

Letter of Notification for the Greene-Beatty 345 kV Transmission Line Cut-In (Big Plain) Project



An **AEP** Company

PUCO Case No. 26-0744-EL-BLN

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Adm.Code 4906-6-05

Submitted by:
Ohio Power Company

August 3, 2026

LETTER OF NOTIFICATION FOR THE Greene-Beatty 345 kV Transmission Line Cut-In (Big Plain) PROJECT

LETTER OF NOTIFICATION

Ohio Power Company

Greene-Beatty 345 kV Transmission Line Cut-In (Big Plain) Project

4906-6-05 Accelerated Application Requirements

Ohio Power Company (the Company) provides the following information to the Ohio Power Siting Board (OPSB) in accordance with the accelerated application requirements of Adm.Code 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

Provide 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 letter of notification or construction notice application.

The Company is proposing the Greene-Beatty 345 kV Transmission Line Cut-in (Big Plain) Project (the "Project"), located in Fairfield Township, Madison County, Ohio. The purpose of the Project is to provide 345 kV interconnection service to Springwater Solar, LLC, an Independent Power Producer (IPP). The PJM Queue Position is AF1-228. The Company will provide 345 kV service to Big Plain Station, which will be constructed by the IPP (as approved in OPSB Case Number 22-0094-EL-BGN) by looping the Greene-Beatty 345 kV transmission line through the new station. The length of the transmission line cut-in is approximately 0.3 miles. Supplemental easements will be obtained by the Company for portions of the Project outside of existing right-of-way of the Greene-Beatty 345 kV transmission line. The location of the Project is shown on **Figure 1** and **Figure 2** of **Appendix A**.

The Project meets the requirements for a LON because it is within the types of projects defined by item 1(d)(ii) of Adm.Code 4906-1-01 Appendix A of the Application Requirement Matrix for Election Power Transmission Lines:

- (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:*
 - (d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:*
 - (ii) Any portion of the line is on property owned by someone other than the specific customer or the applicant.*

The Project has been assigned Case No. 26-0744-EL-BLN.

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B(2) Statement of Need

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

Springwater Solar LLC plans to build a 155 MW Maximum Facility Output (MFO) (93 MW Capacity) solar generating facility in Madison County, Ohio. As part of the AF1-228 IPP Interconnection Service Agreement, the Company will be required to cut-in to the Greene-Beatty 345 kV Transmission Line and install approximately 0.3 miles of 345kV line to connect to the Big Plain Substation.

Ohio Substitute House Bill 15, effective in August 2025, requires applicants for certificates of environmental compatibility and public need for the construction of new transmission lines to submit a summary of studies that have been made by or for the applicant of cost-effective advanced transmission technologies that maximize the value, expand the capacity, or improve the reliability of the facility. R.C. 4906.06(A)(7). The statutory definition of advanced transmission technology includes advanced conductors, defined as “conductor with a direct current electrical resistance that is at least ten per cent lower than existing conductors of a similar diameter on the electric transmission system while simultaneously increasing the energy carrying capacity by at least seventy-five per cent.” R.C. 4906.01(N). In subsequent rulemaking, the Ohio Power Siting Board determined that the advanced transmission technology requirements in Substitute House Bill 15 are inapplicable to short, gen-tie lines. *In the Matter of the Consideration of Ohio Power Siting Board Rules, as Required by Substitute House Bill Number 15*, Case No. 25-757-GE-BRO, Finding and Order, ¶ 9 (Nov. 20, 2025). The Project scope is similar to a gen-tie line, and therefore the Company determined that no advanced transmission technologies as defined by the Revised Code are required or would be cost-effective to implement. Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional / robust solution needed for this specific case.

Failure to move forward with the proposed Project will result in the Company’s inability to serve the customer’s generation interconnection request, thereby jeopardizing the customer’s required in-service date per the FERC approved Interconnection Service Agreement.

The Project is assigned to the PJM Network upgrade number N6769.1 and N6741.1. The Board has approved the generating facility (Case # 22-0094-EL-BGN). The Project is included on page 83 of the Company’s 2026 Long Term Forecast Report (LTFR) (See **Appendix B**).

B(3) Project Location

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 substations is shown on **Figure 1**, in **Appendix A**.

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B(4) Alternatives Considered

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

The Project is located within an area approved for a solar generation facility. Big Plain Station, the IPP's collector station, and the existing Greene-Beatty 345 kV line are nearly adjacent. No impacts to wetlands, streams, or cultural resources or tree clearing are anticipated. Based on the IPP's proposed development and existing facilities in the area, the proposed location is the most suitable and least impactful for the Project. Other alternatives would add additional transmission length without any additional benefit. Therefore, this alternative represents the most suitable location and is the most appropriate solution for meeting the Company and IPP's needs in the area.

B(5) Public Information Program

Describe its public information program to inform affected property owners and residents of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Company will inform impacted and adjacent property owners and tenants about this Project through several different mediums. Within seven days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of Adm.Code 4906-6-08(A)(1-6). Further, the Company has mailed (or will mail) a letter, via first class mail, to impacted and contiguous owners and tenants. The letter will comply with all requirements of Adm.Code 4906-6-08(B). The Company maintains a website (<http://AEPOhio.com/OPSBFilings/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to local public officials and the public library in each political subdivision for this Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project.

B(6) Construction Schedule

Provide an anticipated construction schedule and proposed in-service date for the project.

Construction of the Project is planned to begin in December 2026 with an anticipated in-service date of April 2027.

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B(7) Area Map

Provide a map of at least 1:24,000 scale clearly depicting the facility and proposed limits of disturbance with clearly marked streets, roads, and highways, and an aerial image.

Figure 1 in **Appendix A**, identifies the location of the Project area on a United States Geological Survey 1:24,000 topographic maps of the Big Plain and Harrisburg, Ohio quadrangles. **Figure 2** in **Appendix A** displays the Project components on a 2025 aerial photograph.

B(8) Property Agreements

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 **Table 1**, below.

Table 1 – Property Agreements

Property Parcel Number	Agreement Type	Easement or Option Obtained (Yes/No)
07-00246.000	Supplemental Easement	No - Under option by IPP with portion to be transferred to the Company.
07-00317.000	Supplemental Easement	No

B(9) Technical Features

Describe the following information regarding the technical features of the project:

B(9)(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The transmission lines are estimated to include the following:

Greene-Beatty Cut-in

Voltage: 345 kV
Conductors: Double Bundled 1272 KCMIL 54/19 "Pheasant" ACSR
Static Wire: (2) 7#8 Alumoweld
Insulators: Polymer
ROW Width: 150 feet
Structure Type: Two (2) single circuit, steel three-pole dead ends
Two (2) single circuit, steel monopole dead ends

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PROJECT

B(9)(b) Electric and 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.

No occupied residences or institutions are located within 100 feet of the Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately \$6,200,000 based on a Class 4 estimate. The costs for this Project will be recovered through total reimbursement by the IPP.

B(10) Social and Ecological Impacts

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

B(10)(a) Land Use

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 location is in an area of agricultural use, primarily for row crops, with scattered residences in the vicinity. Significant portions of the vicinity have been optioned for construction of a solar generation facility. An aerial photograph of the Project vicinity is provided as **Figure 2**. The Project is mapped within Fairfield Township in Madison County. No tree clearing is anticipated as part of the Project.

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 Area is agricultural land planned for development of a solar generation facility. The dominant agricultural use is row crops (i.e., soybeans and corn). Based on communication with the Madison County Auditor's office on July 2, 2026, there are no agricultural district parcels or Ohio Department of Agricultural easements within the potential disturbance area of the Project.

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B(10)(c) Archaeological and 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.

A cultural resource review and report was conducted by the Company’s consultant for the Project in April 2026. Correspondence from the State Historic Preservation Office (“SHPO”) was received in June 2026, see **Appendix C**. The SHPO stated that that the Project will have no adverse effect on historic properties and that no further archaeological work is necessary.

B(10)(d) Local, State, and Federal Agency Correspondence

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 summary of anticipated permits and authorizations for the Project is provided in the **Table 2**, below. There are no other known local, state, or federal requirements that must be met prior to commencement of the Project.

Table 2 – Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
General Permit for Stormwater Discharges Associated with Construction Activity under the National Pollutant Discharge Elimination System (NPDES) - OHC000006	Ohio Environmental Protection Agency	Expected Fall 2026
	Madison County	
Notice Criteria	Federal Aviation Administration	Coordination complete 4/16/2026. Not required to file notice with FAA.
Temporary Construction Entrance and Township Road Crossing Permits	Fairfield Township	Expected Summer 2026
Clean Water Act Section 404/401	United States Army Corps of Engineers	Not Applicable
	Ohio Environmental Protection Agency	
Archaeology/Architectural	Ohio Historic Preservation Office	Coordination complete 6/4/2026. No additional work required.
Threatened and Endangered Species	United States Fish and Wildlife Service	Consultation complete 3/19/2026
Threatened and Endangered Species	Ohio Department of Natural Resources	Consultation complete 4/6/2026

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

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.

As part of the ecological study completed for the Project, coordination letters were submitted to the United State Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review of the Project for potential impacts to state and/or federally protected species. USFWS and ODNR provided responses on March 19, 2026, and April 6, 2026, respectively. Copies of the agencies' responses are presented in **Appendix C**.

Table 3 in Appendix D provides the full evaluation of the federal and state threatened or endangered species for the Project area.

No tree clearing or in-water work is proposed. Based on the nature of the proposed Project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated.

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.

The Company's consultant conducted an ecological survey in the Project study area on April 22, 2026, and prepared Ecological Survey Reports for the Project (**Appendix D**). The survey of the Project area identified one intermittent stream and one Palustrine Emergent (PEM) wetland. Project construction activities are not expected to result in discharge of fill in any streams or wetlands.

Based on a review of the Protected Areas Database of the United States as well as the Conservation Easement Database, there are no state or national parks, forests, wildlife areas, or mapped conservation easements in the vicinity of the Project.

The FEMA Flood Insurance Rate Map ("FIRM") was reviewed to identify any floodplains/flood hazard areas that have been mapped within the Project Area (specifically, map numbers 39129C0025J and

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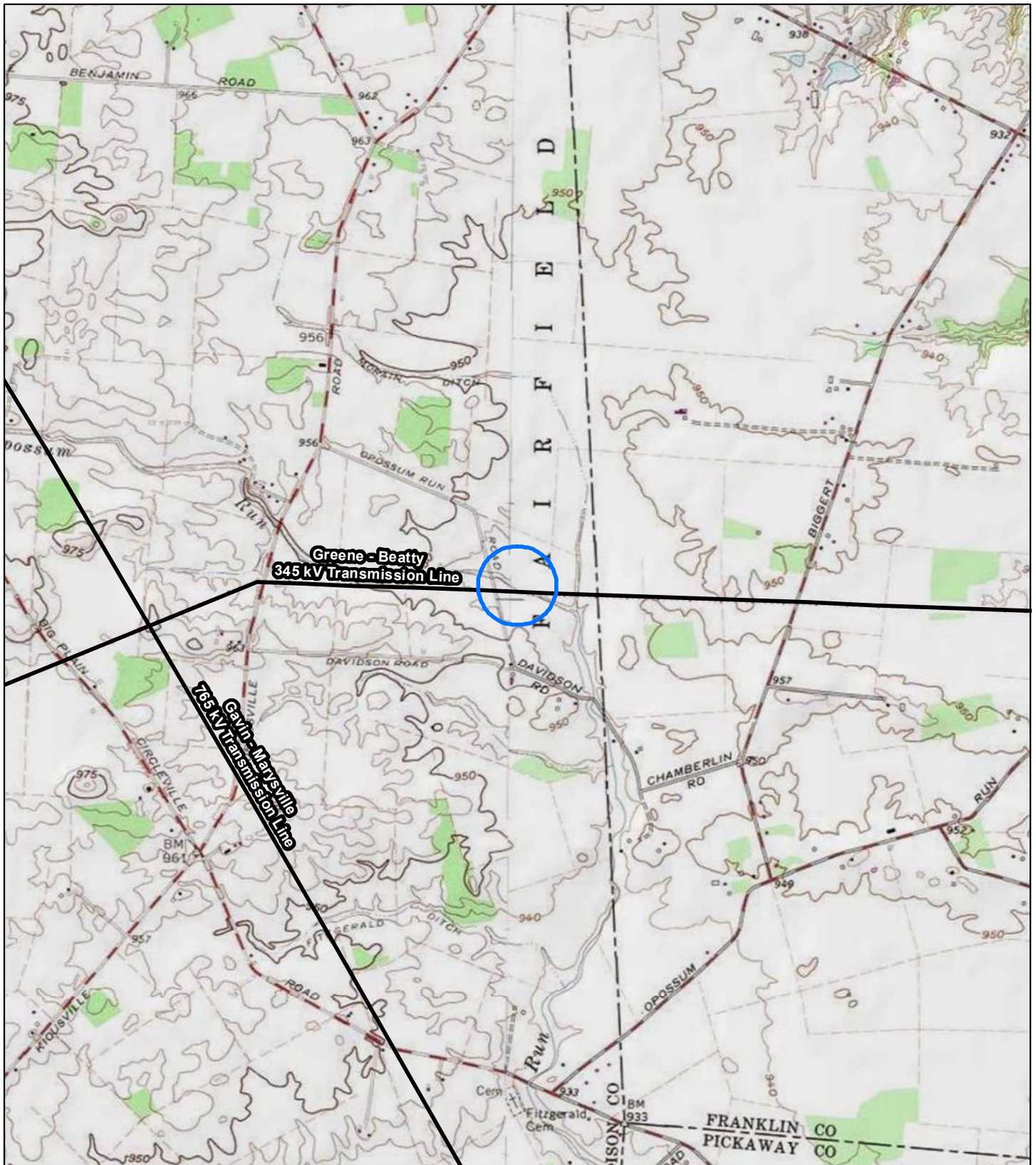
39097C0300D). Based on this mapping, no FEMA-designated 100-year floodplains are mapped across the Project's areas of disturbance. No floodplain permitting is necessary.

B(10)(g) 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 Project Maps



Legend:

- Project Area
- Existing Transmission Line

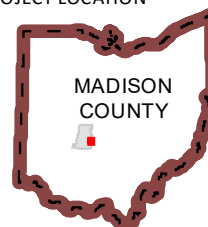
Data Sources:
ESRI USA Topographic Maps
Big Plain and Harrisburg, Ohio

Ohio State Plane South
NAD 1983



July 06, 2026

PROJECT LOCATION

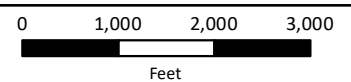


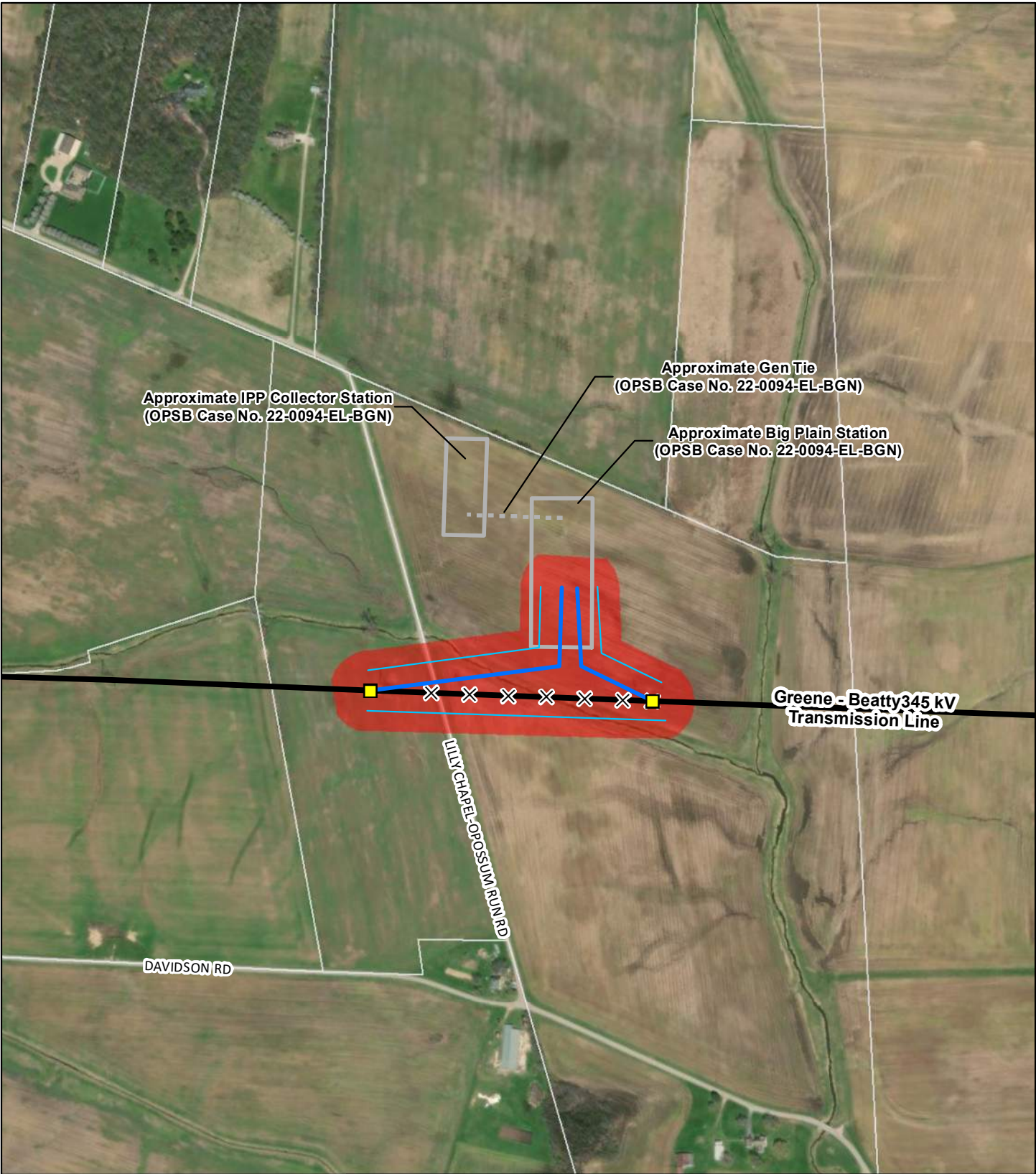
MADISON COUNTY, OHIO

FIGURE 1 TOPOGRAPHIC OVERVIEW



**Greene-Beatty 345 kV
Transmission Line
Cut-In (Big Plain) Project**





- Proposed Transmission - Cut-in Replacement Structure - Proposed and Existing ROW - Route Corridor - Approximate Gen Tie (Filed) - Approximate Substation (Filed) - Existing Transmission - Parcel Boundary	Data Sources: AEP, ESRI World Imagery (2025)	PROJECT LOCATION MADISON COUNTY, OHIO	FIGURE 2 PROJECT AERIAL MAP Greene-Beatty 345 kV Transmission Line Cut-In (Big Plain) Project 0 250 500 750 Feet	
	Ohio State Plane South NAD 1983			
	July 22, 2026			

Appendix B Long-Term Forecast Report

1	LINE NAME AND NUMBER:	Kiber -Groves Corner (TP2023060 s3442)
2	POINTS OF ORIGIN AND TERMINATION	Kiber - Groves Corner INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	2 mi / 100 ft / 2 circuit
4	VOLTAGE: DESIGN / OPERATE	138 / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2025
7	CAPITAL INVESTMENT:	\$16.5 M
8	PLANNED SUBSTATION:	Kiber
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Service to new customer
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Unable to serve new customer
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Genoa Extension 138 kV (TP2023118)
2	POINTS OF ORIGIN AND TERMINATION	Corridor - Genoa INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.38 mi / 100 ft / 2 circuit (0.1 mi of line work)
4	VOLTAGE: DESIGN / OPERATE	138 / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2027
7	CAPITAL INVESTMENT:	\$1.2 M
8	PLANNED SUBSTATION:	N/A
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Reterminate line into the rebuilt string.
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Station string wont be rebuilt
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	East Leipsic Ext. 138 kV (TP2022038)
2	POINTS OF ORIGIN AND TERMINATION	East Leipsic - Richland & East Lima - Yellow Creek INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.05 mi of line work / 100 ft / 2 circuit
4	VOLTAGE: DESIGN / OPERATE	138 / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2028 - 2029
7	CAPITAL INVESTMENT:	\$1.59 M
8	PLANNED SUBSTATION:	N/A
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Pole Heightening on East Leipsic Extension
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	East Leipsic - West Interconnect 69kV to go underneath the 138 kV line
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Mifflin - Saint Clair Ave. 138 kV (TP2024013)
2	POINTS OF ORIGIN AND TERMINATION	Mifflin - Saint Clair Ave. INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	~5.76 mi / 100 ft / 1 circuit (0.2 mi of relocation work)
4	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2026 - 2027
7	CAPITAL INVESTMENT:	\$1.21 M (reimbursable)
8	PLANNED SUBSTATION:	N/A
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Customer needs line relocated
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Stops customers plans at site
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Big Plain - Springwater Solar 345 kV (TP2020277 AF1-228)
2	POINTS OF ORIGIN AND TERMINATION	Big Plain - Springwater Solar INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.05 mi / 150 ft / 1 circuit
4	VOLTAGE: DESIGN / OPERATE	345 / 345 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2026
7	CAPITAL INVESTMENT:	\$0.4 M (reimbursable)
8	PLANNED SUBSTATION:	Big Plain
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Service to new customer
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Unable to serve new customer
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Beatty - Green 345 kV (TP2020277 AF1-228)
2	POINTS OF ORIGIN AND TERMINATION	Chenoweth - Beatty INTERMEDIATE STATION - Big Plain
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	15.9 mi / 150 ft / 1 circuit (0.1 mi of work)
4	VOLTAGE: DESIGN / OPERATE	345 / 345 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2026
7	CAPITAL INVESTMENT:	\$2.7 M (reimbursable)
8	PLANNED SUBSTATION:	Big Plain
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Service to new customer
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Unable to serve new customer
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Kirk - West Hebron 138 kV (TP2023504)
2	POINTS OF ORIGIN AND TERMINATION	Kirk - West Hebron INTERMEDIATE STATION - Peach
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	9.62 mi / 100 ft / 2 circuit (0.1 mi of work)
4	VOLTAGE: DESIGN / OPERATE	138 / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025
6	CONSTRUCTION:	2026 - 2027
7	CAPITAL INVESTMENT:	\$0.05 M
8	PLANNED SUBSTATION:	Peach
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Service to new customer
12	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Unable to serve new customer
13	MISCELLANEOUS:	
14	Advanced Transmission Technologies	Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case.
1	LINE NAME AND NUMBER:	Peach - Georgia #1 138 kV (TP2023504)
2	POINTS OF ORIGIN AND TERMINATION	Peach - Georgia INTERMEDIATE STATION - N/A
3	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.1 mi / 100 ft / 1 circuit
4	VOLTAGE: DESIGN / OPERATE	138 / 138 kV
5	APPLICATION FOR CERTIFICATE:	2025

Appendix C Agency Correspondence



In reply refer to:
2026-MAD-68523

June 4, 2026

Seth T. Cooper
Principal Investigator
Weller & Associates, Inc.
1395 W 5th Ave.
Columbus, OH 43212
Email: s.cooper@wellercrm.com

RE: Section 106 Review: Big Plains Cut-In Project, Madison County, Ohio

Dear Mr. Cooper:

This letter is in response to the correspondence received on June 3, 2026, regarding the proposed Big Plains Cut-In Project in Madison 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 (OPSB) for siting this project (OAC 4906-4 & 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 *A Cultural Resource Management Letter Report for the Proposed Big Plains Cut-In Project in Fairfield Township, Madison County, Ohio* (Weller & Associates, 2026). The purpose of the project is for the cut-in connection of a connection transmission line into an existing transmission line. A literature review was completed for this project; the entirety of the project area has been the subject of previous professional surveys (Chidester et al. 2022a, 2022b). No archaeological sites have been previously identified within the project area.

Based on the information provided, our office agrees that the project, as proposed, will have no effect on historic properties. Therefore, no further coordination is required, unless the project changes or additional cultural resources are discovered during the implementation of this project. In such a situation, this office should be contacted as required by 36 CFR § 800.13. If you have any questions concerning this review, please contact me via email at broddy@ohiohistory.org. Thank you for your cooperation.

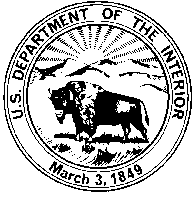
Sincerely,

A handwritten signature in blue ink that reads "Bridget C. Roddy".

Bridget C. Roddy, Project Reviews Manager-Archaeology
Resource Protection and Review
State Historic Preservation Office

RPR Serial No. 1114293

United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994



March 19, 2026

Project Code: 2026-0062800

Dear Mr. Geckle:

The U.S. Fish and Wildlife Service (Service) 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 effects 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: Due to the project, type, size, and location, we do not anticipate any effect to federally endangered, threatened, or proposed species or proposed or designated critical habitat. If there are any project modifications during the term of this action, or additional information for listed or proposed species or their critical habitat becomes available, or if new information reveals effects of the action that were not previously considered, then please contact us for additional project review.

Bald Eagle: The project is in the range of the bald eagle (*Haliaeetus leucocephalus*), which is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). We recommend that you visit <https://ohiodnr.gov/discover-and-learn/animals/birds/bald-eagle> to determine if the project is within 0.5 mile of a documented eagle nest. Additionally, because not all eagle nests in the state have been mapped, we recommend that an on-site examination be conducted to determine if any large stick nests are visible from project area. If the project is within 0.5 mile of a documented eagle nest or the on-site examination reveals the presence of a potential eagle nest, we recommend visiting <https://www.fws.gov/story/do-i-need-eagle-take-permit> to determine if an eagle take permit is required.

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,

Erin Knoll
Field Office Supervisor



**Department of
Natural Resources**
ohiodnr.gov

Mike DeWine, Governor
Jim Tressel, Lt. Governor
Mary Mertz, Director

Office of Real Estate & Land Management

Tara Paciorek - Chief
2045 Morse Road – E-2
Columbus, Ohio 43229-6693

April 6, 2026

Aaron Geckle
V3 Companies
312 Walnut Street, Suite 1600
Cincinnati, Ohio 45202

Re: 26-0472_Big Plains Cut-in IPP

Project: The proposed project involves constructing a new 345 kV cut-in of the Beatty-Greene transmission line that will extend to the proposed Big Plains Station to interconnect the solar generation facility.

Location: The proposed project is located in Pleasant Township, Franklin County and Fairfield Township, Madison County, Ohio.

Center Coordinates: (39.8346, -83.2491)

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: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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 project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. Because presence of state endangered bat species has been established in the area, summer tree clearing is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree clearing inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in clusters of dead leaves on tree limbs. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree and/or tree limb clearing 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 a Diameter Breast Height (DBH) $\geq 20''$ if possible.

For every project, the DOW also recommends that a winter bat habitat assessment is conducted to determine if potential hibernacula are present within the project area. This is to limit possible disturbances that seasonal tree clearing and/or subsurface work (e.g., trenching, blasting, etc.) may cause to hibernating bats. Potential hibernacula include rocky outcroppings, caves, and underground mines. Direction on how to conduct winter habitat assessments can be found in the joint guidance [OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE \(OH-FIELD OFFICE\) JOINT GUIDANCE FOR BAT SURVEYS](#). If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile permanent tree clearing buffer around the hibernaculum entrance. Limited summer or winter tree clearing may be acceptable after consultation with the DOW. If a habitat assessment for projects involving subsurface disturbance finds that a potential hibernaculum is present within 5 miles of the project area, please consult with Eileen Wyza for project recommendations. If no tree clearing 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

clubshell (*Pleurobema clava*)

rayed bean (*Villosa fabalis*)

Northern riffleshell (*Epioblasma torulosa rangiana*)

snuffbox (*Epioblasma triquetra*)

Federally Threatened

rabbitsfoot (*Theliderma cylindrica*)

State Endangered

elephant-ear (*Elliptio crassidens crassidens*)

State Threatened

Salamander Mussel (*Simpsonaias ambigua*)

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

spotted darter (*Etheostoma maculatum*)

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

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species.

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

Water Resources: The Division of Water Resources has not conducted a project specific review and/or comments, however, the guidance provided below should be reviewed by the Environmental Review applicant for applicability on this project and subsequent compliance.

If the subject project is in a floodplain regulated by the Federal Emergency Management Agency (FEMA), the [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals. The FEMA National Flood Hazard Layer (NHFL) Viewer [website](#) can be utilized to see if the project is in a FEMA regulated floodplain. If the project is not in a FEMA regulated floodplain, then no further action is required.

Ohio Revised Code (ORC) Section 1521.16 mandates that any owner of a property or a facility that has the capacity of withdrawing 100,000 gallons per day (gpd) of water from groundwater, surface water, or both must register with the Division of Water Resources' [Water Withdrawal Facilities Registration \(WWFR\) Program](#) and report their withdrawals annually.

Additional coordination may be required depending on the location of the withdrawal and consumptive use. Permitting may be required for:

- New or increased consumptive use of water averaging 2 million gallons per day (mgd) within 30 days within the Ohio River basin.
- New or increased withdrawal and consumptive water use in the Lake Erie watershed averaging 1 million gallons per day (mgd) or more in 90 days.
- New or increased water withdrawal directly from Lake Erie averaging 2.5 million gallons per day (mgd) or more in 90 days.
- Diversion or movement of water across the Ohio River and Lake Erie basin divide.

If the project does not involve activities that are subject to water withdrawal regulatory requirements as described above, then no further action is required. For more information, visit the [Water Inventory & Planning website](#).

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew (Environmental Services Administrator) at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Expiration: ODNR Environmental Reviews are typically valid for 2 years from the issuance date. If the scope of work, project area, construction limits, and/or anticipated impacts to natural resources have changed significantly from the original project submittal, then a new Environmental Review request should be submitted.

Appendix D Ecological Survey Report



Big Plain Cut-in IPP Project

Ecological Report

Project Site:

North of Lily Chapel-Opossum Road and Davidson Road Intersection
London, Madison County, Ohio

Prepared For:

AEP Ohio Transmission Company, Inc.
8600 Smiths Mill Road
New Albany, Ohio 43054

Aldridge Electric, Inc.
844 E. Rockland Road
Libertyville, IL 60048



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May 2026

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EXECUTIVE SUMMARY

V3 Companies, Ltd. (V3), performed an ecological survey and report for Big Plain Cut-in IPP Project, located in London, Madison County, Ohio (SITE) on April 22, 2026.

V3 reached the following conclusions based on review of available and reasonably ascertainable federal, state, and local resources, and a SITE inspection conducted on the date referenced above.

- One stream was identified on-SITE. ST-1-INT (Opossum Run) is likely to be considered “Waters of the U.S.” and subject to regulation by the Ohio Environmental Protection Agency (OEPA) and U.S. Army Corps of Engineers (USACE).
- One wetland was identified on-SITE. Wetland WL-A-PEM exhibited a hydrologic connection to a federally jurisdictional “Waters of the U.S.,” and as such, would likely be subject to regulation by the Ohio Environmental Protection Agency (OEPA) and U.S. Army Corps of Engineers (USACE).
- An official species list obtained from the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) system indicated that the SITE is within the ranges of the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), as well as the tricolored bat (*Perimyotis subflavus*), salamander mussel (*Simpsonaias ambigua*), and monarch butterfly (*Danaus plexippus*), which are currently under consideration for federal listing.
- The USFWS also noted that the project is within the range of the bald eagle (*Haliaeetus leucocephalus*). A review of the ODNR bald eagle nest mapping resource indicated that the nearest documented bald eagle nest is located approximately 7 miles west of the SITE. No indicators of bald eagle nesting were observed during the SITE investigation. Based on these findings, impacts to bald eagles are not anticipated.
- Correspondence with the Ohio Department of Natural Resources (ODNR) indicated no records of endangered, threatened, or rare (ETR) species or special features within a one-mile radius of the SITE. The ODNR Division of Wildlife noted that the SITE is within the range of thirteen (13) ETR species, including the state-endangered northern harrier (*Circus hudsonius*). ODNR concluded that the project is not likely to impact these species provided suitable habitat is not affected and recommended avoidance and minimization measures. The SITE consists primarily of maintained and disturbed conditions with limited suitable habitat; therefore, impacts to state-listed species are not anticipated.

Chapter 1 Introduction

This report has been prepared solely in accordance with an agreement between Aldridge Electric (“CLIENT”) Inc., and V3 Companies (“V3”), Ltd.

The services performed by V3 have been conducted in a manner consistent with the level of quality and skill generally exercised by members of its profession and consulting practices relating to this type of engagement.

This report is solely for the use of CLIENT and was prepared based upon an understanding of CLIENT’s specific objective(s) and based upon information obtained by V3 in furtherance of CLIENT’s specific objective(s). Any reliance of this report by third parties shall be at such third party’s sole risk as this report may not contain, or be based upon, sufficient information for purposes of other parties, for their objectives, or for other uses. This report shall only be presented in full and may not be used to support any other objectives than those for CLIENT as set out in the report, except where written approval and consent are expressly provided by CLIENT and V3.

1.1 Introduction

The purpose of this investigation was to conduct an ecological survey and report of the SITE to evaluate potential land development permitting requirements regarding natural resources. In this report, V3 provides a detailed description of the information reviewed and collected as part of the scope of work for this project. V3 summarizes the jurisdictional framework applicable to this project, provides a desktop review of relevant and publicly available documents, and details information collected during the SITE reconnaissance including a wetlands determination, an evaluation of the potential presence of other natural resources within the SITE boundary, and a discussion of endangered, threatened, and rare (ETR) species and habitat. The Conclusions section summarizes V3’s findings, addresses potential areas of concern and permitting, regulatory, and other relevant issues.

The project supports interconnection of the Springwater Solar, LLC 155-MW solar facility to AEP existing infrastructure. The project consists of constructing the Beatty-Green 345-kV cut in transmission line between Structures 240 and 241, installation of Structures 240A and 240B and extension into future Big Plain Station, near Lilly Chapel-Opossum Run Road, in London, Madson County, Ohio (**Figure 1**).

Chapter 2 Jurisdictional Resources

2.1 Wetlands

Wetlands offer a variety of functions and values that may include, but are not limited to, groundwater recharge/discharge, flood flow alteration, sediment/toxicant retention, and fish and wildlife habitat. Because of the perceived functions and values of wetlands, USACE developed the Wetlands Delineation Manual, (*1987 Manual*)¹ to identify wetlands.

Wetlands are defined in the 1987 Manual as, “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.”² The 1987 Manual outlines the protocol for distinguishing wetland areas from "upland" areas. Wetland areas are delineated according to three primary criteria: vegetation, soil, and hydrology. An area is determined to qualify as a wetland if it meets the following “general diagnostic environmental characteristics:”

- Hydrophytic vegetation
- Hydrology
- Hydric Soil

¹ USACE. Waterways Experiment Station. Wetlands Research Program. “Corps of Engineers Wetlands Delineation Manual.” Vicksburg, MS: Environmental Laboratory, 1987

Chapter 3 Desktop Review

V3 reviewed applicable, readily available, and accessible historical information for the potential presence of wetlands, “Waters of the U.S.,” and other natural resources.

3.1 United States Geological Survey 7.5-Minute Quadrangle Map

A USGS 7.5-Minute Quadrangle map displays contour lines to portray the shape and elevation of the land surface. Quadrangle maps render the three-dimensional changes in elevation of the terrain on a two-dimensional surface. The maps usually portray both manmade and natural topographic features. Although they show lakes, rivers, various surface water drainage trends, vegetation, etc., they typically do not provide the level of detail needed for accurate evaluation of wetlands. However, the existence of these features may suggest the potential presence of wetlands.

The SITE is situated in the Big Plan and Harrisburg, Ohio USGS 7.5-Minute Quadrangle Map. No Section, Township and Range designations are applicable at this location, as the site lies within the Virginia Military Survey District. V3 evaluated the topography and concluded that the SITE elevation ranges from approximately 938 to 948 feet above mean sea level (AMSL). One (1) aquatic feature are mapped within the SITE area (**Figure 1**).

3.2 National Wetlands Inventory Map

National Wetlands Inventory (NWI) maps were developed to meet a U.S. Fish and Wildlife Service (USFWS) mandate to map the wetland and deepwater habitats of the U.S. These maps were developed using high altitude aerial photographs and USGS Quadrangle maps as a topographic base. Indicators that exhibited pre-determined wetland characteristics, visible in the photographs, were identified according to a detailed classification system. The NWI map retains some of the detail of the Quadrangle map; however, it is used primarily for demonstration of wetland areas identified by the agency. The maps are accurate to a scale of 1:24,000. In general, the NWI information requires field verification.

NWI data is shown projected over aerial imagery in **Figure 2**. One (1) NWI feature is mapped within the SITE area (**Table 1**). The presence of NWI features mapped partially or fully within the SITE area suggests the potential presence of wetlands or other regulated aquatic features on-SITE.

Table 1: NWI Classification Description

Symbol	Description	Count
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	1

3.3 Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) was developed in 1979 to reform disaster relief and recovery, civil defense, and to prepare and mitigate for natural hazards. The Mitigation Division of FEMA manages the National Flood Insurance Program which provides guidance on how to lessen the impact of disasters on communities through flood insurance, floodplain management, and flood hazard mapping. Proper floodplain management has the ability to minimize the extent of flooding and flood damage and improve stormwater quality by reducing stormwater velocities and erosion. The one percent annual chance flood (100-year flood) boundary must be kept free of encroachment as the national standard for the program.

V3 reviewed digital National Flood Hazard Zone data for Madison County, Ohio. No portion of the SITE is mapped within the 100-year floodway or a flood zone (**Figure 2**).

3.4 United States Department of Agriculture Soil Survey

V3 reviewed the soils mapped on-SITE using the Natural Resource Conservation Service (NRCS) digital soil survey data for Madison County, Ohio. This data is projected over aerial photography, illustrating distinct soil map unit boundaries, in **Figure 3**.

Table 2: Soil Survey On-SITE

Soil Map Unit	Description	Hydric within Madison County
CsB	Crosby-Lewisburg silt loams, 2 to 6 percent slopes	NO
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	YES
CsA	Crosby-Lewisburg silt loams, 0 to 2 percent slopes	NO

One hydric soil unit is situated within the SITE. Kokomo silty clay loam, 0 to 2 percent slopes is considered hydric within Madison County, Ohio. Soils are considered hydric if more than 50 percent of the soil contains hydric components according to the NRCS Web Soil Survey. The presence of hydric soil units within the SITE area suggests appropriate wetland soils are located on-SITE.

3.5 Endangered, Threatened, and Rare Species Evaluation

An official species list obtained from the USFWS Information for Planning and Consultation (IPaC) system indicated that the SITE is within the ranges of the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*), as well as the tricolored bat (*Perimyotis subflavus*), salamander mussel (*Simpsonaias ambigua*), and monarch butterfly (*Danaus plexippus*), which are currently under consideration for federal listing. Based on the project scope, size, and location, the USFWS determined that the proposed activities are not expected to affect any federally listed, proposed, or candidate species, nor any designated critical habitat.

The USFWS also noted that the project is within the range of the bald eagle (*Haliaeetus leucocephalus*) and recommended review of available nest location data and field verification to determine whether the project is within 0.5 mile of a documented nest. A review of the ODNR bald eagle nest mapping resource indicated that the nearest documented bald eagle nest is located near Deer Creek, west of Glade Run Road, approximately 7 miles west of the SITE. A field review of the SITE and surrounding area was also conducted during the site visit, and no large stick nests or other indicators of bald eagle nesting were observed. Based on these findings, impacts to bald eagles are not anticipated.

Correspondence with the Ohio Department of Natural Resources (ODNR) indicated no records of ETR species or special features or areas within a one-mile radius of the SITE area. Additionally, the ODNR Division of Wildlife noted that the SITE is within the range of thirteen (13) ETR species, including four bat species, seven mussel species, one fish species and one bird species (**Table 3**). Due to the presence of federally and/or state-listed bat species within the region, ODNR advised that tree clearing during the summer months is not recommended. Furthermore, seasonal presence/absence surveys conducted during the summer would not be considered sufficient to document absence; therefore, tree clearing should occur during the winter clearing window (October 1 through March 31) to minimize potential impacts. See **Table 3** for the recommended clearing dates. No potential bat hibernacula such as karst features or known mine openings were identified within 0.25 mile. A winter bat habitat desktop assessment was completed in accordance with ODNR recommendations to evaluate the potential for suitable hibernacula within and near the SITE (**Figure 1A**). No potential bat hibernacula, such as karst features or known mine openings, were identified within 0.25 mile of the SITE. Review of geologic mapping, karst feature databases, and aerial imagery confirmed the absence of caves, mines, or other hibernacula features within the SITE or surrounding area. Therefore, suitable winter bat habitat is not present, and impacts to hibernating bats are not anticipated.

Also, the ODNR recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the greatest extent practicable, with implementation of appropriate Best Management Practices (BMPs) to control erosion and sedimentation. The ODNR Division of Wildlife noted that the project is within the range of several state- and federally listed aquatic species, including seven mussel species and one state-endangered fish species (spotted darter, *Etheostoma maculatum*); however, because no in-water work is proposed within a perennial stream of sufficient size, the project is not likely to impact these species. Additionally, ODNR recommends avoiding in-water work in perennial streams from March 15 through June 30 to protect indigenous aquatic species and their habitat. While this timing restriction is specific to perennial systems, consideration of similar protective measures may be warranted for the intermittent stream present within the SITE.

The northern harrier (*Circus hudsonius*), a state-endangered species, is typically associated with large, contiguous marshes and grasslands and is most commonly observed as a migrant or winter resident. The ODNR recommended avoiding construction during the nesting period (April 15 through July 31) where suitable habitat is present. The SITE consists primarily of actively farmed uplands and areas of active construction associated with utility development, including graded surfaces, maintained corridors, roadside ditches, and a narrow intermittent stream with adjacent emergent wetland features. Vegetation is predominantly low-growing, sparse, or recently disturbed, with no contiguous grassland or marsh habitat of sufficient size or structure to support nesting. Therefore, suitable nesting habitat is not present within the SITE, and the project is not expected to result in impacts to this species.

Overall, ODNR concluded that the project is not likely to impact state-listed species provided suitable habitat is not affected and recommended implementation of avoidance and minimization measures (**Table 3**).

Based on the documentation referenced above, additional correspondence with the agencies does not appear to be warranted at this time. If federal permitting or federal financing is used in future development, additional coordination may be necessary. Copies of agency correspondence can be referenced in **Appendix A**.

Table 3: ETR Species Table

**No perennial streams observed on-SITE*

Scientific Name	Common Name	State Listed Status	Federally Listed Status	Typical Habitat Description	Habitat Observed In Survey Area	Avoidance Dates	Agency Comment (Appendix A)	Potential Impacts
Mussels								
<i>Epioblasma torulosa rangiana</i>	Northern riffle shell	Endangered	Endangered	Perennial streams	No*	N/A	ODNR - 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.	No- Suitable habitat is not present within the project area and no-in-water work is proposed
<i>Epioblasma triquetra</i>	Snuffbox	Endangered	Endangered	Perennial streams	No*	N/A		
<i>Pleurobema clava</i>	Club shell	Endangered	Endangered	Perennial streams	No*	N/A		
<i>Villosa fabalis</i>	Rayed bean	Endangered	Endangered	Perennial streams	No*	N/A		
<i>Theliderma cylindrica</i>	Rabbitsfoot	N/A	Threatened	Perennial streams	No*	N/A		
<i>Elliptio crassidens</i>	Elephant-ear	Endangered	N/A	Perennial streams	No*	N/A		
<i>Simpsonaias ambigua</i>	Salamander Mussel	Threatened	N/A	Perennial streams	No*	N/A		

**No perennial streams observed on-SITE*

Fishes								
<i>Etheostoma maculatum</i>	Spotted darter	Endangered	N/A	Perennial streams	No*	15 March to 30 June	ODNR - Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.	No- Suitable habitat is not present within the project area and no-in-water work is proposed

Birds								
<i>Circus hudsonis</i>	Northern harrier	Endangered	N/A	Common migrant and winter species. Nesters occasionally breed in large marshes and grasslands. Hunt over grasslands.	No suitable habitat was observed at the site.	15 April to 31 July	ODNR – If habitat will be impacted, construction should be avoided during this species' nesting period of 15 April to 31 July. If this habitat will not be impacted, this project is not likely to impact this species.	No- Suitable habitat is not present within the project area.

Mammals								
<i>Myotis lucifugus</i>	Little brown bat	Endangered	N/A	During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees	No suitable habitat was observed at the SITE.	1 April to 30 September	ODNR - Cutting of trees is recommended between 1 October and 31 March. Summer surveys are not sufficient to confirm absence of listed bat species for this project. If a habitat assessment finds that potential hibernacula are present within 0.25 mile of the project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the Division of Wildlife (DOW) recommends a 0.25-mile tree cutting and subsurface disturbance buffer around	No - Impacts are avoided with winter tree clearing. Because presence/absence surveys are not acceptable for this project, tree clearing must occur within the winter clearing window.
<i>Myotis septentrionalis</i>	Northern long-eared bat	Endangered	Threatened					
<i>Myotis sodalis</i>	Indiana bat	Endangered	Endangered					
<i>Perimyotis subflavus</i>	Tricolored bat	Endangered	N/A					

							the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.	
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Chapter 4 Site Reconnaissance

4.1 Methodology

V3 conducted a field investigation at the SITE on April 9, 2026. During this investigation, V3 noted the presumed land use of the SITE and surrounding area and evaluated the SITE for the potential presence of wetlands, “Waters of the U.S.,” and natural resources using the findings of the desktop review and field observations. Photographs were taken during the field investigation and are provided in **Appendix B**. Portions of the SITE were observed to be in active construction. These areas were not traversed. Rather, they were visually inspected from adjacent areas and were observed to be graded with ongoing excavation. No wetlands, streams, ETR species habitat, or other sensitive features were observed (**Figure 4**).

V3 used the Routine Determination Method (RDM) with an established baseline and transects as described in the 1987 Manual for typical sites over five acres. V3 recorded data from a number of data points (DP) along the transect as a function of diversity of vegetation, property size, soil types, habitat variability, and other SITE features as deemed appropriate by V3. Where evidence of a wetland was suspected, three wetland criteria were applied to determine if the area in question was representative of a wetland using the methodology set forth by USACE. More specifically, V3 visually examined and recorded the dominant vegetation, recorded soil properties such as texture and color using the Munsell Soil Color Chart (Munsell Color Chart), excavated soil pits, and evaluated the primary and secondary hydrologic indicators.

If all three criteria were met, i.e. vegetation, soil properties, and hydrologic indicators, a second DP was established adjacent to the wetland DP in an area outside of the presumed wetland boundary for the purpose of delineating between the wetland and non-wetland areas. Once delineated, V3 continued the RDM to evaluate the remainder of the SITE.

4.2 Site and Adjacent Property Land Use

The 24.4-acre SITE consists of agricultural land with ongoing utility-related disturbance, including graded surfaces and areas of active construction (some of which were not accessible for detailed field evaluation), roadside ditches, and a narrow intermittent stream. Adjacent land use consists of similar agricultural fields with scattered rural residencies, roadways, and utility infrastructure.

4.3 Wetland Summary

One wetland (WL-A-PEM) was identified during this investigation based upon the methodology set forth in the 1987 *Manual* and the *Midwest Regional Supplement*. Information that V3 collected at each DP on April 22, 2026 is described in the following section. This information is summarized on the forms provided in **Appendices C and D**. An overall SITE delineation map showing placement of the DPs is included as **Figure 4**.

4.3.1 WL-A-PEM– (0.01-acre PEM on-SITE)

WL-A-PEM is located in the northwestern portion of the SITE and consists of 0.01 acre of palustrine emergent wetland (PEM). WL-A-PEM abuts ST-1-INT (Opossum Run), a federally jurisdictional Water of the U.S., and, as such, would likely be considered jurisdictional and subject to regulation by the USACE and the OEPA.

DP A1

This DP was collected in the northern portion of WL-A-PEM. All three criteria were met which qualifies this area as a wetland. The dominant vegetation for each stratum present consisted of Reed canary grass (*Phalaris arundinacea*, FACW, 90%). The soil profile met the iron monosulfide (A18) indicator for hydric soil. Evidence of wetland hydrology included high water table (A2), saturation (A3), geomorphic position (D2) and FAC-Neutral Test (D5).

DP A2

This DP was collected in the upland area adjacent to DP A1. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of downy brome (*Bromus tectorum*, UPL, 75%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

4.4 Data Point Summary

Below is a description of the information collected at each additional DP during the April 22, 2026, field investigation that was not associated with an identified wetland area. The purpose of collecting these DPs was to describe the remaining characteristics of the SITE. Information that was collected at each DP is summarized on the forms provided in **Appendix C**. Their placement is depicted in **Figure 4**.

DP 1

This DP was collected in the western portion of the SITE. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of downy brome (*Bromus tectorum*, UPL, 85%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 2

This DP was collected in the south-central portion of the SITE. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of Virginia pepperweed (*Lepidium virginicum*, UPL, 30%) and Carolina foxtail (*Alopecurus carolinianus*, FACW, 30%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 3

This DP was collected in the southeastern portion of the SITE. This area met vegetation criterion but did not meet soil and hydrology wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of reed canary grass (FACW 100%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 4

This DP was collected in the central portion of the SITE. This area met vegetation criterion but did not meet soil and hydrology wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of reed canary grass (FACW 100%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 5

This DP was collected in the north-central portion of the SITE. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of field brome (*Bromus arvensis*, UPL, 40%) and meadow foxtail (FACW, 25%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 6

This DP was collected in the central-eastern portion of the SITE. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of wild parsnip (*Pastinaca sativa*, UPL, 60%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

DP 7

This DP was collected in the eastern portion of the SITE. This area did not meet any wetland criteria. Since all three criteria were not met, this area does not qualify as a wetland. The dominant vegetation for each stratum present consisted of field brome (FACU, 50%). No indicators of hydric soils were observed. No indicators of wetland hydrology were observed.

Table 4: Delineated Wetlands Identified within the Survey Area

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM	
	Latitude	Longitude				Score	Category
WL-A-PEM	39.834289°	-83.251284°	No	PEM	0.01	16	1

4.5 Drainage Features, Streams, and Other Potential “Waters of the U.S.”

One stream and two road ditches were identified during this investigation using the methods described in Chapter 2. Information that V3 collected at each feature on April 22, 2026, is described in the following section. An overall SITE delineation map is included as **Figure 4**.

4.5.1 ST-1-INT – (1631-linear feet, Intermittent)

ST-1-INT (Opossum Run) is located in the central portion of the SITE and consisted of 1631 linear feet of intermittent stream within the SITE. The substrate of ST-1-INT consisted of silt and gravel. ST-1-INT has an average width at the OHWM of 5 feet within the SITE. ST-1-INT exhibited an OHWM and will likely qualify as federally jurisdictional “Waters of the U.S.” subject to USACE and OEPA authority.

4.5.2 Road Ditch-1

Road Ditch-1 (Ditch -1) is located along northwestern margin of Lily Chapel Opossum Road and consists of approximately 159 LF of a linear, anthropogenic drainage feature within the SITE, conveying runoff from the adjacent road surface and surrounding fields. The Ditch-1 is shallow feature maintained through routine grading. The substrate appeared to consist of fine-grained sediments (silt and clay), and no indicators of OHWM were identified.

Based on observed conditions, Ditch-1 is a roadside ditch excavated wholly in and drying only dry land that do not carry a relatively permanent flow of water ”therefore, it is consistent with exclusion under 40 CFR § 120.2(b)(3) and is not anticipated to qualify as a federally jurisdictional “Water of the U.S.”

4.5.3 Road Ditch-2

Road Ditch-2 (Ditch-2) is located along southwestern margin of Lily Chapel Opossum Road and consists of approximately 435 LF of a linear, anthropogenic drainage feature within the SITE, conveying runoff from the

adjacent road surface and surrounding fields. The Ditch-2 is shallow feature maintained through routine grading. The substrate is inferred to consist of fine-grained sediments (silt and clay), and no indicators of OHWM were identified.

Based on observed conditions, Ditch-2 is a roadside ditch excavated wholly in and drying only dry land that do not carry a relatively permanent flow of water "therefore, it is consistent with exclusion under 40 CFR § 120.2(b)(3) and is not anticipated to qualify as a federally jurisdictional "Water of the U.S."

4.5.4 Road Ditch-3.

Road Ditch-3 (Ditch-3) is located along southwestern margin of Lily Chapel Opossum Road and consists of approximately 433 LF of a linear, anthropogenic drainage feature within the SITE, conveying runoff from the adjacent road surface and surrounding fields. The Ditch-3 is shallow feature maintained through routine grading. The substrate appeared to consist of fine-grained sediments (silt and clay), and no indicators of OHWM were identified.

Based on observed conditions, Ditch-3 is a roadside ditch excavated wholly in and drying only dry land that do not carry a relatively permanent flow of water "therefore, it is consistent with exclusion under 40 CFR § 120.2(b)(3) and is not anticipated to qualify as a federally jurisdictional "Water of the U.S."

Table 5: Delineated Stream Identified within the Survey Area

Feature	Location		Stream Type	Delineated Length (LF)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			OEPA 401 Eligibility
	Latitude	Longitude					Method	Score	Category / Rating / OAC Designation	
ST-1-INT	39.83302°	-83.24728°	Intermittent	±1631 LF	10	5	QHEI	32	Poor	Eligible

Chapter 5 Conclusions

On April 22, 2026, V3 performed a wetland delineation of the SITE located in the Big Plain and Harrisburg, Ohio USGS 7.5-Minute Quadrangle Map, Ohio. Portions of the SITE were observed to be in active construction. These areas were not traversed. Rather, they were visually inspected from adjacent areas and were observed to be graded with ongoing excavation. No wetlands, streams, ETR species habitat, or other sensitive features were observed at this portion of the SITE (see **Figure 4**).

Table 6: Aquatic Features Identified On-SITE

Feature Name	Feature Type	Size On-SITE	Anticipated Regulatory Status
WL-A-PEM	Emergent Wetland	0.01 ac	USACE/ OEPA
ST-1-INT	Intermittent Stream	1631 LF	USACE/ OEPA
Road Ditch-1	Road Ditch	159 LF	Not regulated
Road Ditch-2	Road Ditch	435 LF	Not regulated
Road Ditch-3	Road Ditch	433 LF	Not regulated

One stream was identified at the SITE. ST-1-INT is likely to be considered “Waters of the U.S.” and subject to regulation by the Ohio Environmental Protection Agency (OEPA) and U.S. Army Corps of Engineers (USACE).

One wetland was identified at the SITE. WL-A-PEM appears to exhibit hydrologic connection to federally jurisdictional “Waters of the U.S.” and as such, would likely be subject to regulation by the Ohio Environmental Protection Agency (OEPA) and U.S. Army Corps of Engineers (USACE).

Based on review of correspondence from the U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR), as well as desktop and field evaluations, the following species-specific determinations are provided:

- **Indiana bat, northern long-eared bat, little brown bat, and tricolored bat**– No suitable summer roost habitat (e.g., forested areas with trees ≥3 inches DBH exhibiting exfoliating bark, cracks, or cavities) or winter hibernacula (e.g., caves, mines, or karst features) were identified within or near the SITE. The SITE consists primarily of maintained and disturbed conditions and contains only a few isolated trees that lack features suitable for roosting. The ODNR recommends conducting tree clearing between October 1 and March 31 to avoid potential impacts to roosting bats. Provided that any tree clearing is conducted within this seasonal window, impacts to these species are not anticipated. Therefore, no additional surveys are warranted.

- **Bald eagle**– Desktop review of ODNR nest mapping and field observations confirmed no nests within 0.5 mile of the SITE, and no suitable nesting structures were observed. Therefore, impacts are not anticipated and no additional coordination or surveys are required.

- **Spotted darter**– associated with clear, moderate- to high-velocity perennial streams with clean gravel and cobble substrates. The ODNR recommends avoiding in-water work in perennial streams from March 15 through June 30 to protect this species. No in-water work is proposed for the project. In addition, the stream within the SITE is intermittent and received an HHEI score of 53, indicating moderate habitat quality but not the stable, perennial, moderate- to fast-flowing conditions required by the species. Intermittent flow conditions and associated habitat

characteristics are not suitable for the spotted darter. Therefore, impacts to the species are not anticipated, and no additional surveys are warranted.

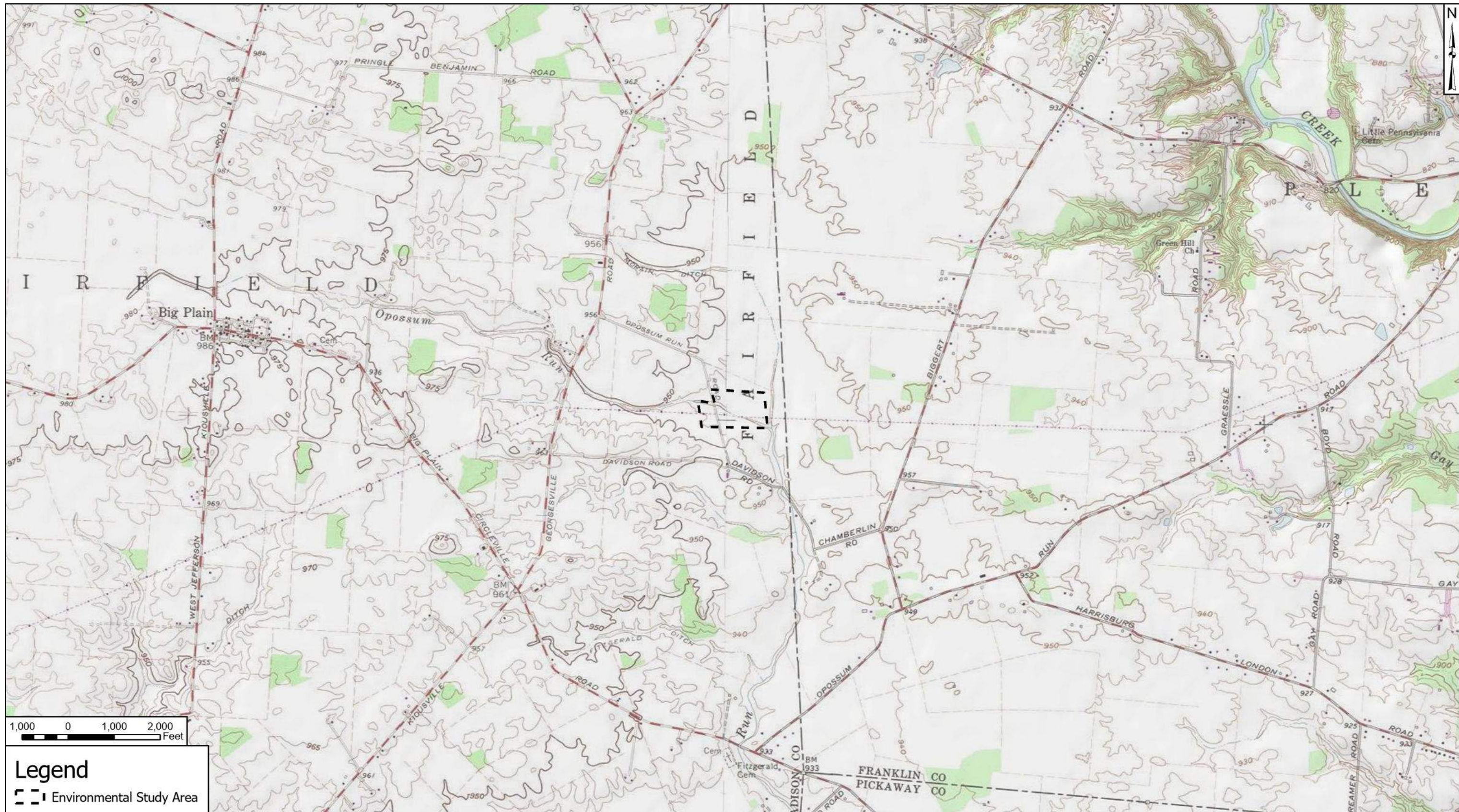
- **Northern harrier**– Suitable nesting habitat (large, contiguous marsh or grassland systems) is not present within the SITE. ODNR recommends avoiding construction during the nesting season (April 15 through July 31) only if such habitat is impacted. As suitable habitat is absent, impacts are not anticipated and no additional surveys are required.

- **Northern riffleshell, Snuffbox, Clubshell, Rayed bean, Rabbitsfoot, Elephantear, and Salamander mussel** – These species are associated with perennial streams and rivers with stable substrates and consistent flow. ODNR indicated that, due to the project location and lack of in-water work within a perennial stream of sufficient size, the project is not likely to impact these species. The stream within the SITE is intermittent and does not provide suitable habitat conditions. In addition, no in-water work is proposed. Therefore, impacts to these species are not anticipated, and no additional surveys are warranted.

- **Monarch butterfly**– The SITE lacks significant milkweed populations and high-quality pollinator habitat. The maintained and disturbed nature of the SITE limits habitat suitability. Therefore, impacts are not anticipated and no additional surveys are required.

Figures

V3



1,000 0 1,000 2,000 Feet

Legend
Environmental Study Area

 V3 Companies 550 Polaris Parkway Suite 250 Westerville, OH 43082 614.761.1661 phone www.v3co.com Go beyond limits	PROJECT NO.: 221294.004	CLIENT: American Electric Power 8600 Smiths Mill Road New Albany, Ohio 43054	SITE: Big Plain Cut-in IPP Project Madison County, Ohio	TITLE: PROJECT LOCATION MAP	FIGURE: 1
	CREATED BY: AIM				
	DATE: 04/27/2026	BASE LAYER: USGS Topographic Map Big Plain and Harrisburg, Ohio Quadrangles			
	SCALE: 1:24,000				



Legend

Environmental Study Area

0.25 Mile Radius

No potential bat hibernacula such as karst features or known mine openings were identified within 0.25 mile.

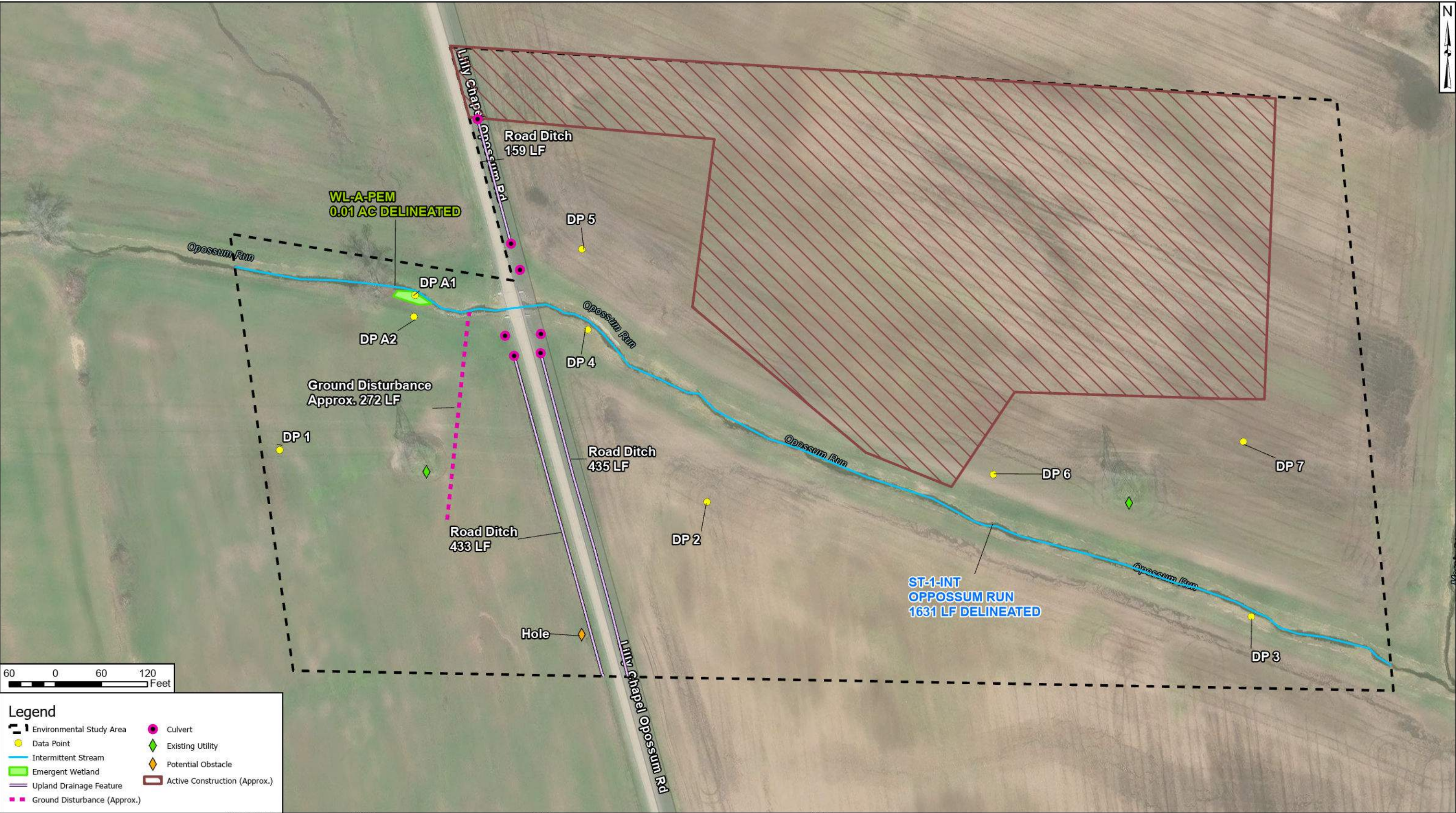
 V3 Companies 550 Polaris Parkway Suite 250 Westerville, OH 43082 614.761.1661 phone www.v3co.com	PROJECT NO.: 221294.004		CLIENT: American Electric Power 8600 Smiths Mill Road New Albany, Ohio 43054	SITE: Big Plain Cut-in IPP Project Madison County, Ohio	TITLE: BAT HIBERNACULA DESKTOP STUDY MAP	FIGURE: 1A
	CREATED BY: AIM					
	DATE: 04/27/2026		BASE LAYER: USGS Topographic Map Big Plain and Harrisburg, Ohio Quadrangles			
	SCALE: 1:5,237					
Go beyond limits						



Legend

- Environmental Study Area
- Hydric Soils of Ohio

 V3 Companies 550 Polaris Parkway Suite 250 Westerville, OH 43082 614.761.1661 phone www.v3co.com	PROJECT NO.: 221294.004		CLIENT: American Electric Power 8600 Smiths Mill Road New Albany, Ohio 43054	SITE: Big Plain Cut-in IPP Project Madison County, Ohio	TITLE: SOIL SURVEY OF OHIO MAP	FIGURE: 3
	CREATED BY: AIM					
	DATE: 04/28/2026		BASE LAYER: ESRI Aerial Imagery (2025)			
	SCALE: 1:2,400					
Go beyond limits						



Legend

Environmental Study Area	Culvert
Data Point	Existing Utility
Intermittent Stream	Potential Obstacle
Emergent Wetland	Active Construction (Approx.)
Upland Drainage Feature	Ground Disturbance (Approx.)

 V3 Companies 550 Polaris Parkway Suite 250 Westerville, OH 43082 614.761.1661 phone www.v3co.com Go beyond limits	PROJECT NO.: 221294.004	CLIENT: American Electric Power 8600 Smiths Mill Road New Albany, Ohio 43054 BASE LAYER: ESRI Aerial Imagery (2025)	SITE: Big Plain Cut-in IPP Project Madison County, Ohio	TITLE: DELINEATION MAP	FIGURE: 4
	CREATED BY: AIM				
	DATE: 05/04/2026				
	SCALE: 1:1,440				

Appendix A

ETR Species Correspondence Letters

V3



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ohio Ecological Services Field Office

4625 Morse Road, Suite 104

Columbus, OH 43230-8355

Phone: (614) 416-8993 Fax: (614) 416-8994



In Reply Refer To:

03/16/2026 12:20:38 UTC

Project Code: 2026-0062800

Project Name: V3, AEP, Big Plains IPP Cut-in, Madison County, Ohio

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Requests for additional technical assistance or consultation from the Ohio Field Office should be submitted following guidance on the following page <https://www.fws.gov/office/ohio-ecological-services/request-project-review>. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ohio Ecological Services Field Office

4625 Morse Road, Suite 104

Columbus, OH 43230-8355

(614) 416-8993

PROJECT SUMMARY

Project Code: 2026-0062800
Project Name: V3, AEP, Big Plains IPP Cut-in, Madison County, Ohio
Project Type: Transmission Line - Maintenance/Modification - Above Ground
Project Description: AEP proposes to construct a 138 kV cut-in along the Beatty-Greene transmission line to energize a new Big Plains Station within an approximately 24-acre study area. The project is expected to start construction in 2026.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.8336456,-83.24941112248159,14z>



Counties: Madison County, Ohio

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Salamander Mussel <i>Simpsonaias ambigua</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

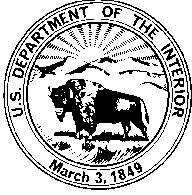
IPAC USER CONTACT INFORMATION

Agency: Ohio Power Siting Board
Name: Aaron Geckle
Address: 312 Walnut Street
Address Line 2: Suite 1600
City: Cincinnati
State: OH
Zip: 45202
Email: ageckle@v3co.com
Phone: 5138003622

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Ohio Power Siting Board

United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994



March 19, 2026

Project Code: 2026-0062800

Dear Mr. Geckle:

The U.S. Fish and Wildlife Service (Service) 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 effects 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: Due to the project, type, size, and location, we do not anticipate any effect to federally endangered, threatened, or proposed species or proposed or designated critical habitat. If there are any project modifications during the term of this action, or additional information for listed or proposed species or their critical habitat becomes available, or if new information reveals effects of the action that were not previously considered, then please contact us for additional project review.

Bald Eagle: The project is in the range of the bald eagle (*Haliaeetus leucocephalus*), which is protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d). We recommend that you visit <https://ohiodnr.gov/discover-and-learn/animals/birds/bald-eagle> to determine if the project is within 0.5 mile of a documented eagle nest. Additionally, because not all eagle nests in the state have been mapped, we recommend that an on-site examination be conducted to determine if any large stick nests are visible from project area. If the project is within 0.5 mile of a documented eagle nest or the on-site examination reveals the presence of a potential eagle nest, we recommend visiting <https://www.fws.gov/story/do-i-need-eagle-take-permit> to determine if an eagle take permit is required.

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,

Erin Knoll
Field Office Supervisor



**Department of
Natural Resources**
ohiodnr.gov

Mike DeWine, Governor
Jim Tressel, Lt. Governor
Mary Mertz, Director

Office of Real Estate & Land Management

Tara Paciorek - Chief
2045 Morse Road – E-2
Columbus, Ohio 43229-6693

April 6, 2026

Aaron Geckle
V3 Companies
312 Walnut Street, Suite 1600
Cincinnati, Ohio 45202

Re: 26-0472_Big Plains Cut-in IPP

Project: The proposed project involves constructing a new 345 kV cut-in of the Beatty-Greene transmission line that will extend to the proposed Big Plains Station to interconnect the solar generation facility.

Location: The proposed project is located in Pleasant Township, Franklin County and Fairfield Township, Madison County, Ohio.

Center Coordinates: (39.8346, -83.2491)

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: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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 project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. Because presence of state endangered bat species has been established in the area, summer tree clearing is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree clearing inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in clusters of dead leaves on tree limbs. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree and/or tree limb clearing 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 a Diameter Breast Height (DBH) $\geq 20''$ if possible.

For every project, the DOW also recommends that a winter bat habitat assessment is conducted to determine if potential hibernacula are present within the project area. This is to limit possible disturbances that seasonal tree clearing and/or subsurface work (e.g., trenching, blasting, etc.) may cause to hibernating bats. Potential hibernacula include rocky outcroppings, caves, and underground mines. Direction on how to conduct winter habitat assessments can be found in the joint guidance [OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE \(OH-FIELD OFFICE\) JOINT GUIDANCE FOR BAT SURVEYS](#). If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile permanent tree clearing buffer around the hibernaculum entrance. Limited summer or winter tree clearing may be acceptable after consultation with the DOW. If a habitat assessment for projects involving subsurface disturbance finds that a potential hibernaculum is present within 5 miles of the project area, please consult with Eileen Wyza for project recommendations. If no tree clearing 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

clubshell (*Pleurobema clava*)

rayed bean (*Villosa fabalis*)

Northern riffleshell (*Epioblasma torulosa rangiana*)

snuffbox (*Epioblasma triquetra*)

Federally Threatened

rabbitsfoot (*Theliderma cylindrica*)

State Endangered

elephant-ear (*Elliptio crassidens crassidens*)

State Threatened

Salamander Mussel (*Simpsonaias ambigua*)

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

spotted darter (*Etheostoma maculatum*)

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

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species.

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

Water Resources: The Division of Water Resources has not conducted a project specific review and/or comments, however, the guidance provided below should be reviewed by the Environmental Review applicant for applicability on this project and subsequent compliance.

If the subject project is in a floodplain regulated by the Federal Emergency Management Agency (FEMA), the [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals. The FEMA National Flood Hazard Layer (NHFL) Viewer [website](#) can be utilized to see if the project is in a FEMA regulated floodplain. If the project is not in a FEMA regulated floodplain, then no further action is required.

Ohio Revised Code (ORC) Section 1521.16 mandates that any owner of a property or a facility that has the capacity of withdrawing 100,000 gallons per day (gpd) of water from groundwater, surface water, or both must register with the Division of Water Resources' [Water Withdrawal Facilities Registration \(WWFR\) Program](#) and report their withdrawals annually.

Additional coordination may be required depending on the location of the withdrawal and consumptive use. Permitting may be required for:

- New or increased consumptive use of water averaging 2 million gallons per day (mgd) within 30 days within the Ohio River basin.
- New or increased withdrawal and consumptive water use in the Lake Erie watershed averaging 1 million gallons per day (mgd) or more in 90 days.
- New or increased water withdrawal directly from Lake Erie averaging 2.5 million gallons per day (mgd) or more in 90 days.
- Diversion or movement of water across the Ohio River and Lake Erie basin divide.

If the project does not involve activities that are subject to water withdrawal regulatory requirements as described above, then no further action is required. For more information, visit the [Water Inventory & Planning website](#).

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew (Environmental Services Administrator) at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Expiration: ODNR Environmental Reviews are typically valid for 2 years from the issuance date. If the scope of work, project area, construction limits, and/or anticipated impacts to natural resources have changed significantly from the original project submittal, then a new Environmental Review request should be submitted.

Appendix B

SITE Photographs

V3

Project Name: Big Plain Cut-In IPP Project

Site Photographs



Photo 1

ST-1-INT



Photo 2

ST-1-INT



Photo 3

WL-A-PEM

Wetland



Photo 4

WL-A-PEM

Wetland



Photo 5

WL-A-PEM

Wetland



Photo 6

WL-A-PEM

Wetland



Photo 7

Road Ditch

Upland



Photo 8

Road Ditch

Upland



Photo 9

Data Point 1

Upland



Photo 10

Data Point 2

Upland



Photo 11

Data Point 3

Upland



Photo 12

Data Point 4

Upland



Photo 13

Data Point 5

Upland



Photo 14

Data Point 6

Upland



Photo 15

Data Point 7

Upland



Photo 16

Site

Upland



Photo 17

Site

Upland



Photo 18

Site

Upland

Appendix C

Data Forms

V3

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
<u>Sapling/Shrub Stratum</u> (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Herb Stratum</u> (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<u>Woody Vine Stratum</u> (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Histic Epipedon (A2) ☐ Black Histic (A3) ☐ Hydrogen Sulfide (A4) ☐ Stratified Layers (A5) ☐ 2 cm Muck (A10) ☐ Depleted Below Dark Surface (A11) ☐ Thick Dark Surface (A12) ☐ Iron Monosulfide (A18) ☐ Sandy Mucky Mineral (S1) ☐ 5 cm Mucky Peat or Peat (S3)	☐ Sandy Gleyed Matrix (S4) ☐ Sandy Redox (S5) ☐ Stripped Matrix (S6) ☐ Dark Surface (S7) ☐ Loamy Mucky Mineral (F1) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6) ☐ Depleted Dark Surface (F7) ☐ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)
--	--	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☐
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>				<u>Secondary Indicators (minimum of two required)</u>			
☐ 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) ☐ Sparsely Vegetated Concave Surface (B8)	☐ 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) ☐ Gauge or Well Data (D9) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ FAC-Neutral Test (D5)					

Field Observations: Surface Water Present? Yes ☐ No ☐ Depth (inches): _____ Water Table Present? Yes ☐ No ☐ Depth (inches): _____ Saturation Present? Yes ☐ No ☐ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☐
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

AGENCY DISCLOSURE NOTIFICATION

The public reporting burden for this collection of information, OMB Control Number 0710-0024, is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR REQUEST TO THE ABOVE EMAIL.**

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 5 cm Mucky Peat or Peat (S3)	☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

AGENCY DISCLOSURE NOTIFICATION

The public reporting burden for this collection of information, OMB Control Number 0710-0024, is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR REQUEST TO THE ABOVE EMAIL.**

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

AGENCY DISCLOSURE NOTIFICATION

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PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: _____ Histosol (A1) _____ Histic Epipedon (A2) _____ Black Histic (A3) _____ Hydrogen Sulfide (A4) _____ Stratified Layers (A5) _____ 2 cm Muck (A10) _____ Depleted Below Dark Surface (A11) _____ Thick Dark Surface (A12) _____ Iron Monosulfide (A18) _____ Sandy Mucky Mineral (S1) _____ 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: _____ Sandy Gleyed Matrix (S4) _____ Sandy Redox (S5) _____ Stripped Matrix (S6) _____ Dark Surface (S7) _____ Loamy Mucky Mineral (F1) _____ Loamy Gleyed Matrix (F2) _____ Depleted Matrix (F3) _____ Redox Dark Surface (F6) _____ Depleted Dark Surface (F7) _____ Redox Depressions (F8) _____ Iron-Manganese Masses (F12) _____ Red Parent Material (F21) Very _____ Shallow Dark Surface (F22) _____ Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Surface Soil Cracks (B6)	
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ True Aquatic Plants (B14)	_____ Dry-Season Water Table (C2)	
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)	
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)	
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)	
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ FAC-Neutral Test (D5)	
_____ Inundation Visible on Aerial Imagery (B7)	_____ Gauge or Well Data (D9)		
_____ Sparsely Vegetated Concave Surface (B8)	_____ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
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Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
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_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ True Aquatic Plants (B14)	_____ Dry-Season Water Table (C2)	
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)	
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_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)	
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)	
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ FAC-Neutral Test (D5)	
_____ Inundation Visible on Aerial Imagery (B7)	_____ Gauge or Well Data (D9)		
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Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

AGENCY DISCLOSURE NOTIFICATION

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PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: <http://dpcl.d.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx>

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Absolute % Cover _____ _____ _____ _____ _____ _____	Dominant Species? _____ _____ _____ _____ _____ _____	Indicator Status _____ _____ _____ _____ _____ _____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	_____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	_____ _____ _____	_____ _____ _____	_____ _____ _____	
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes _____ No _____

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: ☐ Histosol (A1) ☐ Sandy Gleyed Matrix (S4) ☐ Histic Epipedon (A2) ☐ Sandy Redox (S5) ☐ Black Histic (A3) ☐ Stripped Matrix (S6) ☐ Hydrogen Sulfide (A4) ☐ Dark Surface (S7) ☐ Stratified Layers (A5) ☐ Loamy Mucky Mineral (F1) ☐ 2 cm Muck (A10) ☐ Loamy Gleyed Matrix (F2) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3) ☐ Thick Dark Surface (A12) ☐ Redox Dark Surface (F6) ☐ Iron Monosulfide (A18) ☐ Depleted Dark Surface (F7) ☐ Sandy Mucky Mineral (S1) ☐ Redox Depressions (F8) ☐ 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: ☐ Iron-Manganese Masses (F12) ☐ Red Parent Material (F21) Very ☐ Shallow Dark Surface (F22) ☐ Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes ☐ No ☐
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Stunted or Stressed Plants (D1)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Geomorphic Position (D2)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ FAC-Neutral Test (D5)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)		
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes ☐ No ☐ Depth (inches): _____ Water Table Present? Yes ☐ No ☐ Depth (inches): _____ Saturation Present? Yes ☐ No ☐ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ☐ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Midwest Region See ERDC/EL TR-10-16; the proponent agency is CECW-COR	OMB Control #: 0710-0024, Exp: 09/30/2027 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
---	--

Project/Site: _____ City/County: _____ Sampling Date: _____
Applicant/Owner: _____ State: _____ Sampling Point: _____
Investigator(s): _____ Section, Township, Range: _____
Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
Slope (%): _____ Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: _____ NWI classification: _____
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ =Total Cover	Hydrophytic Vegetation Indicators: ____ 1 - Rapid Test for Hydrophytic Vegetation ____ 2 - Dominance Test is >50% ____ 3 - Prevalence Index is ≤3.0 ¹ ____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ _____ =Total Cover	Hydrophytic Vegetation Present? Yes _____ No _____
Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: _____ Histosol (A1) _____ Histic Epipedon (A2) _____ Black Histic (A3) _____ Hydrogen Sulfide (A4) _____ Stratified Layers (A5) _____ 2 cm Muck (A10) _____ Depleted Below Dark Surface (A11) _____ Thick Dark Surface (A12) _____ Iron Monosulfide (A18) _____ Sandy Mucky Mineral (S1) _____ 5 cm Mucky Peat or Peat (S3)	_____ Sandy Gleyed Matrix (S4) _____ Sandy Redox (S5) _____ Stripped Matrix (S6) _____ Dark Surface (S7) _____ Loamy Mucky Mineral (F1) _____ Loamy Gleyed Matrix (F2) _____ Depleted Matrix (F3) _____ Redox Dark Surface (F6) _____ Depleted Dark Surface (F7) _____ Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: _____ Iron-Manganese Masses (F12) _____ Red Parent Material (F21) Very _____ Shallow Dark Surface (F22) _____ Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Surface Soil Cracks (B6)	
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ True Aquatic Plants (B14)	_____ Dry-Season Water Table (C2)	
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Crayfish Burrows (C8)	
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Stunted or Stressed Plants (D1)	
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)	
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ FAC-Neutral Test (D5)	
_____ Inundation Visible on Aerial Imagery (B7)	_____ Gauge or Well Data (D9)		
_____ Sparsely Vegetated Concave Surface (B8)	_____ Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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Appendix D

ORAM Forms

V3

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 Engagered 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
	Questions 6: Bogs	☐ YES ☒ NO	If yes, Category 3.
	Question 7: Fens	☐ YES ☒ NO	If yes, Category 3.
	Questions 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.
	Questions 9b: Lake Erie Wetlands – Restricted	☐ YES ☒ NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Questions 9d: Lake Erie Wetlands - Unrestricted	☐ YES ☒ NO	If yes, Category 3.
	Questions 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.
	Quest 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	2	
	Metric 3: Hydrology	14	
	Metric 4: Habitat	3	
	Metric 5: Special Wetland Communities	0	
	Metric 6: Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.state.oh.us/dsw/401/401.html to determine the wetland's category based on its quantitative score	16	Category based on score breakpoints

Complete Wetland Categorization Worksheet

Wetland Categorization Worksheet

Choices	Circle one		Evaluation
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 wetlands?	☒ 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. 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 an 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 under categorized by this method. A written justification for re-categorization should be provided on Background Information Form	☒ NO	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
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End of Ohio Rapid Assessment Method for Wetlands

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Site: Big Plain-WL-A-PER	Rater(s): Agnes Marchlewska	Date: 04/22/2026
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0	0
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max 6 pts. subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6pts)
- ☐ 25 to <50acrea (10.1 to <20.2ha) (5pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3pts)
- ☐ 0.3 to <3 acres (0.12 to 1.2ha) (2pts)
- ☐ .1 to <0.3acres (0.04 to <0.12ha) (1pts)
- ☒ <0.1 acres (0.04ha) (0pts)

2	2
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max 14 pts. subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50 m (164ft) or more around wetland perimeter (7pts)
 - ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4pts)
 - ☒ NARROW. Buffers average 10m to <25m (32ft < 82ft) around wetland perimeter (1pts)
 - ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7pts)
 - ☐ LOW. Old field (>10 years), shrub land, young second growth forest. (5pts)
 - ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3pts)
 - ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1pts)

14	16
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Max 30 pts. subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply
- ☐ High pH groundwater (5pts)
 - ☒ Other groundwater (3pts)
 - ☒ Precipitation (1pts)
 - ☒ Seasonal/Intermittent surface water (3pts)
 - ☐ Perennial surface water (lake or stream) (5pts)
- 3b. Connectivity. Score all that apply
- ☐ 100 year floodplain (1pts)
 - ☒ Between stream/lake and other human use (1pts)
 - ☐ Part of wetland/upland (e.g. forest), complex (1pts)
 - ☒ Part of riparian or upland corridor (1pts)
- 3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3pts)
 - ☐ 0.4 to 0.7m (15.7 to 27.6in) 2pts)
 - ☒ <0.4m (<15.7in) (1pts)
- 3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4pts)
 - ☐ Regularly inundate/saturated (3pts)
 - ☐ Seasonally inundated (2pts)
 - ☒ Seasonally saturated in upper 30cm (12in) (1pts)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☐ None or none apparent (12pts)
 - ☐ Recovered (7pts)
 - ☒ Recovering (3pts)
 - ☐ Recent or no recovery (1pts)

Check all disturbances observed

- | | |
|--|---|
| ☐ Ditch | ☐ Point source (non-storm water) |
| ☐ Tile | ☐ Filing/grading |
| ☐ Dike | ☐ Road bed/RR track |
| ☐ Weir | ☐ Dredging |
| ☐ Storm water input | ☐ Other |

3	19
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Max 20pts. Subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double-check and average.
- ☐ None or none apparent (4pts)
 - ☐ Recovered (3pts)
 - ☐ Recovered (2pts)
 - ☒ Recent or no recovery (1pts)
- 4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7pts)
 - ☐ Very good (6pts)
 - ☐ Good (5pts)
 - ☐ Moderately good (4pts)
 - ☐ Fair (3pts)
 - ☐ Poor to fair (2pts)
 - ☒ Poor (pts)
- 4c. Habitat alteration. Score one or double-check and average.
- ☐ None or none apparent (9pts)
 - ☐ Recovered (6pts)
 - ☐ Recovering (3pts)
 - ☒ Recent or no recovery (1pts)

Check all disturbances observed

- | | |
|---|---|
| ☒ Mowing | ☒ Shrub/sapling removal |
| ☐ Grazing | ☐ Herbaceous/aquatic bed removal |
| ☒ Clear-cutting | ☐ Sedimentation |
| ☐ Selective cutting | ☐ Dredging |
| ☐ Woody debris removal | ☐ Farming |
| ☐ Toxic pollutants | ☐ Nutrient enrichment |

19

Subtotal this page

19

Subtotal first page

0

19

Max 10pts

Subtotal

Metric 5. Special wetlands.

Check all that apply and score as indicated

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

-3

16

Max 20 pts.

Subtotal

Metric 6. Plant communities, interspersions, micro topography..**6a. Wetland Vegetation Communities**

Score all present using 0 to 3 scale.

- ☐ Aquatic Bed
☐ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open Water
☐ Other _____

6b. Horizontal (plan view) Interspersion

Select only one.

- ☐ High (5pts)
☐ Moderately high (4pts)
☐ Moderate (3pts)
☐ Moderately low (2pts)
☒ Low (1pts)
☐ None (0pts)

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

- ☒ Extensive >75% cover (-5pts)
☐ Moderate 25-75% cover (-3pts)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent >5% cover (0pts)
☐ Absent (1pts)

6d. Micro topography

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ 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)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Micro topography 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

16

GRAND TOTAL (max 100 pts)

Quantitative Rating

Metric 1. Wetland area (max 6pts). Estimate the area of wetland. Select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

		score
6pts	≥ 50 acres (≥ 20.2ha)	
5pts	25 - <50 acres (10.1 - <20.2ha)	
4pts	10 - <25 acres (4.0 - <10.1ha)	
3pts	3 - <10 acres (1.2 - <4.0ha)	
2pts	0.3 - <3 acres (0.12 - <1.2ha)	
1pt	0.1 - <0.3 acres (0.04 - <0.12ha)	
0pts	<0.1 acres (0.04ha)	0

Table 2. Metric to English conversion table with visual estimation sizes

acres	ft ²	yd ²	ft on side	yd on side	ha	m ²	m on side
50	2,177,983	241,998	1476	492	20.2	202,000	449
25	1,088,992	120,999	1044	348	10.1	101,000	318
10	435,596	48,340	660	220	4.1	41,000	203
3	130,679	14,520	362	121	1.2	12,000	110
0.3	13,067	1,452	114	38	0.12	1,200	35
0.1	4,356	484	66	22	0.04	400	20

Metric 2. Upland buffers and intensity of surrounding land uses. Maximum 14 points. Wetlands are systems transitional between upland and aquatic environments. Wetlands without "buffers," or that are located where human land use is more intensive, are often, but not always, more degraded.

		score
2a.	Average Buffer Width (abw). Calculate the average buffer width and select only one score. To calculate abw, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: abw of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: $abw = (50m + 25m + 10m + 0m)/4 = 21.25m$. Intensive land uses are not buffers, e.g. active row cropping, recently abandoned fields, paved areas, housing developments, unfenced pasture, etc.	1
7pts	WIDE. >50m (164ft) or more around perimeter	☐
4pts	MEDIUM. 25m to <50m (82 to <164ft) around the perimeter	☐
1pt	NARROW. 10m to <25m (32 to <82ft) around the perimeter	☒
0pts	VERY NARROW. <10m (<32ft) around perimeter.	☐
2b.	Intensity of predominant surround land use(s). Select one, or double check up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone (if any).	1
7pts	VERY LOW. 2 nd growth or older forest, prairie, savannah, wildlife area, etc.	☐
5pts	LOW. Old field (>10 yrs), shrubland, young 2 nd growth forest, etc.	☐
3pts	MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field, etc.	☐
1pt	HIGH. Urban, industrial, open pasture, row cropping, mining, construction, etc.	☒

2

Subtotal

Subtotal from previous page

Metric 3. Hydrology Maximum 30 points. **This metric evaluates the wetland's water budget, hydro period, the hydrologic connectivity of the wetland to other surface water, and the degree to which the wetland's hydrology has been altered by human activity.** A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

		score
3a. Sources of Water. Select all that apply and sum score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.		7
5pts	High pH groundwater (7.5-9.0)	☐
3pts	Other groundwater	☒
1pt	Precipitation	☒
3pts	Seasonal surface water	☒
5pts	Perennial surface water (lake or stream)	☐
3b. Connectivity. Select all that apply and sum score		2
1pt	100-year floodplain. "Floodplain is defined in OAC Rule 3745-1-50(P) as "...the relatively level land next to a stream or river channel that is periodically submerged by floodwaters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.	☐
1pt	Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses.	☒
1pt	Part of wetland or upland (e.g. forest, prairie) complex. Both this and the next question ask whether the wetland is in physical proximity to, or a part of other nearby wetland or upland natural areas. The difference is whether the area the wetland is "long and narrow" like a river, or more "suarish" like a large forest or woodlot. If the latter is the case, this question applies: if the former, the next question applies. In a few instances, both may apply.	☐
1pt	Part of riparian or upland corridor. See description above.	☒
3c. Maximum water depth. Select only one and assign score. The Rater <i>does not</i> need to actually observe the wetland when its water depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Manual will be useful in answering this question.		1
3pts	>0.7m (27.6in)	☐
2pts	0.4 to 0.7m (15.7 to 27.6in)	☐
1pt	<0.4m (<15.7in)	☒
3d. Duration of inundation/saturation. Select one or double-check and average the scores if duration is uncertain. The use of secondary indicator s is necessary and expected in order to properly answer this Question. Categories correspond to Zones II, III, and IV of 1987 Manual (Table 5). Zone IV subdivided into seasonally		1
4pts	Semi permanently to permanently inundated or saturated.	☐
3pts	Regularly inundated or saturated.	☐
2pts	Seasonally inundated.	☐
1pt	Seasonally saturated in the upper 30cm (12in) of soil.	☒

Subtotal

Subtotal from previous page

- 3e. **Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the Rater to evaluate the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

It is very important to stress that this question does not discriminate between wetlands with different types of hydrologic regime, e.g. between a forested seep wetland located on a floodplain with seasonal inundation and a leather leaf (*Chamaedaphne calyculata*) bog with precipitation and minor amounts of surface run-off from a small watershed. Rather, it asks the rater to evaluate the "intactness" of the hydrologic regime attributable to *that type of wetland*. In the example above, both the forested seep wetland and the leather leaf bog can score the maximum points (12) if they're no, or no apparent, modifications to the natural hydrologic regime.

Once the Rater has listed all possible past and ongoing disturbances, the Rater should check the most appropriate category to describe the present state of the wetland. In instances where the Rater believes that a wetland falls between two categories, or where the Rater is uncertain as to which category is appropriate, it is appropriate to "double check" and average the score.

The labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a hydrologic disturbance continuum, from very high to very low or no disturbance.

The Rater may check one or several of these possible disturbance, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

0

Check all that are observed present in or near the wetland

☐	ditch(es), in or near the wetland	☐	point source discharges to the (non-storm water)
☐	tile(s), in or near the wetland	☐	filling/grading activities in or near the wetland
☐	dike(s), in or near the wetland	☐	road beds/RR beds in or near the wetland
☐	weir(s), in or near the wetland	☐	dredging activities in or near the wetland
☐	storm water inputs (addition of water)	☐	other (specify)

Circle one answer. Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime, or have they occurred so far in the past that current hydrology should be considered to be "natural"?	YES Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance.	NO Assign a score of 12 since there are no or no apparent modifications.	NOT SURE Double check "none or none apparent" and "recovered" and assign a score of 9.5	9.5
	Select one or double check adjoining number and average the score.			
12pts	NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the Rater.			☒
7pts	RECOVERED. The wetland appears to have recovered from past modifications.			☒
3pts	RECOVERING. The wetland appears to be in the process of recovering from past modifications			☐
1pt	RECENT OR NO RECOVERY. The modifications have occurred, recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing.			☐

22.5

Subtotal

Subtotal from previous page

Metric 4. Habitat Alteration and Development. Maximum 20 points. While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. This metric attempts to evaluate these things under the rubric "habitat alteration." In many instances, items checked as possible hydrologic disturbances in Question 3e will be instead alterations to a wetland's habitat or disruptions in its development (succession state). In other instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. In any case, the Rater should carefully consider what is the actual proximate (direct) cause of the disturbance to the wetland.

4a. **Substrate/Soil Disturbance.** Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.

Examples of substrate/soil disturbance include filling and grading, plowing, grazing (hooves), vehicle use (motorbikes, off-road vehicles, construction vehicles), sedimentation, dredging, and other mechanical disturbances to the surface substrates or soils.

Circle one answer. Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils or substrates, or have they occurred so far in the past that current conditions should be considered to be "natural"?

YES ☐

Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance.

3

NO ☐

Assign a score of 4 since there are no or no apparent modifications.

NOT SURE ☒

Double check "none or none apparent" and "recovered" and assign a score of 3.5

3.5

Select one or double check adjoining number and average the score.

score

3.5

4pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the Rater.

☒

3pts RECOVERED. The wetland appears to have recovered from past modifications.

☒

2pts RECOVERING. The wetland appears to be in the process of recovering from past modifications

☐

1pt RECENT OR NO RECOVERY. The modifications have occurred, recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing.

☐

4b. **Habitat development.** Select only one and assign score. This question asks the Rater to assign an overall qualitative rating of how well developed the wetland is in comparison to other ecologically or hydrogeomorphically similar wetlands. This question presumes a good sense of the types of wetlands and the range in quality typical of the region, watershed, or state.

1

7pts EXCELLENT. Wetland appears to represent the best of its type or class.

☐

6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics, which would make it excellent.

☐

5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.

☐

4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.

☐

3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.

☐

2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.

☐

1pt POOR. Wetland appears to not be a good example of its type or class because of past or present disturbances, successional state, etc.

☒

Subtotal

Subtotal from previous page

- 4c. **Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify a possible alteration. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. In some instances, the scores can be viewed as a habitat alteration continuum, from very high to very low or no disturbance. **The Rater may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.**

Check all that are observed present in or near the wetland

☒	Mowing	☐	Herbaceous layer/aquatic bed removal
☐	Grazing (cattle, sheep, pigs, etc.)	☐	Sedimentation
☒	Clear cutting	☐	Dredging
☐	Selective cutting	☐	Farming
☐	Woody debris removal	☐	Nutrient enrichment, e.g. nuisance algae
☐	Toxic pollutants	☐	Other (specify)
☒	Shrub/sapling removal	☐	Other (specify)

Circle one answer. Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime, or have they occurred so far in the past that current hydrology should be considered to be "natural"?	YES Assign a score 1, 3 or 6, or an intermediate score, depending on degree of recovery from the disturbance.	NO Assign a score of 9 since there are no or no apparent modifications.	NOT SURE Double check "none or none apparent" and "recovered" and assign a score of 7.5
	1		

Select one or double check adjoining number and average the score.			score 1
9pts	NONE OR NONE APPARENT. There are no alterations or no alterations that are apparent to the Rater.	☐	
6pts	RECOVERED. The wetland appears to have recovered from past alterations.	☐	
3pts	RECOVERING. The wetland appears to be in the process of recovering from past alterations/	☐	
1pt	RECENT OR NO RECOVERY. The alterations/ have occurred, recently occurred, and/or the wetland has not recovered from past alterations/, and/or the alterations/ are ongoing.	☒	

Metric 5. Special wetland communities. Maximum 10 points. Assign or deduct points if wetland has the feature described. Refer to Narrative Rating for guidance. No wetland can receive more than 10 points even if multiple categories are applicable.

☐	Bog (10pts)	☐	Lake plains sand prairies (Oak Openings) (10 pts)
☐	Fen (10 pts)	☐	Relict wet prairies (10 pts)
☐	Old Growth Forest (10 pts)	☐	Known occurrence of threatened/endangered species (10pts)
☐	Mature Forested Wetland (5 pts)	☐	Significant migratory songbird/waterfowl habitat (10 pts)
☐	Coastal wetlands, unrestricted hydrology (10 pts)	☐	Category 1 wetlands (See Narrative Rating #5) (-10 pts)
☐	Coastal wetlands, restricted hydrology (5 pts)		

Subtotal

Subtotal from previous page

Metric 6. Vegetation, Interspersion, and Microtopography. Maximum 20 points.

6a. Wetland Vegetation Communities. Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 100m ² (0.2471 acres). Assign a score of 0 to 3 using Tables 3, Table 4 or Table 5. Sum the scores for the classes present.		0
☐	Aquatic Bed. Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed (<i>Lemna</i> spp., <i>spirodelaspp.</i>) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.	0
☒	Emergent. Includes areas of wetland dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, fens, prairie pothole, and bluejoint slough.	1
☐	Shrub. Includes areas of wetlands dominated by woody vegetation less than 6m (20ft) tall. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.	0
☐	Forested. Includes wetlands or areas of wetlands characterized by wood vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are defined as "vernal pools" in OAC Rule 3745-1-50.	0
☐	Open water. The "open water" class is equivalent to the "unconsolidated bottom/mud" class/subclass (pub ₃) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.	0
☐	Other (See User's Manual)	0

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 6 for narrative descriptions of what "low," "moderate," and "high" quality mean.

Cover scale	Description
0	the vegetation community is either, 1) absent from wetland, or 2) comprises less than 0.1ha (0.2471 acres) of contiguous area within the wetland
1	vegetation community is present and either, 1) comprises a small part of the wetland's vegetation and is of low or moderate quality, or 2) if it comprises a significant part of the wetland's vegetation, the community is of low quality
2	the vegetation community is present and either, 1) comprises a significant part of the wetland's vegetation and is of moderate quality, or 2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality.
3	the vegetation community is of high quality and comprises a significant part, or more of the wetland's vegetation

Table 4. Use this table in conjunction with Table 5 to determine what is a "low," "moderate," or "high quality community"

narrative	description
low	Low species diversity and/or a predominance of non-native or disturbance tolerant native species
moderate	Native species are the dominant component of the vegetation, although non-native or disturbance tolerant native species can also be present, and species diversity is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species.
high	A predominance of native species, with non-native species absent or virtually absent, and high species diversity and sometimes, but not always, the presence of rare, threatened or endangered species.

Table 5. Mudflat and open water community cover scale

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

Subtotal

Subtotal from previous page

6b. Horizontal (plan view) interspersions. Select only one and assign score. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1.		0
5pts	HIGH. Wetland has a high degree of interspersions	☐
4pts	MODERATELY HIGH. Wetland has a moderately high degree of interspersions	☐
3pts	MODERATE. Wetland has a moderate degree of interspersions	☐
2pts	MODERATELY LOW. Wetland has a moderately low degree of interspersions	☐
1pt	LOW. Wetland has a low degree of interspersions	☐
0pts	NONE. Wetland has no plan view interspersions	☒

6c. Coverage of Invasive Plant Species. Refer to Table 1 on Page 7 for list. Select only one and assign score.		1
-5pts	Extensive. >75% areal cover of invasive species	☒
-3pts	Moderate 25-75% areal cover of invasive species	☐
-1pt	Sparse. 5-25% areal cover of invasive species	☐
0pts	Nearly absent. <5% areal cover of invasive species	☐
1pt	Absent	☐

6d. Microtopography. Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands.		0
Vegetated hummocks and tussocks.		☐
Coarse woody debris >15cm (6in) diameter		☐
Standing dead trees >25cm (10in) diameter at breast height		☐
Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for from reproduction		☐

Table 6. Cover scale for microtopographic habitat features.

Microtopographic habitat quality	narrative description
0	Feature is absent or functionally absent from the wetland
1	Feature is present in the wetland in very small amounts or if more common, of low quality
2	Feature is 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

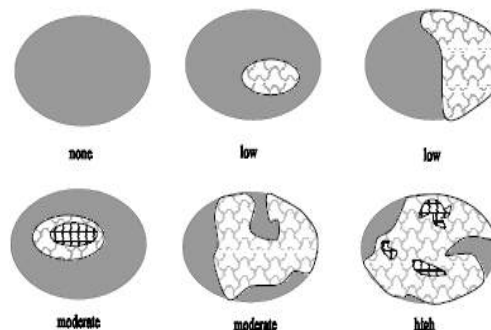


Figure 1. Hypothetical wetlands for estimating degree of interspersions.

GRAND TOTAL

End of Quantitative Rating. Complete Categorization Worksheets.

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>

Appendix E

QHEI Form

V3

Stream & Location: _____ RM: ____ Date: ____/____/____

Scorers Full Name & Affiliation: _____

River Code: ____ - ____ - ____ STORET #: ____ Lat./ Long.: ____ (NAD 83 - decimal °) ____ . ____ Office verified location ☐**1] SUBSTRATE** Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
☐ BLDR /SLABS [10]	☐ POOL	☐ HARDPAN [4]	☐ POOL	☐ LIMESTONE [1]	☐ SILT	☐ HEAVY [-2]	Substrate Maximum 20
☐ BOULDER [9]	☐ RIFFLE	☐ DETRITUS [3]	☐ RIFFLE	☐ TILLS [1]	☐ SANDSTONE [0]	☐ MODERATE [-1]	
☐ COBBLE [8]		☐ MUCK [2]		☐ WETLANDS [0]	☐ RIP/RAP [0]	☐ NORMAL [0]	
☐ GRAVEL [7]		☐ SILT [2]		☐ HARDPAN [0]	☐ LACUSTURINE [0]	☐ FREE [1]	
☐ SAND [6]		☐ ARTIFICIAL [0]		☐ SANDSTONE [0]	☐ SHALE [-1]	☐ EXTENSIVE [-2]	
☐ BEDROCK [5]				☐ RIP/RAP [0]	☐ COAL FINES [-2]	☐ MODERATE [-1]	
						☐ NORMAL [0]	
						☐ NONE [1]	

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☐ 3 or less [0]

Comments _____

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.**AMOUNT**

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☐ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☐ MODERATE 25-75% [7]
☐ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☐ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments _____

Cover
Maximum
20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments _____

Channel
Maximum
20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY			
☐ L ☐ R ☐ NONE / LITTLE [3]	☐ L ☐ R ☐ WIDE > 50m [4]	☐ L ☐ R ☐ FOREST, SWAMP [3]	☐ L ☐ R ☐ CONSERVATION TILLAGE [1]				
☐ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]	☐ URBAN OR INDUSTRIAL [0]				
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ MINING / CONSTRUCTION [0]				
	☐ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]					
	☐ NONE [0]	☐ OPEN PASTURE, ROWCROP [0]					

Comments _____

Indicate predominant land use(s)
past 100m riparian. Riparian
Maximum
10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY**MAXIMUM DEPTH**

Check ONE (ONLY!)

- ☐ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

- ☐ TORRENTIAL [-1] ☐ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments _____

Pool /
Current
Maximum
12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments _____

Riffle /
Run
Maximum
8

6] GRADIENT (

ft/mi)

DRAINAGE AREA(mi²)

- ☐ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient
Maximum
10

A] SAMPLED REACH

Check ALL that apply

METHOD

☐ BOAT
☐ WADE
☐ L. LINE
☐ OTHER

STAGE

1st-sample pass- 2nd

☐ HIGH
☐ UP
☐ NORMAL
☐ LOW
☐ DRY

☐
☐
☐
☐

DISTANCE

☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER

meters

CANOPY

☐ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSED

CLARITY

1st --sample pass-- 2nd

☐ < 20 cm
☐ 20-<40 cm
☐ 40-70 cm
☐ > 70 cm/ CTB
☐ SECCHI DEPTH

☐
☐
☐
☐
☐

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

B] AESTHETICS

☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

D] MAINTENANCE

☐ PUBLIC / PRIVATE / BOTH / NA
☐ ACTIVE / HISTORIC / BOTH / NA
☐ YOUNG-SUCCESSION-OLD
☐ SPRAY / SNAG / REMOVED
☐ MODIFIED / DIPPED OUT / NA
☐ LEVEED / ONE SIDED
☐ RELOCATED / CUTOFFS
☐ MOVING-BEDLOAD-STABLE
☐ ARMoured / SLUMPS
☐ ISLANDS / SCoured
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

E] ISSUES

☐ WWTP / CSO / NPDES / INDUSTRY
☐ HARDENED / URBAN / DIRT&GRIME
☐ CONTAMINATED / LANDFILL
☐ BMPs-CONSTRUCTION-SEDIMENT
☐ LOGGING / IRRIGATION / COOLING
☐ BANK / EROSION / SURFACE
☐ FALSE BANK / MANURE / LAGOON
☐ WASH H₂O / TILE / H₂O TABLE
☐ ACID / MINE / QUARRY / FLOW
☐ NATURAL / WETLAND / STAGNANT
☐ PARK / GOLF / LAWN / HOME
☐ ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

☐ $\bar{x}$ width
☐ $\bar{x}$ depth
☐ max. depth
☐ $\bar{x}$ bankfull width
☐ bankfull $\bar{x}$ depth
☐ W/D ratio
☐ bankfull max. depth
☐ floodprone x² width
☐ entrench. ratio

Legacy Tree:

Stream Drawing:

