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8	10YR 4/3	100					silt loam	
8-12	10YR 5/3	100					silt loam with rock	
12+							Rock	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
___ Thin Dark Surface (S9) (**MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 12

Hydric soil present? N

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Solida Switch Project City/County: Lawrence County Sampling Date: 8/18/2020
Applicant/Owner: American Electric Power State: Ohio Sampling Point DP02
Investigator(s): S. Miloski, J. Freer Section, Township, Range: S26 T2N R17W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1
Subregion (LRR or MLRA): LRR N Lat.: 38.4403 Long.: -82.529005 Datum: WGS 84
Soil Map Unit Name UgD: Upshur-Gilpin complex, 15 to 25 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	**Is the sampled area within a wetland?** Yes

Remarks:

PEM Wetland W01

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on
- X Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____
Water table present? Yes ____ No X Depth (inches): ____
Saturation present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: DP02

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Scirpus cyperinus*	50	Y	FACW
2	*Typha latifolia*	40	Y	OBL
3	*Juncus tenuis*	10	N	FAC
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		100	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	20	50
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	40	x 1 =	40	
FACW species	50	x 2 =	100	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	100	(A)	170	(B)

Prevalence Index = B/A = 1.70

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** DP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 6/2	75	7.5YR 5/6	25	C	PL/M	Silty clay	
12+							Rock	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
___ Thin Dark Surface (S9) (**MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 12

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Solida Switch Project City/County: Lawrence County Sampling Date: 8/18/2020
Applicant/Owner: American Electric Power State: Ohio Sampling Point DP03
Investigator(s): S. Miloski, J. Freer Section, Township, Range: S26 T2N R17W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat.: 38.440375 Long.: -82.528986 Datum: WGS 84
Soil Map Unit Name: UgD: Upshur-Gilpin complex, 15 to 25 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	**Is the sampled area within a wetland?** Yes

Remarks:

PEM Wetland W02

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on
- X Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____
Water table present? Yes ____ No X Depth (inches): ____
Saturation present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: DP03

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Typha latifolia*	50	Y	OBL
2	*Scirpus cyperinus*	35	Y	FACW
3	*Leersia oryzoides*	15	N	OBL
4	*Juncus effusus*	10	N	FACW
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		110	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	22	55
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	65	x 1 =	65	
FACW species	45	x 2 =	90	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	110	(A)	155	(B)

Prevalence Index = B/A = 1.41

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** DP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	10YR 6/2	70	10YR 5/6	25	C	PL/M	Silty clay	
			7.5YR 5/6	5	C	PL/M		
12+							Rock	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
___ Thin Dark Surface (S9) (**MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: Rock
Depth (inches): 12

Hydric soil present? Y

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Solida Switch Project City/County: Lawrence County Sampling Date: 8/18/2020
Applicant/Owner: American Electric Power State: Ohio Sampling Point DP04
Investigator(s): J. Freer, S. Miloski Section, Township, Range: S26 T2N R17W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0-1
Subregion (LRR or MLRA): LRR N Lat.: 38.440317 Long.: -82.529101 Datum: WGS 84
Soil Map Unit Name: UgD: Upshur-Gilpin complex, 15 to 25 percent slopes NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year Yes X No ____ (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? No Hydric soil present? No Wetland hydrology present? No	**Is the sampled area within a wetland?** No

Remarks:

Upland point for wetlands W01 and W02

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____
Water table present? Yes ____ No X Depth (inches): ____
Saturation present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: DP04

Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Sapling/Shrub Stratum	Plot Size (15 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		0	= Total Cover	

Herb Stratum	Plot Size (5 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1	*Festuca sp.*	50	Y	FAC
2	*Solidago sp.*	25	Y	FACU
3	*Daucus carota*	15	N	UPL
4	*Erigeron canadensis*	10	N	UPL
5	*Ambrosia artemisiifolia*	5	N	FACU
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		105	= Total Cover	

Woody Vine Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		0	= Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	21	53
Woody Vine Stratum	0	0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	50	x 3 =	150	
FACU species	30	x 4 =	120	
UPL species	25	x 5 =	125	
Column totals	105 (A)		395	(B)

Prevalence Index = B/A = 3.76

Hydrophytic Vegetation Indicators:

___ Rapid test for hydrophytic vegetation

___ Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** DP04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7	10YR 5/2	50					silt loam	
	10YR 5/8	50					silt loam	
7+							Gravel fill	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains
**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

___ Histisol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10) **(LRR N)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
___ Thin Dark Surface (S9) (**MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils:

___ 2 cm Muck (A10) (**MLRA 147)**
___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: gravel
Depth (inches): 7

Hydric soil present? N

Remarks:

Obvious fill material- previous site of house

APPENDIX C

ORAM v. 5.0 Scoring Forms

Version 5.0	**Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization**	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: Julie Freer	
Date: 8/18/2020	
Affiliation: Arcadis US Inc	
Address: 4665 Cornell Road Suite 200 Cincinnati OH 45241	
Phone Number: 513-985-8024	
e-mail address: julie.freer@arcadis.com	
Name of Wetland: W01	
Vegetation Communit(ies): PEM	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figures 1 and 4	
Lat/Long or UTM Coordinate	38.4403 N, 82.529005 W
USGS Quad Name	Catlettsburg
County	Lawrence
Township	Fayette
Section and Subsection	S26 T2N R17W
Hydrologic Unit Code	050901011007
Site Visit	8/18/2020
National Wetland Inventory Map	None
Ohio Wetland Inventory Map	None
Soil Survey	Upshur-Gilpin complex, 15 to 25 percent slo
Delineation report/map	see attached

Name of Wetland: W01	
Wetland Size (acres, hectares):	<0.01 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
See Figure 4

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 18.5	**Category:**	Category 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site: W01, Solida Switch	Rater(s): S. Miloski	Date: 8/18/2020

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

4 (max 14 pts.) | 4 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 11 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

5.5 (max 20 pts.) | 16.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: W01, Solida Switch	Rater(s): S. Miloski	Date: 8/18/2020

16.5
subtotal first page

0 (max 10 pts.) | 16.5 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 (max 20 pts.) | 18.5 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [✓] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [✓] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

18.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	5.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE	18.5	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	**Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization**	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name: Julie Freer
Date: 8/18/2020
Affiliation: Arcadis US Inc
Address: 4665 Cornell Road Suite 200 Cincinnati OH 45241
Phone Number: 513-985-8024
e-mail address: julie.freer@arcadis.com
Name of Wetland: W02
Vegetation Communit(ies): PEM
HGM Class(es): Depressional
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Figures 1 and 4

Lat/Long or UTM Coordinate	38.440375 N, 82.528986 W
USGS Quad Name	Catlettsburg
County	Lawrence
Township	Fayette
Section and Subsection	S26 T2N R17W
Hydrologic Unit Code	050901030101
Site Visit	8/18/2020
National Wetland Inventory Map	None
Ohio Wetland Inventory Map	None
Soil Survey	Upshur-Gilpin complex, 15 to 25 percent slo
Delineation report/map	see attached

Name of Wetland: W02	
Wetland Size (acres, hectares):	<0.01 acre

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Figure 4

Comments, Narrative Discussion, Justification of Category Changes:

Final score : 18.5	**Category:** Category 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

ORAM v. 5.0 Field Form Quantitative Rating

Site: W02, Solida Switch	Rater(s): S. Miloski	Date: 8/18/2020

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

4 (max 14 pts.) | 4 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7 (max 30 pts.) | 11 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [x] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

5.5 (max 20 pts.) | 16.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: W02, Solida Switch	Rater(s): S. Miloski	Date: 8/18/2020

16.5
subtotal first page

0 (max 10 pts.) | 16.5 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 (max 20 pts.) | 18.5 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [✓] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [✓] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

18.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	5.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE	18.5	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	(Category 1)	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX D

Antecedent Precipitation

Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
6/1/2020	0	7/1/2020	0	8/1/2020	0.00
6/2/2020	0	7/2/2020	0	8/2/2020	0.30
6/3/2020	0	7/3/2020	0	8/3/2020	0.00
6/4/2020	0	7/4/2020	0	8/4/2020	0.00
6/5/2020	0.9	7/5/2020	0	8/5/2020	0.00
6/6/2020	0.05	7/6/2020	0	8/6/2020	0.00
6/7/2020	0	7/7/2020	0	8/7/2020	0.00
6/8/2020	0	7/8/2020	0	8/8/2020	0.60
6/9/2020	0	7/9/2020	0	8/9/2020	0.00
6/10/2020	0.05	7/10/2020	0.53	8/10/2020	0.00
6/11/2020	0.12	7/11/2020	0.38	8/11/2020	0.00
6/12/2020	0	7/12/2020	0	8/12/2020	0.00
6/13/2020	0	7/13/2020	0	8/13/2020	0.00
6/14/2020	0.01	7/14/2020	0	8/14/2020	0.25
6/15/2020	0.1	7/15/2020	0	8/15/2020	0.20
6/16/2020	0	7/16/2020	0	8/16/2020	0.00
6/17/2020	0	7/17/2020	0.15	8/17/2020	0.00
6/18/2020	0	7/18/2020	0	8/18/2020	0.00
6/19/2020	0.35	7/19/2020	0		
6/20/2020	0	7/20/2020	0		
6/21/2020	0	7/21/2020	0.1		
6/22/2020	0.05	7/22/2020	0		
6/23/2020	0	7/23/2020	1.4		
6/24/2020	0.15	7/24/2020	1.8		
6/25/2020	0	7/25/2020	0		
6/26/2020	0	7/26/2020	0		
6/27/2020	0	7/27/2020	0		
6/28/2020	0.05	7/28/2020	0.05		
6/29/2020	0.6	7/29/2020	0		
6/30/2020	0.05	7/30/2020	0		
		7/31/2020	2		
Total =	**2.48**	**Total =**	**6.41**	**Total =**	**1.35**

Notes:
Station Name: South Point, OH (USC00337857)
Date Range = June 1, 2020 - August 18, 2020
M = Missing
T = Trace

WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
June	4.60	3.49	5.36	2.48	Dry	1	1	1
July	5.52	4.10	6.47	6.41	Normal	2	2	4
August	4.06	2.91	4.80	1.35	Dry	1	3	3
Sum =	**14.18**		**Sum =**	**10.24**			**Sum*** =**	**8**

Determination:		
	Dry	X
	Normal	
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

APPENDIX E

ODNR Threatened and Endangered Species Assessment Table

ODNR Threatened and Endangered Species Assessment

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Amphibians							
Green Salamander (*Aneides aneus)*	Endangered	N/A	TBD, pending ODNR consultation response	The green salamander occupies damp crevices in shaded rock outcrops and ledges. Occasionally they are found on dry rock outcrops. They can also be found beneath loose bark and in cracks of standing or fallen trees, and sometimes in or under logs on the ground.	Yes	No rock outcrops were observed in the Project area. Trees with loose bark, logs, fallen trees were observed within the Project area. If this species is known to occur in the Project vicinity, the Project is likely to affect Green Salamanders using trees with loose bark, logs, and fallen trees as microhabitat during their active period potentially away from rock outcrops, and further coordination with the ODNR may be required. Since no rock outcrops were observed within the Project area and Green Salamanders are believed to overwinter deep in rock outcrops, winter construction may minimize impacts to this species since they are less likely to be away from rock outcrops during this time.	TBD, pending ODNR consultation response
Eastern Hellbender *(Cryptobranchus alleganiensis alleganiensis)*	Endangered	N/A	TBD, pending ODNR consultation response	Eastern hellbenders live in shallow, fast-flowing, rocky streams. They are generally found in areas with large, intermittent, irregularly shaped rocks within swift water. They tend to stay away from slow-moving water and muddy banks with slab rock bottoms.	No	No streams were identified within the Project area, therefore the Project is likely to not affect the Eastern Hellbender.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Eastern Spadefoot (*Scaphiopus holbrookii*)	Endangered	N/A	TBD, pending ODNR consultation response	Eastern Spadefoots occur in open and forested uplands and bottomlands, including dry habitats with sandy to loamy soils. Individuals can sometimes be found at the surface under logs. The Eastern spadefoot's distribution in Ohio is limited to the valleys of larger streams, such as the Ohio River valley.	No	While Fayette Township contains known localities of Eastern Spadefoots, the Project is located at a higher elevation and not within the floodplain of the Ohio River, where this species is more likely to occur. Therefore, impacts to this species are not anticipated.	TBD, pending ODNR consultation response
Midland Mud Salamander (*Pseudotriton montanus diastictus*)	Threatened	N/A	TBD, pending ODNR consultation response	Found in springs, seeps, and creeks. Much of the life of this animal is probably spent underground in burrows, making sightings of this species rare.	No	No streams, springs, or seeps were identified within the Project area, therefore the Project is likely to not affect the Midland Mud Salamander.	TBD, pending ODNR consultation response
Fish							
Goldeye (*Hiodon alosoides*)	Endangered	N/A	TBD, pending ODNR consultation response	Prefers the quiet, turbid waters of large rivers and their connecting lakes, ponds, and marshes. Spawning occurs from May through early-July.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Shortnose Gar (*Lepisosteus platostomus*)	Endangered	N/A	TBD, pending ODNR consultation response	Prefers slow silty or clear-water rivers, wave-washed shoals of large lakes, quiet creek pools and river backwaters. It is usually found at the water surface, often near vegetation and submerged logs.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Shoal Chub (*Macrhybopsis hyostoma*)	Endangered	N/A	TBD, pending ODNR consultation response	Prefers fast, moderate depth water over broad sand flats. Spawning occurs from May through June, sporadic in August.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Channel Darter (*Percina coplandi*)	Threatened	N/A	TBD, pending ODNR consultation response	Inhabits rivers and large creeks in areas of moderate current over sand and gravel substrates.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
River Darter (*Percina shumardi*)	Threatened	N/A	TBD, pending ODNR consultation response	River Darters inhabit deep riffles and chutes of medium to large rivers, in areas of moderate current and coarse gravel to rock substrates. It is more frequently found in smaller streams during winter and spawning season in early spring. River Darters can also be found in lakes along wave-swept shores with sand, gravel, or rubble.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Paddlefish (*Polyodon spathula*)	Threatened	N/A	TBD, pending ODNR consultation response	Paddlefish live in water deeper than 4.3 feet in large, slow-flowing rivers and their tributaries.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Mammals							
Indiana Myotis (*Myotis sodalis*)	Endangered	Endangered	TBD, pending ODNR consultation response	Summer habitat is in cavities or in crevices of both live trees and snags. Caves and mines are used as winter hibernacula.	Yes	Live trees with loose bark and snags were observed within the Project area. No caves or mines were observed within the Project area. The Project is likely to affect Indiana Myotis using trees and snags as summer roosting habitat. Since no caves or mines were observed within the Project area, seasonal tree clearing would minimize impacts to this species.	The USFWS recommends avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.
Black Bear (*Ursus americanus*)	Endangered	N/A	TBD, pending ODNR consultation response	Black bears can be found in a wide variety of the more heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests. Although they will utilize open areas, bears prefer wooded cover with a dense understory.	No	Forested areas were observed within the Project area, but did not have a dense understory, therefore the Project is not likely to affect black bears.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened	Threatened	TBD, pending ODNR consultation response	Summer habitat is in cavities or in crevices of both live trees and snags. Caves and mines are used as winter hibernacula.	Yes	Live trees with loose bark and snags were observed within the Project area. No caves or mines were observed within the Project area. The Project is likely to affect Northern Long-eared Bat using trees and snags as summer roosting habitat. Since no caves or mines were observed within the Project area, seasonal tree clearing would minimize impacts to this species.	The USFWS recommends avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.
Invertebrates							
Wartyback (*Cyclonaias nodulata*)	Endangered	N/A	TBD, pending ODNR consultation response	This species can occur in medium to large rivers at depths of up to 15-18 feet on a sand and mud substrate.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Butterfly (*Ellipsaria lineolata*)	Endangered	N/A	TBD, pending ODNR consultation response	Found in large rivers. It prefers a stable substrate containing rock, gravel and sand in swift current.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Elephant-ear (*Elliptio crassidens*)	Endangered	N/A	TBD, pending ODNR consultation response	Primarily inhabits large rivers in mud, sand or fine gravel	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Pink Mucket (*Lampsilis abrupta*)	Endangered	Endangered	TBD, pending ODNR consultation response	Found in mud and sand and in shallow riffles and shoals swept free of silt in major rivers and tributaries. This mussel buries itself in sand or gravel, with only the edge of its shell and its feeding siphons exposed.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Pocketbook (*Lampsilis ovata*)	Endangered	N/A	TBD, pending ODNR consultation response	Found in large rivers in coarse sand or gravel.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Washboard (*Megalonaias nervosa*)	Endangered	N/A	TBD, pending ODNR consultation response	The washboard is typically a large river species, inhabiting the main channel areas of a stream. Suitable habitat consists of slow current areas with substrates composed of sand, gravel, or mud.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Sheepnose (*Plethobasus cyphyus*)	Endangered	Endangered	TBD, pending ODNR consultation response	Sheepnose mussels live in larger rivers and streams where they are usually found in shallow areas with moderate to swift currents that flow over coarse sand and gravel. However, they have also been found in areas of mud, cobble and boulders, and in large rivers they may be found in deep runs.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Ohio Pigtoe (*Pleurobema cordatum*)	Endangered	N/A	TBD, pending ODNR consultation response	Inhabits large rivers in strong currents on substrates of sand and gravel.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Ebonyshell (*Reginaia ebenus*)	Endangered	N/A	TBD, pending ODNR consultation response	The ebonyshell mussel primarily inhabits large rivers in sand or gravel.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Monkeyface (*Theliderma metanevra*)	Endangered	N/A	TBD, pending ODNR consultation response	Monkeyface is found in swift, clean water in larger rivers in gravel or mixed sand and gravel.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Little Spectaclecase (*Villosa lienosa*)	Endangered	N/A	TBD, pending ODNR consultation response	Typically inhabits small creeks to medium-sized rivers, usually along the banks in slower currents in mud or sand substrates.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Black Sandshell (*Ligumia recta*)	Threatened	N/A	TBD, pending ODNR consultation response	The black sandshell most commonly occupies rivers with strong currents and lakes with a firm substrate of gravel or sand.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Threehorn Wartyback (*Obliquaria reflexa*)	Threatened	N/A	TBD, pending ODNR consultation response	Most common in medium to large rivers, the three-horned wartyback occurs in slackwater conditions to swift currents, and substrates of gravel to muddy sand.	No	No streams or rivers were identified within the Project area, therefore the Project is not likely to affect this species.	TBD, pending ODNR consultation response
Plants							
Bushy Broom-sedge (*Andropogon glomeratus*)	Endangered	N/A	TBD, pending ODNR consultation response	Bushy bluestem grows in anthropogenic habitats, meadows and fields, shores of rivers or lakes, wetland margins (edges of wetlands), and woodlands	Yes	Anthropogenic habitats, meadows and fields, and woodlands were all observed within the Project area. If bushy bluestem is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
Sparse-lobed Grape Fern (*Botrychium biternatum*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in bottoms, ravines, mesic woods and thickets in various pH with fairly rich soil.	No	No bottoms, ravines, or mesic woods were observed within the Project area, therefore the Project is not likely to affect sparse-lobed grape fern.	TBD, pending ODNR consultation response
Midland Sedge (*Carex mesochorea*)	Threatened	N/A	TBD, pending ODNR consultation response	Prefers dry sandy soils of dry grasslands, open woods, mowed cemeteries, paths, roadsides, railroads, and fields.	No	No areas with dry sandy soils are found within the Project area, therefore the Project is not likely to affect midland sedge.	TBD, pending ODNR consultation response
Reznicek's Sedge (*Carex reznicekii*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows in mesic to dry-mesic forests with rocky, shallow soils.	No	No areas with rocky, shallow soils are found within the Project area, therefore the Project is not likely to affect Reznicek's sedge.	TBD, pending ODNR consultation response
Lined Sedge (*Carex striatula*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in dry to moist ravine slopes, deciduous or mixed deciduous-evergreen forests.	No	No ravine slopes are present within the Project area, therefore the Project is not likely to affect lined sedge.	TBD, pending ODNR consultation response
Carolina Thistle (*Cirsium carolinianum*)	Threatened	N/A	TBD, pending ODNR consultation response	Carolina Thistle occurs in cedar glades, dry to wet prairies, and open pine-oak woodlands and savannas over mafic, ultramafic, or calcareous rocks, and in rights-of-way through these habitats.	No	No cedar glades, prairies, or pine-oak woodlands are present within the Project area, therefore the Project is not likely to affect Carolina thistle.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Cuspidate Dodder (*Cuscuta cuspidata*)	Endangered	N/A	TBD, pending ODNR consultation response	Species is distributed in low open woods.	No	No low, open wood habitats are present within the Project, therefore the Project is not likely to affect cuspidate dodder.	TBD, pending ODNR consultation response
Reflexed Umbrella-sedge (*Cyperus refractus*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows on sandy shorelines and scoured river islands, and elsewhere in dry woods.	No	No sandy shorelines or river islands are within the Project area, therefore the Project is not likely to affect reflexed umbrella-sedge.	TBD, pending ODNR consultation response
Pink Dot Lichen (*Dibaeis absoluta*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows on sandy soil over boulders and on rock outcrops in very shaded habitats.	No	No sandy soils or rock outcrops are within the Project area, therefore the Project is not likely to affect pink dot lichen.	TBD, pending ODNR consultation response
Little Whitlow-grass (*Draba brachycarpa*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in open woods, cedar glades, pastures and lawns, roadsides, disturbed sites.	Yes	No cedar glades or open woods are present within the Project area. Lawn, roadside, and disturbed site habitats are within the Project area. If little whitlow-grass is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
Godfreys Thoroughwort (*Eupatorium godfreyanum*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in dry woodlands and borders, powerline clearings near upland woods, mainly on circumneutral soil.	Yes	Dry woodland and border habitats, as well as powerline clearings near upland woods are present within the Project area. If Godfreys thoroughwort is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Rough Boneset (*Eupatorium pilosum*)	Added Species (A native Ohio plant species recently added to the rare plant inventory and sufficient information has not yet been obtained to determine the Ohio listing status)	N/A	TBD, pending ODNR consultation response	Found in damp to seasonally wet sandy soils, meadows and fields, and shores of rivers or lakes.	No	No damp or seasonally wet sandy soils are present within the Project area, therefore the Project is not likely to affect rough boneset.	TBD, pending ODNR consultation response
Pink Thoroughwort (*Fleischmannia incarnata*)	Threatened	N/A	TBD, pending ODNR consultation response	Dry to moist, nutrient-rich or mineral-rich soils over mafic or limey rock, within hardwood forests or pine-hardwoods, or rarely brownwater river bottomlands. The species is strictly found in high pH soils.	No	Habitat containing soils over mafic or limey rock within hardwood or pine-hardwood forests are not present within the Project area. Therefore, the Project is not likely to affect pink thoroughwort.	TBD, pending ODNR consultation response
Sampson's Snakeroot (*Gentiana villosa*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows in grasslands, successional openings, serpentine barrens, and dry open woods.	No	No grasslands, serpentine barrens, or successional openings are present within the Project area. Dry woods are present but the understory is dominated by shrubs and saplings. Therefore, the Project is not likely to affect Sampson's snakeroot.	TBD, pending ODNR consultation response
Round-fruited Hedge-hyssop (*Gratiola virginiana*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows in wet prairies.	No	No wet prairie habitat is present within the Project area, therefore the Project is not likely to affect round-fruited hedge hyssop.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Mud-plantain (*Heteranthera reniformis*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in roadside ditches, edges of streams and ponds, freshwater tidal mudflats.	No	No roadside ditches, streams, ponds, or freshwater tidal mud flats are present within the Project area, therefore the Project is not likely to affect mud-plantain.	TBD, pending ODNR consultation response
Small-flowered Alum-root (*Heuchera parviflora*)	Threatened	N/A	TBD, pending ODNR consultation response	Found only in full shade under the overhangs of rockhouses or ledges of large rock formations, but where dry and seldom wet with seepage.	No	No rockhouses or ledges of large rock formations are found within the Project area, therefore the Project is not likely to affect small-flowered alum-root.	TBD, pending ODNR consultation response
Hairy Alum-root (*Heuchera villosa*)	Endangered	N/A	TBD, pending ODNR consultation response	The species is indigenous to rocky open woods, moist shaded rocky ledges and crevices of rocky outcrops.	No	No rocky open woods, rocky ledges, or rocky outcrops are present within the Project area, therefore the Project is not likely to affect hairy alum-root.	TBD, pending ODNR consultation response
Dwarf Iris (*Iris verna*)	Threatened	N/A	TBD, pending ODNR consultation response	Found in pine forests, post oak woods, mountains, and coastal plains.	No	No pine forests, post oak woods, mountains, or coastal plains are present within the Project area, therefore the Project is not likely to affect dwarf iris.	TBD, pending ODNR consultation response
Virginia Dwarf-dandelion (*Krigia virginica*)	Threatened	N/A	TBD, pending ODNR consultation response	Habitats include mesic to dry sand prairies, sandy savannas, sand dunes, sandy fields, sandy areas along paths and roadsides, and rocky glades without limestone.	No	No dry sand prairies, sandy savannas, sand dunes, sandy fields, sandy areas along paths, or rocky glades without limestone are present within the Project area. Therefore, the Project is not likely to affect Virginia dwarf-dandelion.	TBD, pending ODNR consultation response
Hairy Tall Lettuce (*Latuca hirsuta*)	Threatened	N/A	TBD, pending ODNR consultation response	The species grows in open woods, clearings, thickets, powerline and pipeline rights-of-way, and ridgetops.	Yes	Powerline ROW and ridgetop habitats are within the Project area. If hairy tall lettuce is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Wild Pea (Lathyrus venosus)	Endangered	N/A	TBD, pending ODNR consultation response	Found in sandy, open ground; shady banks; oak-hickory woods; ridges; thickets.	Yes	No sandy, open ground, shady banks, thickets, or oak-hickory woods are within the Project area. Ridgetops are within the Project area. If wild pea is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
American Lovage (*Ligusticum canadense*)	Endangered	N/A	TBD, pending ODNR consultation response	Found in moist to dryish, nutrient-rich forests and woodlands. Intolerant of disturbance.	No	Dry woodlands are present within the Project area, however much of the Project area has been disturbed. Therefore, the Project is not likely to affect American lovage.	TBD, pending ODNR consultation response
Balsam Squaw-weed (*Packera paupercula*)	Threatened	N/A	TBD, pending ODNR consultation response	Habitats include moist sand prairies, prairie remnants along railroads, sedge meadows, streambanks, moist sandy savannas, open woodlands, and abandoned fields. Areas with low ground vegetation and some history of disturbance are preferred.	No	No moist sand prairies, prairie remnants, sedge meadows, streambanks, moist sandy savannas, or abandoned fields are present within the Project area. Woodlands are present within the Project area, but ground vegetation is not low and the woodland is generally not disturbed, therefore the Project will likely not affect balsam squaw-weed.	TBD, pending ODNR consultation response
Riverbank Paspalum (*Paspalum repens*)	Threatened	N/A	TBD, pending ODNR consultation response	Species can be found floating in shallow, standing water. Terrestrial plants are dwarfed. Species is distributed in wet, muddy, alluvial banks along bayous, sloughs, especially oxbows.	No	No shallow standing water, bayous, sloughs, or oxbows are present within the Project, therefore the Project is not likely to affect riverbank paspalum.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Maypop (*Passiflora incarnata*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows in roadsides, prairies, plains, meadows, pastures, savannas, woodland edges and openings, stream and riverbanks.	Yes	No prairies, plains, meadows, pastures, savannas, or stream and river banks are present within the Project area. Roadside habitat and woodland edges and openings are within the Project area. If maypop is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
Gray Beard-tongue (*Penstemon canescens*)	Threatened	N/A	TBD, pending ODNR consultation response	Found in woodlands, glades, forest edges, rocky woodlands, and roadsides.	Yes	Woodlands, glades, forest edges, and roadsides are present within the Project area. If gray beard-tongue is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
Downy White Beard-tongue (*Penstemon pallidus*)	Threatened	N/A	TBD, pending ODNR consultation response	Habitats include dry rocky woodlands, hill prairies, dry-mesic railroad prairies, sandstone and limestone glades, upland savannas, thinly wooded bluffs, rocky cliffs, and abandoned fields.	No	Rocky woodlands, hill prairies, railroad prairies, sandstone and limestone glades, upland savannas, thinly wooded bluffs, rocky cliffs, and abandoned fields are not present within the Project area. Therefore the Project is not likely to affect downy white beard-tongue.	TBD, pending ODNR consultation response
Blue Scorpion-weed (*Phacelia covillei*)	Endangered	N/A	TBD, pending ODNR consultation response	Occurs in floodplains and adjacent forests.	No	No floodplains or floodplain forests are present within the Project area, therefore the Project is not likely to affect blue scorpion-weed.	TBD, pending ODNR consultation response
Black-seeded Needle Grass (*Piptochaetium avenaceum*)	Endangered	N/A	TBD, pending ODNR consultation response	Dry-mesic thinly forested sites of a southern affinity.	No	No thinly-forested areas are present within the Project area, therefore the Project is not likely to affect black-seeded needle grass.	TBD, pending ODNR consultation response
Pink Milkwort (*Polygala incarnata*)	Threatened	N/A	TBD, pending ODNR consultation response	Found in a variety of habitats ranging from dry sand to wet peaty soils, prairie remnants, lake margins, and meadows.	No	No prairies, lake margins, or meadows are located within the Project area, therefore the Project is not likely to affect pink milkwort.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Spanish Oak (*Quercus falcata*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows best in dry, upland sandhills. It is often found in mixed hardwood stands or occasionally with pines. While primarily found in the southeastern United States, the range extends from southern New Jersey and Ohio, south as far as north Florida and west to Oklahoma and Texas.	No	No upland sandhills are found within the Project area, therefore the Project is not likely to affect Spanish oak.	TBD, pending ODNR consultation response
Dotted Ramalina (*Ramalina farinacea*)	Endangered	N/A	TBD, pending ODNR consultation response	Low elevations on trees and shrubs	Yes	Trees and shrubs are within the Project area. If dotted ramalina is known to occur in the Project vicinity, this species may be affected by the Project and further coordination with the ODNR may be required.	TBD, pending ODNR consultation response
Pinxter-flower (*Rhododendron perclymenoides*)	Threatened	N/A	TBD, pending ODNR consultation response	Prefers moist slopes, wet flats, bogs, swamps, and north-facing bluffs.	No	No moist slopes, wet flats, bogs, swamps, or north-facing bluffs were identified within the Project area. Therefore, the Project is not likely to affect pinxter-flower.	TBD, pending ODNR consultation response
Silver Plume Grass (*Saccharum alopecuroides*)	Endangered	N/A	TBD, pending ODNR consultation response	Species is usually distributed in open woods or open sandy slopes; sandy or cherty soil.	No	No open woods with sandy soils are found within the Project area, therefore the Project is not likely to affect silver plume grass.	TBD, pending ODNR consultation response
Rock Skullcap (*Scutellaria saxatilis*)	Threatened	N/A	TBD, pending ODNR consultation response	Occurs in rich, often rocky, deciduous woods. It is associated with rocky woods of sandstone and shale, on hillsides, moist cliffs, talus slopes, in mesophytic ravines, moist areas along streams, but is sometimes found in dry woods or more open habitat, such as along roadsides.	No	Forested areas within the Project area were dry but not rocky, therefore the Project is not likely to affect rock skullcap.	TBD, pending ODNR consultation response

Species Name	State Listing Status	Federal Listing Status	Occurrence within 1 mile of Project	Habitat Description[1]	Potential Habitat in Project	Impact Assessment	Agency Comments/ Recommendations
Compass-plant (*Silphium laciniatum*)	Endangered	N/A	TBD, pending ODNR consultation response	Typical plant of black soil prairies in the tallgrass region. Other habitats include sand prairies, savannas, glades, and areas along railroads.	No	No prairies, savannas, or glades were identified within the Project area, therefore the Project is not likely to affect compass-plant.	TBD, pending ODNR consultation response
Sweet Goldenrod (*Solidago odora*)	Threatened	N/A	TBD, pending ODNR consultation response	Grows in savannas, pinelands, and dry woods.	No	No savannas or pine forests were observed within the Project area, therefore the Project is not likely to affect sweet goldenrod.	TBD, pending ODNR consultation response
False Goldenrod (*Solidago sphacelata*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in rock outcrops and dry rocky forests, usually over calcareous or mafic rocks.	No	No rock outcrops were observed in the Project area. Forest areas were dry but not rocky, therefore the Project is not likely to affect false goldenrod.	TBD, pending ODNR consultation response
Running Buffalo Clover (*Trifolium stoloniferum*)	Endangered	Endangered	TBD, pending ODNR consultation response	Requires periodic disturbance and a somewhat open habitat, but it cannot tolerate full-sun, full-shade, or severe disturbance. Historically found in rich soils in the ecotone between open forest and prairie. Today, the species is found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails.	Yes	Partially shaded, periodically disturbed areas are located within the Project area. Running Buffalo Clover (RBC) is a federally-listed species and no comments were received from USFWS regarding the prescence of RBC within the Project. Therefore, the Project is not likely to affect RBC.	TBD, pending ODNR consultation response
Yellow Crown-beard (*Verbesina occidentalis*)	Endangered	N/A	TBD, pending ODNR consultation response	Grows in forests, woodlands, pastures, and roadsides, especially abundant in alluvial areas or upslope over mafic or calcareous rocks.	No	Forests, woodlands, and roadside areas were observed within the Project area, however, upslope areas contained soils formed from non-calcareous sedimentary rock. Therefore, the Project is not likely to affect yellow crown-beard.	TBD, pending ODNR consultation response

Notes

[1] See attached references page for sources of habitat information

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