

# Letter of Notification for the Vassell - Curleys 345 kV Transmission Line Adjustment #3 Project



An **AEP** Company

BOUNDLESS ENERGY™

PUCO Case No. 26-0433-EL-BLN

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

Submitted by:  
AEP Ohio Transmission Company, Inc.

April 23, 2026

**LETTER OF NOTIFICATION FOR THE VASSELL – CURLEYS 345 KV TRANSMISSION LINE  
ADJUSTMENT #3 PROJECT**

**LETTER OF NOTIFICATION**

**AEP Ohio Transmission Company, Inc.**

**Vassell – Curleys 345 kV Transmission Line Adjustment #3 Project**

**4906-6-05 Accelerated Application Requirements**

AEP Ohio Transmission Company, Inc. (the “Company”) provides the following information to the Ohio Power Siting Board (“OPSB”) in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

**4906-6-05(B) General Information**

**B(1) Project Description**

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

The Company proposes the Vassell – Curleys 345 kV Transmission Line Adjustment #3 Project (“Project”), located within Berkshire and Trenton townships in Delaware County, Ohio. The Project involves adjusting approximately 0.25 mile of the Vassell – Curleys 345 kV Transmission Line (approved OPSB Case Nos. 24-0118-EL-BLN, 24-0792-EL-BLN, and 25-0225-EL-BLN), between the existing Vassell 345 kV Station and Vans Valley Road, due to its proximity to an existing underground gas pipeline. Additionally, the Project involves installing one additional 345 kV structure, along the previously approved centerline, located immediately outside the proposed Curleys Station. The location of the proposed transmission line (“Project Area”) is shown on **Maps 1 and 2** in **Appendix A**.

The Project meets the requirements for a Letter of Notification (“LON”) as defined by Items 1(d)(ii) of Appendix A to Ohio Administrative Code Section 4906-1-01, *Application Requirement Matrix for Electric 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 applicant.*

The Project has been assigned Case No. 26-0433-EL-BLN.

AEP Ohio Transmission Company, Inc.

Vassell – Curleys 345 kV Transmission  
Line Adjustment #3 Project  
26-0433-EL-BLN

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**B(2) Statement of Need**

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

The Project involves adjusting approximately 0.25 mile of the Vassell – Curleys 345 kV Transmission Line. The need for the Project remains the same as what was reported in OPSB Case No. 24-0118-EL-BLN.

The New Albany area continues to see some of the fastest growing electric demand in the AEP system. The robust economic development activity in New Albany is creating a continued influx of new customer interconnection requests.

The approximate load in the New Albany area today is 500 MW and the demand is expected to exceed 2,000 MW by the end of 2027, and will continue to grow in future years. Due to the projected customer load, existing facilities that serve the area, including the 345 kV circuits between Corridor Station and Vassell Station, will exceed their thermal capacities under certain scenarios.

The Company proposes to introduce new 345 kV sources into the area to address identified planning criteria violations by constructing two new 345 kV transmission lines between the Company’s Vassell Station and the Green Chapel and Curleys Stations, respectively. Several projects in the New Albany area will be needed to address issues created by the projected load growth and to serve the current demand of more than 10 new customer requests in the area.

Failure to move forward with the proposed Project and future projects will result in the inability to serve the various customer load expectations (existing and new customers). In addition to the direct customer service, failure to move forward with the Project would have a negative impact on economic development in the area.

Each customer need was presented and reviewed with stakeholders between February 2022 and April 2023, at the PJM SRRTEP or TEAC Meetings. The solution to the Project was presented in the December 5, 2023, PJM TEAC Meeting. The Project has been assigned the PJM supplemental number s3442.28. The Project was included in the Company’s 2024 Long Term Forecast Report (LTFR) on pages 123 and 124 (See **Appendix B**).

**B(3) Project Location**

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

The location of the Project in relation to existing transmission lines and substations is shown on **Map 1**, in **Appendix A**. **Map 2**, in **Appendix A**, identifies the Project components on a 2024 aerial photograph.

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**B(4) Alternatives Considered**

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

Over the past nine months, continued engineering design have progressed, which resulted in a centerline shift for the Vassell – Curleys 345 kV Transmission Line due to the previously-approved centerline’s proximity to an existing underground pipeline.

No additional wetland, streams, tree clearing or cultural resource impacts are anticipated, and the proposed adjustment does not affect any additional landowners. Based on the information gathered, the Company selected the proposed route and adjustment as shown on **Map 3** in **Appendix A**, which represents the most suitable location and most appropriate solution for the Project.

**B(5) Public Information Program**

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

The Company will inform affected 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 OAC Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). The Company maintains a website (<http://aeptransmission.com/ohio/>) which hosts an electronic copy of this LON and the public notice of this LON. An electronic copy of the LON will be served to the public library in each political subdivision affected by this Project. In addition, the Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey this information to affected owners and tenants.

**B(6) Construction Schedule**

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

Construction of the Project began in January 2026. The impacted 0.25 miles that is being adjusted has been placed on hold until this Amendment is reviewed and approved. The anticipated in-service date for the Project is April 2027.

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**B(7) Area Map**

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

**Map 1**, in **Appendix A**, identifies the location of the Project area on the United States Geological Survey 1:24,000 Johnstown, New Albany, and Sunbury quadrangle maps. **Appendix A, Map 2** is a 2024 aerial map of the Project area.

**B(8) Property Agreements**

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

The proposed shift crosses two Company-owned properties (Parcel No. 41633001013001 and 41744001016000). The Company has an existing easement agreement for the remaining property crossed by proposed shift (Parcel No. 41744001028000).

The easement form exhibit provided in **Appendix C** represents the minimum rights the Company would require in order to construct, operate, and maintain these facilities.

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**B(9) Technical Features**

**The applicant shall 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 Vassell – Curleys 345 kV Transmission Line Adjustment #3 Project involves installing one additional 345 kV structure, along the previously approved centerline, located immediately outside the proposed Curleys Station.

Voltage:	345 kV
Conductors:	1x (3) 2-Bundle 1590 KCM Falcon ACSS (54/19)
Static Wire:	2x (1) 0.646" 144 Ct OPGW
Insulators:	Polymer
ROW Width:	150 feet
Structure type:	One (1) Steel monopole, brace post insulator, tangent structure with direct embed foundation

**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.**

**B(9)(b)(i) Calculated Electric and Magnetic Field Strength Levels**

**i) Calculated Electric and Magnetic Field Levels**

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

**B(9)(b)(ii) Design Alternatives**

**A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.**

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

**B(9)(b)(ii)(c) Project Cost**

**The estimated capital cost of the project.**

The cost estimate for the approved Vassell – Curleys 345 kV Transmission Line is approximately \$104.5 million using a Class 4 estimate. There is no cost increases associated with the proposed engineering modifications.

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**B(10) Social and Economic Impacts**

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

**B(10)(a) Operating Characteristics**

**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 is located in Berkshire and Trenton townships within Delaware County, Ohio. Existing agricultural land uses, including cultivated cropland and hay field/pasture, are predominantly located in the area immediately surrounding the 0.25-mile adjustment. Single-family residences are also in proximity to the proposed adjustment, located along Vans Valley Road.

There are no schools, parks, churches, or cemeteries within 1,000 feet of the centerline of the Project. The proposed 0.25-mile adjustment is within proximity to an environmental conservation easement established by the Company, which is located approximately 0.3 mile south of the existing Vassell Station on Company property. No proposed structures are located within the environmental conservation easement.

**B(10)(b) Agricultural Land Information**

**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 Delaware County Auditor was contacted in April 2026 to obtain updated information about agricultural district lands for the properties crossed by the proposed shift. Email correspondence from the auditors on April 16, 2026, confirmed that the data previously acquired in March 2025 remains accurate. The proposed Vassell-Curleys 345 kV Adjustment No. 3 Project crosses no agricultural district land or Ohio Department of Agriculture (“ODA”) conservation easements within the Project area.

The proposed 0.25-mile adjustment occupies approximately five acres; all of which has historically been used for agricultural purposes (cultivated cropland or pasture/hayfield). However, agricultural impacts will

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be minimized by using monopole structures and agricultural activities are a compatible and permitted use within the transmission right-of-way.

**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.**

The Company’s consultant completed Phase I Archaeological and Phase I History/Architectural surveys, involving subsurface testing and visual inspection, for a 300-foot-wide survey corridor that encompasses the proposed 150-foot-wide ROW of the proposed line route adjustment.

No previously unrecorded resources that were identified were considered as being landmarks or eligible for the National Register of Historic Places. As a result, the Company recommended to the SHPO that the overall project would have no adverse effect on historic properties and no further cultural resource work would be necessary. In their response, dated March 19, 2025, SHPO supported the consultant’s recommendations (see **Appendix D**).

**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 Project-specific Storm Water Pollution Prevention Plan (SWPPP”) has been approved by the Ohio Environmental Protection Agency for authorization of construction stormwater discharges under General Permit OHC000006. The Company will also coordinate stormwater permitting needs with the appropriate local entities as required. The Company will implement and maintain best management practices (“BMPs”) as outlined in the Project-specific SWPPP to minimize erosion control sediment to protect surface water quality during storm events.

Wetland and stream delineation field surveys were completed within the 150-foot-wide ROW for the previously approved centerline, in addition to a larger area, by the Company’s consultant in June 2023, between September 2023 to January 2024, in July 2024, and January 2025, which encompasses the proposed 0.25-mile adjustment (see Addendum #3 Ecological Report in **Appendix E**). No wetlands or streams were identified within the 150-foot-wide ROW of the proposed 0.25-mile adjustment; therefore, no additional impacts to delineated features are anticipated for the Project.

The project is applicable to a non-reporting NWP 57 as the thresholds of temporary fill in jurisdictional wetlands remain below reporting requirements and non-mechanized clearing will be used in wetland areas.

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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 number 39041C0276K). Based on this mapping, the nearest FEMA-designated 100-year floodplain and regulatory floodway areas are located approximately 0.5-mile northwest of the proposed 0.25-mile adjustment, which are associated with Big Walnut Creek. No proposed structures are planned to be located within the floodplain areas. In coordination with the Delaware County Floodplain Administrator on January 12, 2026, it was determined that no floodplain coordination is required for the Project

**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.**

Coordination letters were sent to U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources-Division of Wildlife (ODNR-DOW). The USFWS response was received on September 11, 2023, and ODNR-DOW’s response was received on October 13, 2023. Copies of the agencies’ correspondence letters are provided in **Appendix D**. The proposed route adjustments are minor and an update to the USFWS or ODNR-DOW was not necessary, as the original correspondence is still valid.

As part of the ecological study completed for the overall project, a coordination letter was submitted to the United States Fish and Wildlife Service (“USFWS”) Ohio Ecological Services Field Office seeking technical assistance on the overall project for potential impacts to threatened or endangered species. The September 11, 2023, response letter from the USFWS (see **Appendix D**) indicated that the federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the state of Ohio. The USFWS indicated that seasonal tree clearing would be required if suitable bat habitat trees were identified. Any tree clearing required for the overall project will adhere to seasonal restrictions (March 31 through October 1); therefore, adverse impacts to protected bat species are not anticipated as a result of the Project. Due to the Project type, size, and location, USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.

A coordination letter was submitted to the Ohio Department of Natural Resources (“ODNR”) Division of Wildlife (“DOW”) Ohio Natural Heritage Program (“ONHP”) and the ODNR - Office of Real Estate seeking an environmental review of the overall project for potential impacts on state listed and federally listed threatened or endangered species. Correspondence from ODNR DOW/OHNP and the ODNR – Office of Real Estate was received on October 13, 2023 (See Appendix D). According to the DOW, the Project is within the range of the state and federally endangered Indiana bat, the state and federally endangered northern long-eared bat, the state endangered little brown bat (*Myotis lucifugus*), and the state endangered tricolored bat (*Perimyotis subflavus*). Additionally, the DOW indicated that the southern portion of the overall project is within the vicinity of records for the northern long-eared bat. Because of the presence of

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state endangered bat species established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. Similar to the USFWS response, ODNR recommends cutting between October 1 and March 31 to avoid impacts to these protected bat species. Based on a desktop survey for caves, mines, and other potential openings, no winter hibernacula were identified within 0.25 mile of the Project (See **Appendix E**). The total acreage of tree clearing for the overall project remains unchanged by the proposed shifts (approximately 30 acres) and tree clearing will occur within the seasonal restrictions. Therefore, no additional coordination with ODNR regarding bat species is required.

The ODNR-DOW indicated that the overall project is within the range of five mussel species: the federally endangered rayed bean (*Villosa fabalis*), the federally endangered snuffbox (*Epioblasma triquetra*), the federally threatened rabbitsfoot (*Quadrula cylindrica cylindrica*), the state threatened salamander mussel (*Simpsonaias ambigua*), and the state threatened pondhorn (*Uniomereus tetralasmus*). No in-water work within a perennial stream is proposed for the overall project; therefore, these species are not anticipated to be impacted by the overall project.

In addition, the ODNR lists the overall project in the range of the northern harrier (*Circus hudsonius*). The ODNR recommends that nesting habitats for the listed species be avoided during their nesting periods. The professional survey completed for avian resources concluded no suitable habitat was observed for the northern harrier in the overall project area; therefore, no impacts to this bird species are anticipated.

Of the previous ten state and/or federal listed threatened and endangered species identified within range of the overall project area as identified within the Original Ecological Report (February 2024), no habitat for any of the listed aquatic or bird species were identified within the Addendum #3 Project Survey Area. However, the four bat species (Indiana bat, Northern long-eared bat, little brown bat, and tricolored bat) were identified as having potential summer roosting habitat and no hibernacula within the Addendum #3 Project Survey area, which is consistent with the original threatened and endangered species coordination for the original route.

A revised joint guidance between ODNR DOW and USFWS for Bat Surveys and Tree Clearing was released in May 2024. With the revised 2024 joint guidance, the Project retains a determination of “no effect” due to the absence of hibernacula within 0.25 mile of the Project area. Further coordination with either the USFWS and/or ODNR is still warranted if tree clearing for the overall project cannot be completed during the seasonal tree clearing restriction (October 1 – March 31). A copy of the Addendum #3 Ecological Report with further discussion of threatened and endangered species has been provided in **Appendix E**.

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**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.**

As stated in Section B(10)(e), a copy of the correspondence letters received from the USFWS and ODNR-DOW are provided in **Appendix D**. USFWS indicated no impacts to proposed or designated critical habitats, which is still true with the proposed route adjustment.

The Company's consultant conducted a wetland and stream delineation survey in the overall project study area and prepared an Ecological Survey Report. The Company's consultant conducted additional surveys and prepared an addendum to the report, which accounts for the proposed alignment change. The Addendum #3 Ecological Report is provided in **Appendix E**.

Within the total 9.4 acres of the Addendum #3 survey areas, the Company's consultant identified one new PEM wetland and one new ephemeral stream and extended one existing PEM/PFO wetland and two perennial streams. Out of the newly identified and extended resources within the Addendum #3 survey area, none of the features were identified within the proposed 150-foot-wide ROW for the proposed 0.25-mile adjustment. Approximately 30 acres of tree clearing within the ROW is anticipated for the overall project, of which, 4.6 acres occur in delineated PFO wetlands. The acreages of tree clearing for the overall project remain unchanged by the proposed shift.

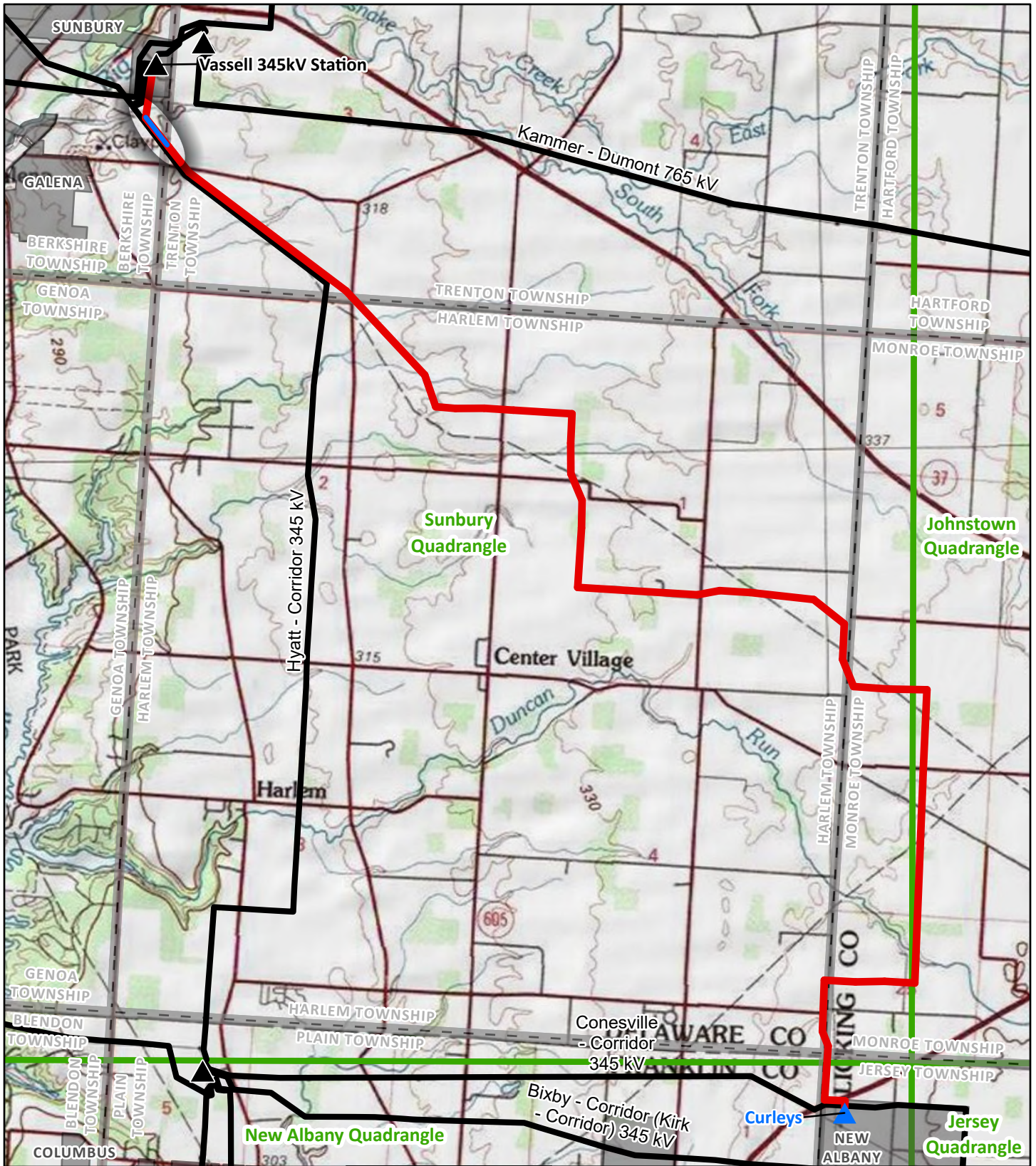
Based on a review of the Protected Areas Database of the United States as well as the Conservation Easement Database, there are no state or national parks, forests, or wildlife areas within the vicinity of the Project.

**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**



	Proposed AEP Substation		Existing AEP Transmission Line
	Existing AEP Substation		Municipality
	Vassell-Curleys 345kV Transmission Line (Approved Case No. 25-0225-EL-BLN)		Township Boundary
	Proposed Shift to the Vassell-Curleys 345kV Transmission Line		USGS 7.5' Topographic Quad Boundary

Sources:  
USGS (2021)

StatePlane  
Ohio North  
NAD 83

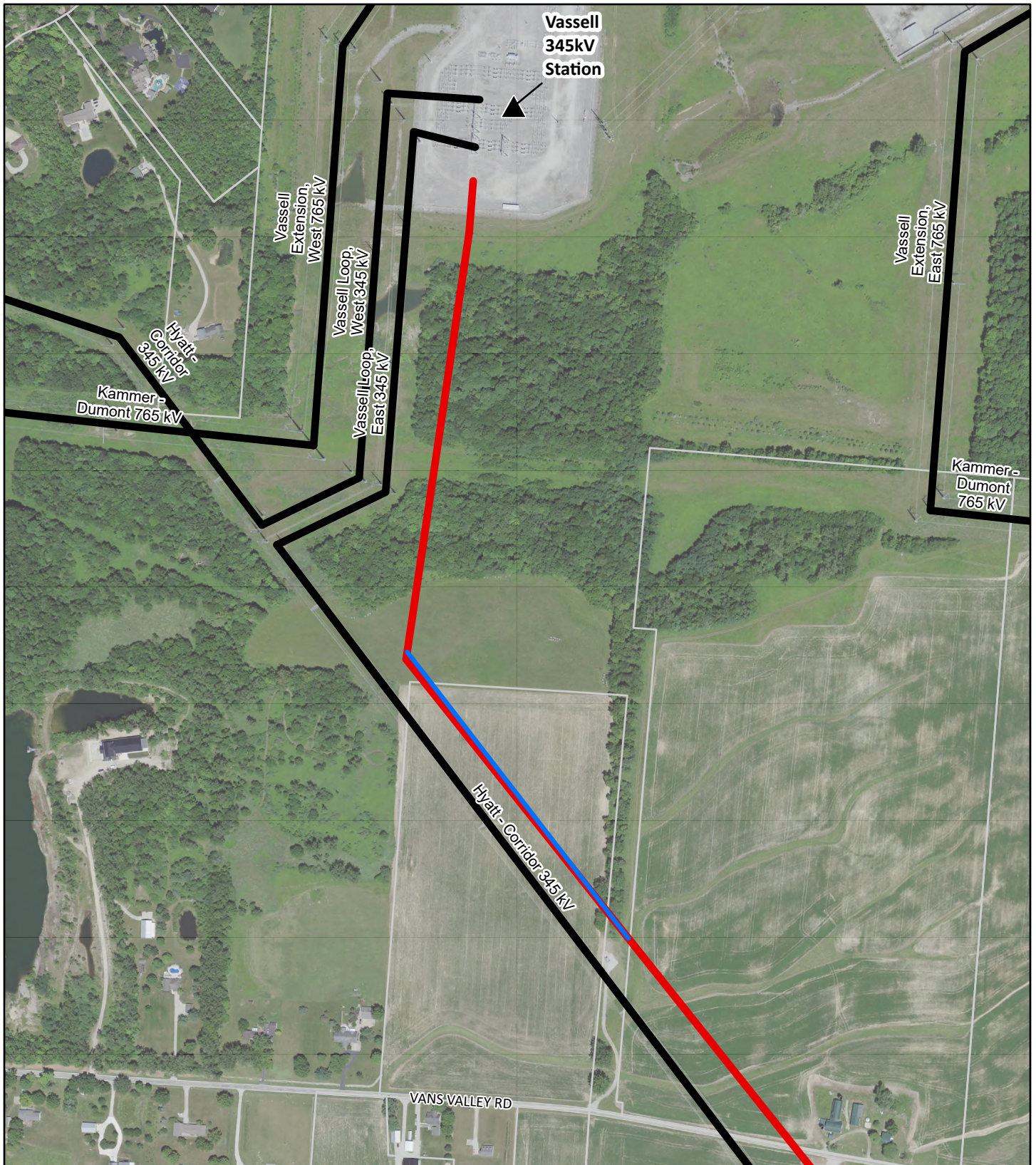
April 09, 2026








**Map 1**  
**Project Overview**

Vassell - Curleys 345 kV Transmission Line Adjustment #3 Project

0 0.5 1 1.5  
Miles

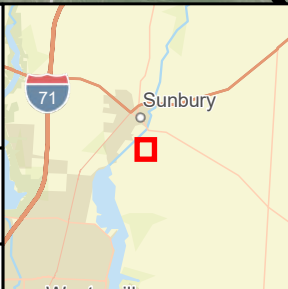


-  Existing AEP Substation
-  Proposed Shift to the Vassell-Curleys 345kV Transmission Line
-  Transmission Line (Approved Case No. 25-0225-EL-BLN)
-  Existing AEP Transmission Line
-  Parcel Boundary


Sources:  
OSIP Imagery (OGRIP 2024)

StatePlane  
Ohio North  
NAD 83

April 09, 2026




**Map 2  
Aerial Map**



An AEP Company

Vassell - Curleys 345 kV  
Transmission Line  
Adjustment #3 Project



0    250    500    750  
Feet

## **Appendix B PJM Slides & LTR**

# New Albany Area

- AEP is experiencing significant load growth in the New Albany area.
- As a result of the land development in this region, new easements and rights-of-way are becoming increasingly difficult and costly to obtain.
- In anticipation of this continual and future growth, AEP is planning to acquire ROW options/easements for two corridors in this area to facilitate any required future infrastructure development.





## AEP Transmission Zone M-3 Process Central/NW OH, Indiana.

**Need Number:** AEP-2022-OH023, AEP-2022-OH034, AEP-2022-OH036, AEP-2022-OH045, AEP-2022-OH046, AEP-2022-OH075, AEP-2022-OH077, AEP-2023-OH016, AEP-2023-OH019, AEP-2023-OH032, AEP-2023-OH040, AEP-2023-OH044, AEP-2023-OH052, AEP-2023-OH063

**Process Stage:** Solutions Meeting 5/9/2023, 12/5/2023

**Proposed Solution (continued):**

**The following components are system reinforcements that were initially identified by AEP and later confirmed by PJM through their DNH analysis:**

- **Vassell – Green Chapel 345 kV line:** Install approximately 12.5-mile long 345 kV transmission between Vassell and Green Chapel stations to mitigate overloading on multiple transmission facilities including other 345 kV transmission lines and 345-138 kV transformers. Cost: **\$75.0 M**
- **Vassell – Curleys 345 kV line:** Install approximately 12.5-mile long 345 kV transmission between Vassell and Curleys stations to mitigate overloading on multiple transmission facilities including other 345 kV transmission lines and 345-138 kV transformers. Cost: **\$75.0 M**
- **Vassell 765 & 345 kV stations:** Add 3-345 kV breakers to connect new lines to Curleys and Green Chapel. Cost: **\$10 M**
- **Green Chapel 345/138 kV station:** Install two 675 MVA, 345/138 kV transformers to connect the new Vassell – Green Chapel 345 kV line to 138 kV system and to mitigate overloading on the other 345/138 kV transformers in the system. Cost: **\$39.2 M**

**System Upgrades: \$199.2 M**

PUCO Form FE-T9: Ohio Transmission Company  
Specifications of Planned Electric Transmission Lines

12	<b>CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION</b>	Potential for increased transmission line outages
13	<b>MISCELLANEOUS:</b>	
1	<b>LINE NAME AND NUMBER:</b>	Vassell - Green Chapel 345 kV (TP2022981)
2	<b>POINTS OF ORIGIN AND TERMINATION</b>	Vassell - Green Chapel INTERMEDIATE STATION - N/A
3	<b>RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS</b>	~12.5 mi / 150 ft / 2 circuit
4	<b>VOLTAGE: DESIGN / OPERATE</b>	345 kV / 345 kV
5	<b>APPLICATION FOR CERTIFICATE:</b>	2024
6	<b>CONSTRUCTION:</b>	2025 - 2027
7	<b>CAPITAL INVESTMENT:</b>	\$75 M
8	<b>PLANNED SUBSTATION:</b>	N/A
9	<b>SUPPORTING STRUCTURES:</b>	Steel
10	<b>PARTICIPATION WITH OTHER UTILITIES</b>	N/A
11	<b>PURPOSE OF THE PLANNED TRANSMISSION LINE</b>	Mitigate overloading on multiple transmission facilities including other 345 kV transmission lines and 345-138 kV transformers
12	<b>CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION</b>	Potential for increased transmission line outages
13	<b>MISCELLANEOUS:</b>	
1	<b>LINE NAME AND NUMBER:</b>	Vassell - Curleys 345 kV (TP2022981)
2	<b>POINTS OF ORIGIN AND TERMINATION</b>	Vassell - Curleys INTERMEDIATE STATION - N/A

PUCO Form FE-T9: Ohio Transmission Company  
Specifications of Planned Electric Transmission Lines

3	<b>RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS</b>	~12.5 mi / 150 ft / 2 circuit
4	<b>VOLTAGE: DESIGN / OPERATE</b>	345 kV / 345 kV
5	<b>APPLICATION FOR CERTIFICATE:</b>	2024
6	<b>CONSTRUCTION:</b>	2025 - 2027
7	<b>CAPITAL INVESTMENT:</b>	\$75 M
8	<b>PLANNED SUBSTATION:</b>	N/A
9	<b>SUPPORTING STRUCTURES:</b>	Steel
10	<b>PARTICIPATION WITH OTHER UTILITIES</b>	N/A
11	<b>PURPOSE OF THE PLANNED TRANSMISSION LINE</b>	Mitigate overloading on multiple transmission facilities including other 345 kV transmission lines and 345-138 kV transformers
12	<b>CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION</b>	Potential for increased transmission line outages
13	<b>MISCELLANEOUS:</b>	
1	<b>LINE NAME AND NUMBER:</b>	Conesville - Coridor 345 kV (TP2023011)
2	<b>POINTS OF ORIGIN AND TERMINATION</b>	1). Bermuda - Corridor INTERMEDIATE STATION - N/A 2). Bermuda - Innovation INTERMEDIATE STATION - N/A
3	<b>RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS</b>	~7.8 mi total ~1.85 mi double circuit ~ 5.95 mi single / 150 ft / 1 & 2 circuit (1.85 mi double circuit work)
4	<b>VOLTAGE: DESIGN / OPERATE</b>	345 kV / 345 kV
5	<b>APPLICATION FOR CERTIFICATE:</b>	2024
6	<b>CONSTRUCTION:</b>	2024 - 2025
7	<b>CAPITAL INVESTMENT:</b>	\$21.01 M
8	<b>PLANNED SUBSTATION:</b>	Bermuda

**Appendix C      Form Easement**

**Line Name: Vassell - Curleys**  
**Line No.: TLN380:OH480**  
**Easement No.:**

**EASEMENT AND RIGHT OF WAY**

On this \_\_\_\_\_ day of \_\_\_\_\_, 202\_\_, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the covenants hereinafter set forth, [landowner name and marital status], whose address is \_\_\_\_\_ (“Grantor”), whether one or more persons, hereby grants, sells, conveys, and warrants to AEP Ohio Transmission Company, Inc., an Ohio corporation, a unit of American Electric Power, whose principal business address is 1 Riverside Plaza, Columbus, Ohio 43215 (“AEP”), and its successors and affiliates, a permanent easement and right of way (“Easement”) for a single electric transmission line, not to exceed 345 kV, and for internal communication purposes related to the supply of electricity (the “Transmission Line”), being, in, on, over, under, through and across the following described lands of Grantor, situated in the State of Ohio, County of \_\_\_\_\_, and Township of \_\_\_\_\_ and being a part of [abbreviated legal description] (“Grantor’s Property”).

*Contingent provision:* [Spouse of Grantor, if any] join herein for the purpose of releasing all dower rights in regard to the Easement.

Grantor claims title by [name of vesting instrument] dated \_\_\_\_\_ from [name of first grantor], recorded on \_\_\_\_\_ at [record volume, page] in the \_\_\_\_\_ County Recorder’s Office.

Auditor/Key/Tax Number: [Tax Parcel Number]

The Easement Area is more fully described and depicted on Exhibit “A”, a copy of which is attached hereto and made a part hereof (“Easement Area”).

**GRANTOR FURTHER GRANTS AEP THE FOLLOWING RIGHTS:**

The right, now or in the future, to construct, reconstruct, operate, maintain, alter, improve, inspect,

within the Easement Area, and may re-grade any alterations of the ground elevation within the Easement Area.

AEP agrees to repair or pay Grantor for actual damages sustained by Grantor to crops, fences, gates, irrigation and drainage systems, drives, or lawns that are permitted herein, when such damages arise out of AEP's exercise of the rights herein granted.

Pursuant to R.C. 163.02, Grantor possesses a right of repurchase pursuant to R.C. 163.211 if AEP decides not to use Grantor's Property for the purpose stated in the appropriation petition and Grantor provides timely notice of a desire to repurchase.

This instrument contains the complete agreement, expressed or implied between the parties herein and shall inure to the benefit of and be binding on their respective successors, affiliates, heirs, executors, and administrators.

This Easement may be executed in counterparts, each of which shall be deemed an original, but all of which, taken together, shall constitute one and the same instrument.

**Any remaining space on this page left intentionally blank. See next page(s) for signature(s).**

**Appendix D      Agency Coordination Letters**



In reply, refer to  
2023-DEL-59893

March 19, 2025

Ryan Weller  
Weller & Associates, Inc.  
1395 W. Fifth Ave.  
Columbus, OH 43212  
[rweller@wellercrm.com](mailto:rweller@wellercrm.com)

**RE: Vassell-Curleys 345kV Greenfield Transmission Line Project, Delaware County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received March 3, 2025, regarding the proposed Vassell-Curleys 345kV Greenfield Project located in Delaware County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4 & 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 the letter report titled *Addendum 3 Cultural Resource Management Investigations for Improvements Associated with the Vassell-Curleys 345kV Greenfield Project in Delaware County, Ohio (PO 81128903; BPID P22735002; WO T10505699001)* by Ryan J. Weller (Weller & Associates, Inc. 2025). This project involves several disconnected areas to address alignment shifts outside the previously surveyed Vassell-Curleys 345kV Greenfield transmission line project in Delaware County, Ohio. These alignment shifts are located at Structure 1, Structure 23, between Structures 46-48, and between Structure 62 and Vassell Station. A literature review, visual inspection, and shovel test unit excavations were conducted during these investigations. Areas of inundation, steep slopes, and visible disturbance were noted within portions of the addendum project area. Portions of the addendum project area had been previously professionally surveyed. There were no previously documented archaeological sites within the addendum project area and no new archaeological sites were identified through these investigations. Our office agrees that no additional archaeological survey is necessary. Architectural resources identified within the Area of Potential Effect (APE) were previously addressed through another survey (McIntosh 2024). No additional resources were identified during the addendum survey.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Catherine Gullett".

Catherine Gullett, Project Reviews Coordinator  
Resource Protection and Review  
State Historic Preservation Office

RPR Serial No. 1107734



# Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

**Office of Real Estate**  
*Tara Paciorek, Chief*  
2045 Morse Road – Bldg. E-2  
Columbus, OH 43229  
Phone: (614) 265-6661  
Fax: (614) 267-4764

October 13, 2023

Anna Findish  
AECOM  
707 Grant Street  
Pittsburgh, Pennsylvania 15219

**Re:** 23-1066; AEP Vassell - Green Chapel North Enhancement

**Project:** The proposed project involves the implementation of improvements between the existing Vassell Station and a proposed station (approximately 12.4 miles).

**Location:** The proposed project is located in Berkshire, Trenton, and Harlem townships, Delaware County, and Monroe and Jersey townships, Licking County, Ohio.

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

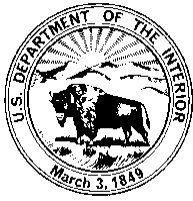
**Natural Heritage Database:** A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

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 portion of the project south of Duncan Plains Road is within the vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be



# 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



September 11, 2023

Project Code: 2023-0125820

Dear Anna Findish:

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

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

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

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](mailto:ohio@fws.gov).

Sincerely,

A handwritten signature in blue ink that reads "Scott Hicks". The signature is written in a cursive, slightly slanted style.

Scott Hicks  
Acting Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW  
Eileen Wyza, ODNR-DOW

information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the [Ohio Mussel Survey Protocol](#). If there is no in-water work proposed, impacts to mussels are not likely.

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 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, this project is not likely to impact this species.

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

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

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew  
Environmental Services Administrator

## **Appendix E      Ecological Report**

# **VASSELL-CURLEY 345 KV TRANSMISSION LINE - ADDENDUM #3**

## **DELAWARE, FRANKLIN, AND LICKING COUNTY, OHIO**

### **ADDENDUM #3 ECOLOGICAL REPORT**

*Prepared for:*

American Electric Power Ohio Transmission Company  
8600 Smiths Mill Road  
New Albany, Ohio 43054



*Prepared by:*

**AECOM**

525 Vine Street, Suite 1900  
Cincinnati, Ohio 45202

Project #: 60702698

February 2025

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**Number**

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 APPENDIX C Pond Photographic Record  
 APPENDIX D Upland Drainage Feature Photographic Record  
 APPENDIX E Habitat Photographic Record  
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soil survey data, United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) data, USGS National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) 100-year floodplain data, and USGS 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential wetland areas and/or streams.

Field survey activities included recording the physical boundaries of observed water features using sub-meter capable EOS Arrow Global Positioning System (GPS) units in conjunction with the ArcGIS Field Maps application on iPad tablets. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was reviewed, edited for accuracy, and compiled in a format suitable for transfer and use by AEP Ohio Transco. Water features were delineated and assessed based upon the appropriate procedures detailed below. Land uses observed within the Project Survey Area were assigned a general classification based upon the principal land characteristics and vegetative cover of the location.

## **2.1 WETLAND DELINEATION**

The Project Survey Area was evaluated according to the procedures outlined in the United States Army Corps of Engineers (USACE) *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010).

During field survey activities AECOM utilized the routine on-site delineation method described in the 1987 manual and supplement that consisted of a pedestrian site reconnaissance, including identifying the vegetative communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. If a wetland was identified, AECOM completed a USACE Wetland Determination Data Form (USACE Data Form) within each unique wetland habitat to serve as a representative of the wetland hydrology, vegetative community, and soil characteristics. Adjacent to each wetland complex, AECOM completed an additional USACE Data Form as a representative of the upland community.

### **2.1.1 WETLAND CLASSIFICATION**

Wetlands identified in the field were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al.*, 1979). The unique wetland habitats were classified as palustrine emergent (PEM), palustrine forested (PFO), palustrine unconsolidated bottom (PUB), palustrine scrub-shrub (PSS), or other classifications for some wetlands. Multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation type covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation having 30% or greater coverage is used for the classification.

**Eligible:** Streams within the watershed are eligible for coverage under the OEPA's water quality certification for the Nationwide Permits if all other general and regional special terms and conditions are met.

**Ineligible:** Projects affecting high quality streams and undesignated streams draining directly to high quality streams, as represented in the map, must undergo an individual 401 Water Quality Certification review process.

**Possibly Eligible:** Additional field screening procedures are required for streams in the watershed to determine appropriate eligibility. Projects affecting undesignated streams within those HUC12 watersheds that do not directly but eventually drain into high quality waters, might be eligible for coverage under the OEPA's 401 Water Quality Certification for Nationwide Permits depending on the results of a field screening assessment. The procedures for determining individual stream eligibility in this scenario are specified in Appendix D "Stream Eligibility Determination Process" of the OEPA Ohio State Water Quality Certification of the 2017 Nationwide Permit Reauthorization.

### 2.2.3 UPLAND DRAINAGE FEATURES

An upland drainage feature (UDF) is a non-jurisdictional drainage that does not meet the criteria of either a jurisdictional stream or a wetland. A UDF generally lacks an OHWM (USACE, 2005) and are equivalent to a swale or an erosional feature as described by the USACE: "generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale" (USACE, 2005).

A roadside ditch may also be documented as a UDF if it meets the "not potentially jurisdictional" characterization as described in the Office of Environmental Services *Roadway Ditch Characterization Flowchart* (Ohio Department of Transportation, 2014). This would include a ditch that originates entirely within the roadway right-of-way, has a seasonal flow regime, was not constructed to drain a wetland, and does not have hydrophytic vegetation extending more than an insignificant amount beyond its original configuration.

In addition, UDF's (including swales, ditches, and other erosional features) are generally not WOTUS except in certain circumstances, such as relocated streams.

### 2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a threatened and endangered species review and general field habitat surveys within the Project Survey Area. AECOM submitted requests to the Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section and the USFWS Ohio Ecological Services Field Office soliciting comments on the proposed Project. Agency-identified species of concern and available

**TABLE 1: SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE PROJECT SURVEY AREA**

Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
<b>Delaware County</b>					
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	Ground moraines, end moraines	No	Condit 5% Pewamo 3%
	BeB	Bennington silt loam, 2 to 6 percent slopes	End moraines, ground moraines	No	Condit 3% Pewamo 3%
Centerburg	Cen1B1	Centerburg silt loam, 2 to 6 percent slopes	Ground moraines, end moraines	No	Condit 4% Marengo 3%
	Cen1C2	Centerburg silt loam, 6 to 12 percent slopes, eroded	End moraines, ground moraines	No	Condit 4%
Condit	CnA	Condit silt loam, 0 to 1 percent slopes	End moraines, ground moraines	Yes*	Pewamo 3% Condit, fine-loamy 3%
Pewamo	PwA	Pewamo silty clay loam, 0 to 1 percent slopes	Drainageways on till plains, depressions on till plains	Yes*	Minster 6%
Sloan	SnA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded	Flats on flood plains, backswamps on flood plains, abandoned channels on flood plains	Yes*	Pewamo 5% Millgrove 5%
Smothers	SsA	Smothers silt loam, 0 to 2 percent slopes	Ground moraines	No	Pewamo 5%
<b>Franklin County</b>					
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	Ground moraines, end moraines	No	Condit 5% Pewamo 3%
	BeB	Bennington silt loam, 2 to 6 percent slopes	End moraines, ground moraines	No	Condit 3% Pewamo 3%
Pewamo	Pm	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	Drainageways, depressions	Yes*	Condit 9%
<b>Licking County</b>					
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	Ground moraines, end moraines	No	Condit 5% Pewamo, low carbonate till 3%
	BeB	Bennington silt loam, 2 to 6 percent slopes	End moraines, ground moraines	No	Pewamo 3% Condit 3%

NWI Code	NWI Description	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	S-MRK-013	Feature was verified as a delineated stream.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	S-MRK-012	Feature was verified as a delineated stream.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	S-MRK-011 and S-MRK-028	Feature was verified as a delineated stream.
R5UBH	Riverine, Perennial, Unconsolidated Bottom, Streambed, Permanently Flooded	S-MRK-018	Feature was verified as a delineated stream.

**3.1.3 DELINEATED WETLANDS**

During the field survey, one new PEM wetland (W-AGS-001) and one existing PFO wetland was extended and reclassified as a PEM/PFO wetland complex (W-MRK-021) within the Addendum #3 Project Survey Area. The new wetland was assigned a ORAM Category 2 and no changes in score occurred for the previously access wetland (W-MRK-021) and remained a ORAM Category 2. For W-AGS-001, the wetland was assigned a ORAM Category 1.

In summary of the entire Project Survey Area (Original, Addendum #1, and Addendum #3), a total of 20 wetlands were identified. Of these 20 wetlands identified, ten were PFO, seven were PEM, one was PSS, and two were a PEM/PFO wetland complex. Eleven wetlands were assigned ORAM Category 1 and nine were assigned as ORAM Category 2 wetlands. No Category 3 wetlands were identified within the Project Survey Area. A summary of the delineated features is provided in **Table 3**. The AECOM delineation boundaries are provided on **Figure 3**.

Due to new features being identified since the Original and Addendum #3 reports, AECOM has adjusted **Table 3** with changes reflected as “yellow” highlights. The completed USACE data forms and photographs of each wetland are provided in **Appendix A**.

### 3.2 STREAM DELINATION

During the field survey, one new ephemeral stream (S-AGS-001) was identified, and two existing perennial streams (S-MRK-020 and S-MRK-022) were extended within the Addendum #3 Project Survey Area. The new stream was classified with HHEI methodology as Class I PHW (Score 13) and the two extended streams didn't have a change of score since the original assessment.

In summary of the entire Project Survey Area, a total 19 streams (nine perennial, seven intermittent, and three ephemeral) were identified within the Project Survey Area. Of these 19 streams, 14 were classified with HHEI methodology (four Class I PHW and 10 Class II PHW), four were classified with QHEI methodology, and one stream had an existing use designation under Chapter 3745-1 as a Warmwater Habitat. Each stream identified in the Project Survey Area is displayed on **Figure 2**. The completed data forms and photographs are provided in **Appendix B**.

AECOM has provided a provisional determination that all delineated streams, except ephemeral streams, within the Project Survey Area appears to be jurisdictional (i.e, WOTUS), based on their observed or presumed confluence with downstream waters. Final jurisdictional status can only be determined by the USACE, and any AECOM assessments are provisional. A summary of the delineated features is provided in **Table 4**. Due to changes since the Original, Addendum #1, and Addendum #3 Reports, AECOM has highlighted the changes of **Table 4** as "yellow".

**3.2.1 OEPA STREAM ELIGIBILITY**

OEPA stream eligibility for 401 WQC mapping was reviewed for the Addendum#3 Project Survey Area with a all the previously identified watersheds within portions of the Addendum#3 Project Survey Area.

Of these four watersheds crossed by the Project area, one designated by 401 WQC eligibility as “possibly eligible” and three designated as “eligible”, as listed in **Table 5**. The OEPA stream eligibility mapping for the Project Survey Area is provided on **Figure 4**.

**TABLE 5: SUMMARY OF WATERSHED 401 WQC ELIGIBILITY WITHIN THE PROJECT SURVEY AREA**

HUC-12	Watershed	401 WQC Eligibility	Number of Stream Assessments
050600011503	Prairie Run-Big Walnut Creek	Eligible	6
050600011308	Hoover Reservoir-Big Walnut Creek	Eligible	7
050600011307	Duncan Run	Eligible	3
050600011503	Headwaters Blacklick Creek	Possibly Eligible	3
<b>Total</b>			<b>19</b>

**3.3 FEMA 100 YEAR FLOODPLAINS**

No mapped FEMA designated 100-year floodplains and/or floodways are identified within the Addendum #3 Project Survey Area. Across the entire Project area, no FEMA regulated floodways are located within the Project Survey Area; however, 100-year mapped floodplains are located between Structures 50 to 51, 47 to 49, and 11 to 12 as shown on **Figure 2** (FEMA, 2009, 2023).

**3.4 PONDS**

No ponds were identified within the Addendum #3 Project Survey Area. In the entire Project Survey Area, a total of two ponds were identified. The first pond (P-MRK-001) was a recreational or residential constructed pond and the second (P-MRK-002) was a stormwater basin. The USACE data forms are provided in **Appendix A** and the pond photographic log is provided in **Appendix C**.

**3.5 UPLAND DRAINAGE FEATURES AND PONDS**

A total of one upland drainage feature (UDF) was identified within the Addendum #3 Project Survey Area. In the entire Project survey area, a total of 13 UDFs were identified features are displayed on **Figures 2 and 3**. Photographs of all delineated upland drainage features are provided in **Appendix D**.

Vegetative Community	Description	Approximate Acreage within Addendum #3 Project Survey Area	Approximate Acreage Within the Entire Project Survey Area	Approximate Percentage Within the Entire Project Survey Area
Woodlands (Mixed-Deciduous)	Woodlands (floodplain, upland, succession maple-mixed, etc) are present along the Project Survey Area. Woody species dominating these areas included Box elder ( <i>Fraxinus pennsylvanica</i> ), and Red maple ( <i>Acer rubrum</i> )	2.70	53.01	10.72%
<b>Totals:</b>		<b>9.36</b>	<b>494.47</b>	<b>100%</b>

**3.7 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION**

***Protected Species Agency Consultation –***

Initial coordination letters to the United States Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) were sent on September 8, 2023, and responses were received on September 11, 2023 (USFWS) and October 13, 2023 (ODNR). Copies of the received USFWS and ODNR agency correspondence has been provided as **Appendix F**. As responses received from these agencies are within two years of this addendum report and adjustments within 0.25-miles of original request review, these findings are still applicable to Addendum #3 Project Survey Areas.

Regarding state and federal listed threatened and endangered species that may occur within the Project vicinity, a total of three species were identified by the USFWS and ten species were identified by the ODNR.

Based on the review of these species in reference to Addendum #3 Project Survey Area as well as the entire Project survey area, it is not anticipated that the Project would adversely affect any of the species or their habitats as identified within **Table 7**. Photographs of the habitat within the Project Area are provided as **Appendix E**

Since the Original Report and Addendum #3 report, a revised joint guidance between ODNR DOW and USFWS for Bat Surveys and Tree Clearing was released in May 2024 and a copy has been provided as **Appendix G**. No changes between the 2023 and 2024 guidance resulted in change of determination of “no effect” for this Project due to absence of hibernacula within 0.25-miles of the Project area.

Common Name (Scientific Name)	State Status	Federal Status	Typical Habitat	Habitat Observed	Avoidance Dates	Agency Comments	Potential Impacts
Tricolored bat ( <i>Perimyotis subflavus</i> )	Endangered	Proposed	<p><u>Summer habitat</u> During spring/summer, this bat species roosts in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves.</p> <p><u>Hibernaculum(a)</u> During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.</p>	<p><u>Summer habitat</u> Within the Project Survey Area forested woodlots will be impacted by the project that contain suitable roosting trees.</p> <p><u>Hibernaculum(a)</u> No mine openings and/or known caves are located within 0.25 miles of Project area and USFWS did not identify known hibernacula within 5-miles of the Project. However, one surface mine operation and multiple karst features were identified within the Project area, which do not provide suitable hibernacula for the species.</p> <p>Field evaluations did not identify any potential hibernaculum(a) within the Project area (2024 Joint Guidance) *.</p>	April 1 – September 30	<p><u>Summer habitat</u> ODNR and USFWS recommends adherence to Avoidance Dates for Tree Clearing Activities (April 1 – September 30).</p> <p><u>Hibernaculum(a)</u> The ODNR DOW recommends a desktop habitat assessment to be conducted to identify potential hibernacula within 0.25 miles of the Project area. If habitat assessment finds potential hibernaculum within 0.25 miles, a revised seasonal tree clearing restriction (March 15 to November 15) is recommended (2024 Joint Guidance) *. If absence or no tree cutting or subsurface impacts are proposed, the Project is not likely to impact this species.</p>	<p><u>Summer habitat</u> Potential summer roosting habitat is present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended.</p> <p><u>Hibernaculum(a)</u> A surface industrial mineral mine operation and multiple karst features were identified within 0.25 miles of the Project Survey Area. However, no impacts to winter hibernacula were identified as these do not indicate areas which are anticipated to provide suitable hibernacula for cave-dwelling bats. As per ODNR and USFWS guidance, further coordination regarding potential hibernaculum is only necessary if the habitat assessment find potential habitat within 0.25-mile of the Project Survey Area.</p>
<b>Mussels</b>							
Pondhorn ( <i>Unio merus tetralasmus</i> )	Threatened	None	Perennial Streams	Perennial streams present.	March 15 through June 30	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 aquatic species.	No in-stream work is anticipated to be required for the Project. If in-stream activity is required to occur between the OHWM, further coordination with the ODNR and USFWS is warranted.
Rabbitsfoot ( <i>Quadrula cylindrica cylindrica</i> )	Threatened	Threatened	Perennial Streams	Perennial streams present.	March 15 through June 30	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 aquatic species.	No in-stream work is anticipated to be required for the Project. If in-stream activity is required to occur between the OHWM, further coordination with the ODNR and USFWS is warranted.
Rayed bean ( <i>Villosa fabalis</i> )	Endangered	Endangered	Perennial Streams	Perennial streams present.	March 15 through June 30	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 aquatic species.	No in-stream work is anticipated to be required for the Project. If in-stream activity is required to occur between the OHWM, further coordination with the ODNR and USFWS is warranted.
Salamander mussel ( <i>Simpsonia ambigua</i> )	Threatened	None	Perennial Streams	Perennial streams present.	March 15 through June 30	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 aquatic species.	No in-stream work is anticipated to be required for the Project. If in-stream activity is required to occur between the OHWM, further coordination with the ODNR and USFWS is warranted.
Snuffbox ( <i>Epioblasma triquetra</i> )	Endangered	Endangered	Perennial Streams	Perennial streams present.	March 15 through June 30	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 aquatic species.	No in-stream work is anticipated to be required for the Project. If in-stream activity is required to occur between the OHWM, further coordination with the ODNR and USFWS is warranted.
<b>Birds</b>							
Northern harrier ( <i>Circus hudsonius</i> )	Endangered	None	This species hunts over grasslands and nests can be found in large marshes and grasslands.	Two old field and/or pasture/hay fields > 2 acres in size were identified within the Project Survey Area.	April 15 to July 31	Habitat should be avoided during the bird's nesting period between April 15 through July 31. If habitat will not be impacted, this Project will not likely impact species.	No, the two old field habitats identified within the Project Survey Area are affected by "Edge Effect", adjacent residential disturbances, and/or utilized as hayfields that would not make these areas suitable habitat for this species.

\*2024 Joint Guidance – Refers to the 2024 ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing, a copy of the guidance is provided within this report.

created by the close proximity of the forested areas, the field is not considered to provide favorable nesting conditions.

- Area #4 (Structures 8 to 9) – Hay field habitat approximately 20 acres in size, closely situated near residential structures and bordered by active agriculture to the east. Due to the proximity to residential disturbance and the regular maintenance the field undergoes for hay production, the field is less probable to provide suitable nesting opportunities.

Therefore, no further coordination regarding this listed species is necessary concerning this Project.

#### 4.0 SUMMARY

The ecological field survey of the Addendum #3 Project Survey Area identified one new PEM wetland (W-AGS-001), extended and reclassified as a PFO/PEM wetland complex one previously identified PFO wetland (W-MRK-021), one new ephemeral stream (S-AGS-001), extended two previously identified perennial streams (S-MRK-020 and S-MRK-022), and one upland drainage features.

Within the overall Project Survey Area (Original, Addendum #1, and Addendum #3), AECOM identified a total of 20 wetlands (seven PEM, one PSS, ten PFO, and two PEM/PFO), 19 streams (nine perennial, seven intermittent, and three ephemeral). Of the 20 wetlands identified in the entire Project Survey Area, eleven were assigned as Category 1 wetlands and nine were assigned as Category 2 wetlands. Of the 19 streams identified in the Project Survey Area, 14 were classified with HHEI methodology (four Class I PHW and 10 Class II PHW), four were classified with QHEI methodology, and one stream had an existing use designation under Chapter 3745-1 as Warmwater Habitat.

AECOM has preliminary determined that the assessed streams within the Project Survey Area appear to be jurisdictional (i.e., WOTUS). The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project Survey Area provided on **Figure 3**. Areas that fall outside of the Project Survey Area were not evaluated in the field and are not included in the reporting of this survey.

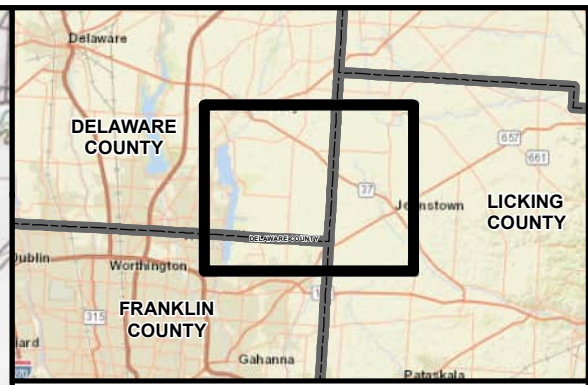
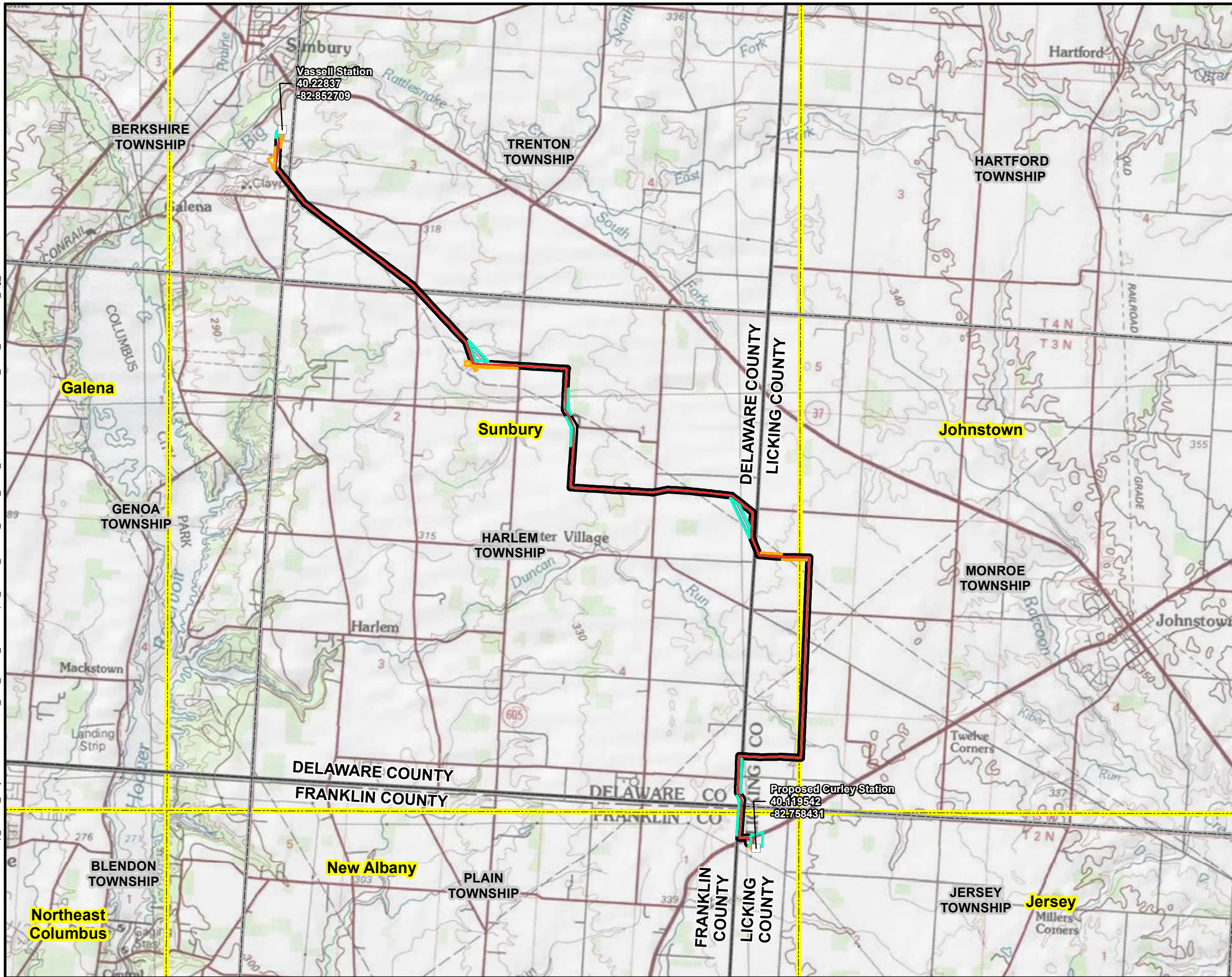
Of the previously ten state and/or federal listed threatened or endangered species identified within range of the Project area as identified within the original coordination provided for this Project included as **Appendix F**, the Project is not likely to impact the listed aquatic or bird for the areas within the Addendum #3 Project Survey Area as well as the entire Project area.

Both Addendum #3 and entire Project Survey areas (Original Report, Addendum #1, and Addendum #3) had potential summer roosting habitat identified for the four bat species (Indiana bat – *Myotis sodalists*; Northern long-eared bat - *Myotis septentrionalis*; little brown bat – *Myotis lucifugus*; and tricolored bat – *Perimyotis subflavus*). If tree clearing cannot be completed during the seasonal tree clearing restriction (October 1 to March 31), further coordination with the ODNR/USFWS is still warranted

## 5.0 REFERENCES

- AECOM. 2024 Vassell – Curleys 345kV Transmission Line Project Ecological Report. Dated February 2024
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- OEPA. 2017. 401 Water Quality Certification for the Nationwide Permits Stream Eligibility Web Map (2017 Reissuance). Updated January 24, 2024. <https://data-oeпа.opendata.arcgis.com/datasets/401-water-quality-certification-for-nationwide-permits>
- OEPA. 2020. *Field Methods for Evaluating Primary Headwater Streams in Ohio*. Version 4.1. Ohio EPA Division of Surface Water, Columbus, Ohio. May 2020. 130 pp.
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- Rankin, Edward T. 2006. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. OEPA Ecological Assessment Section, Division of Surface Water, Columbus, Ohio.
- United States Army Corps of Engineers (USACE). 2005. Regulatory Guidance Letter No. 05-05: Guidance on Ordinary High Water Mark Identification.

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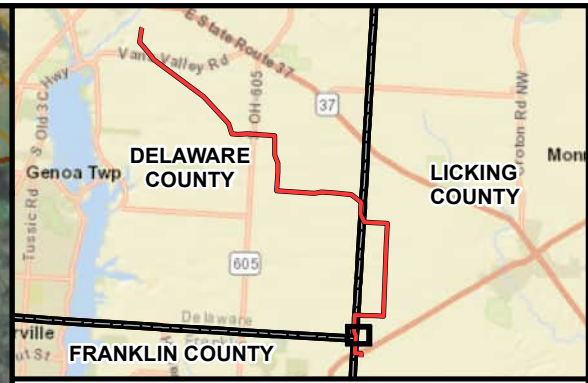
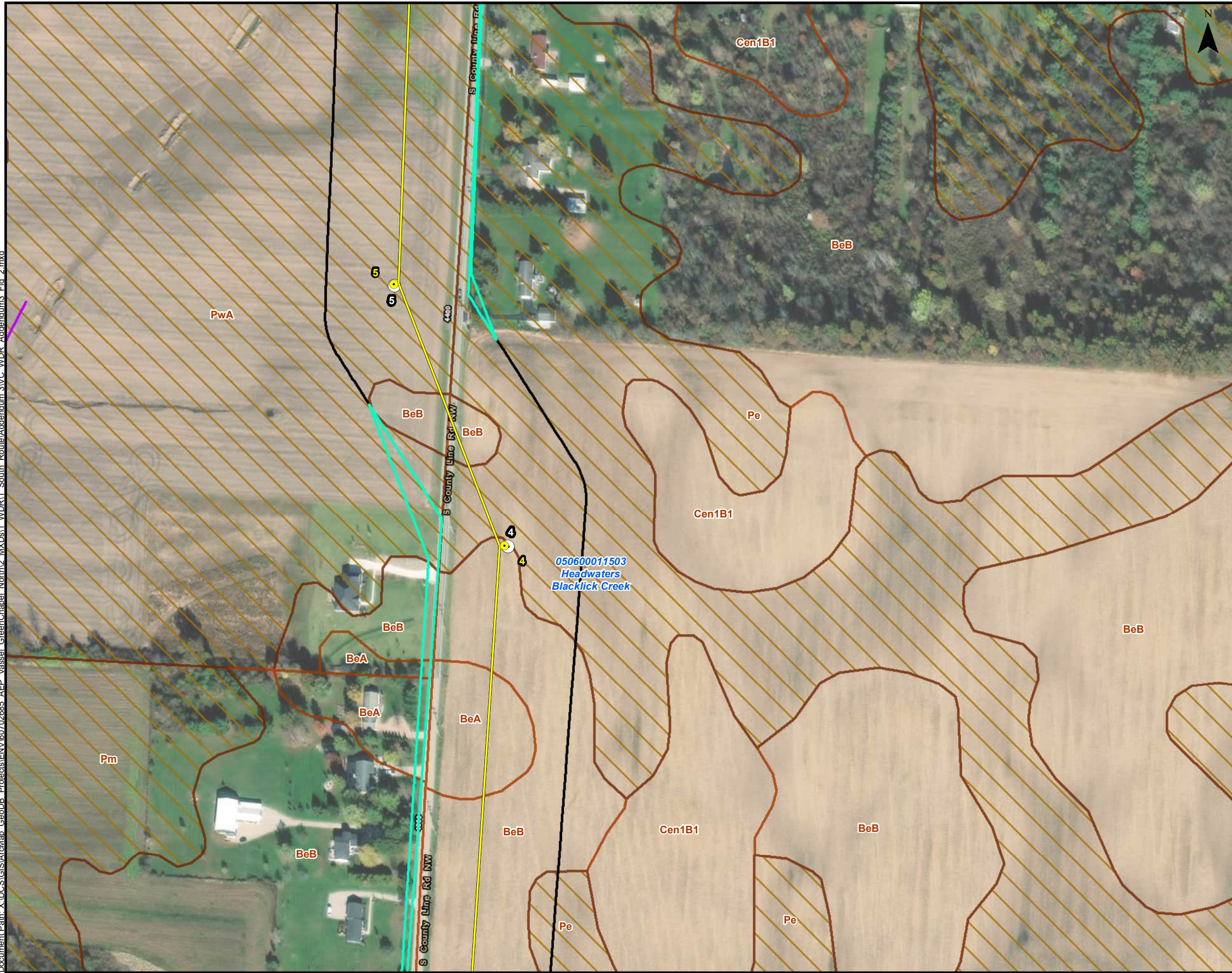
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- Township Boundary
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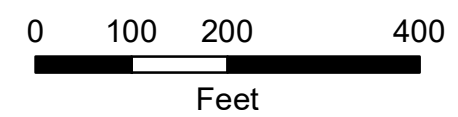
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Transmission Line Project  
Addendum 3

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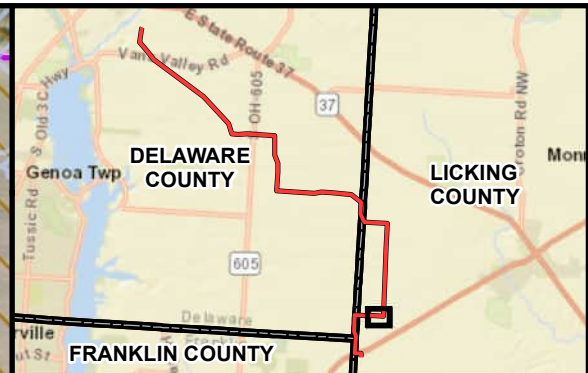
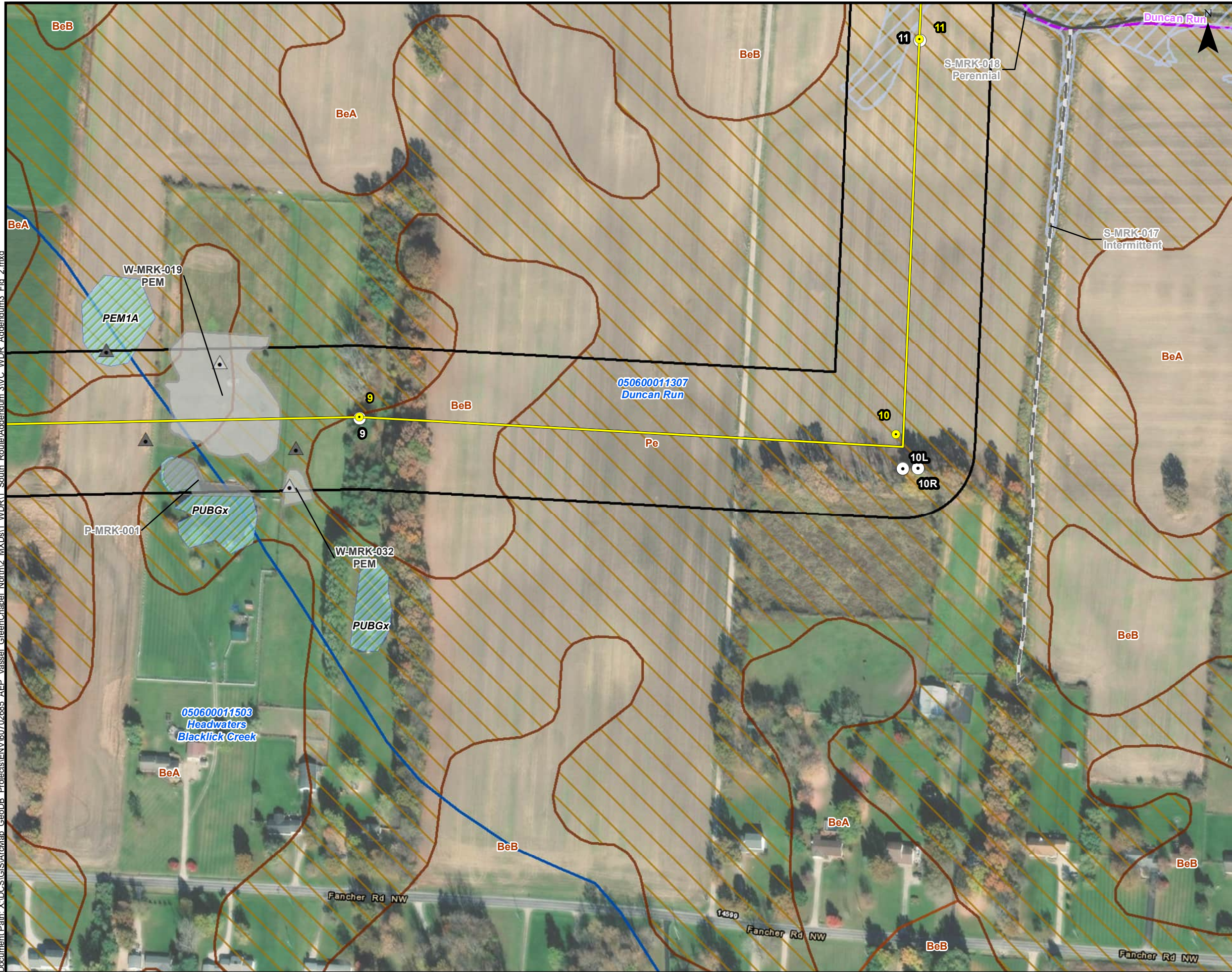
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  - Vassell - Curley 345kV Transmission Line
  - NHD Stream (USGS)
  - Addendum 1 Survey Area
  - Project Survey Area - Original Report
  - HUC 12 (USGS)
  - SSURGO Soil Map Unit (NRCS)
  - Hydric SSURGO Soil Map Unit (NRCS)



Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

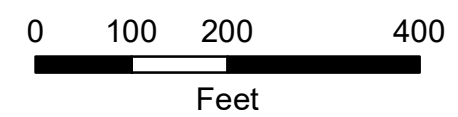
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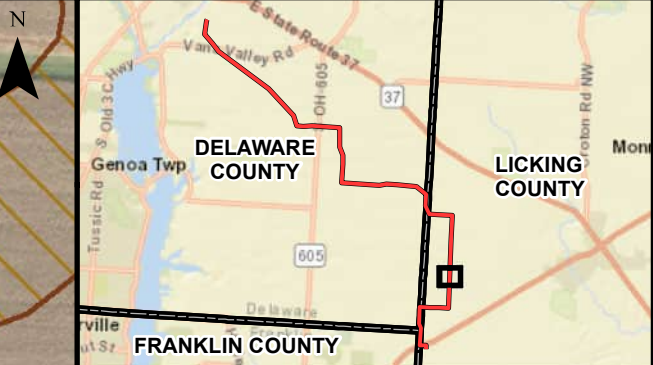
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- Previously Delineated Upland Data Point
- Previously Delineated Intermittent Stream
- Previously Delineated Perennial Stream
- Previously Delineated PEM Wetland
- Previously Delineated Pond
- NHD Stream (USGS)
- Project Survey Area - Original Report
- NWI Wetland (USFWS)
- NFHL 100-Year Floodplain (FEMA)
- HUC 12 (USGS)
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- Hydric SSURGO Soil Map Unit (NRCS)



Vassel - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

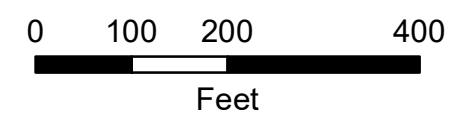
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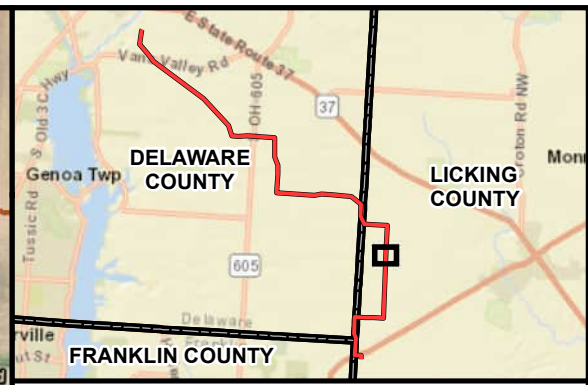
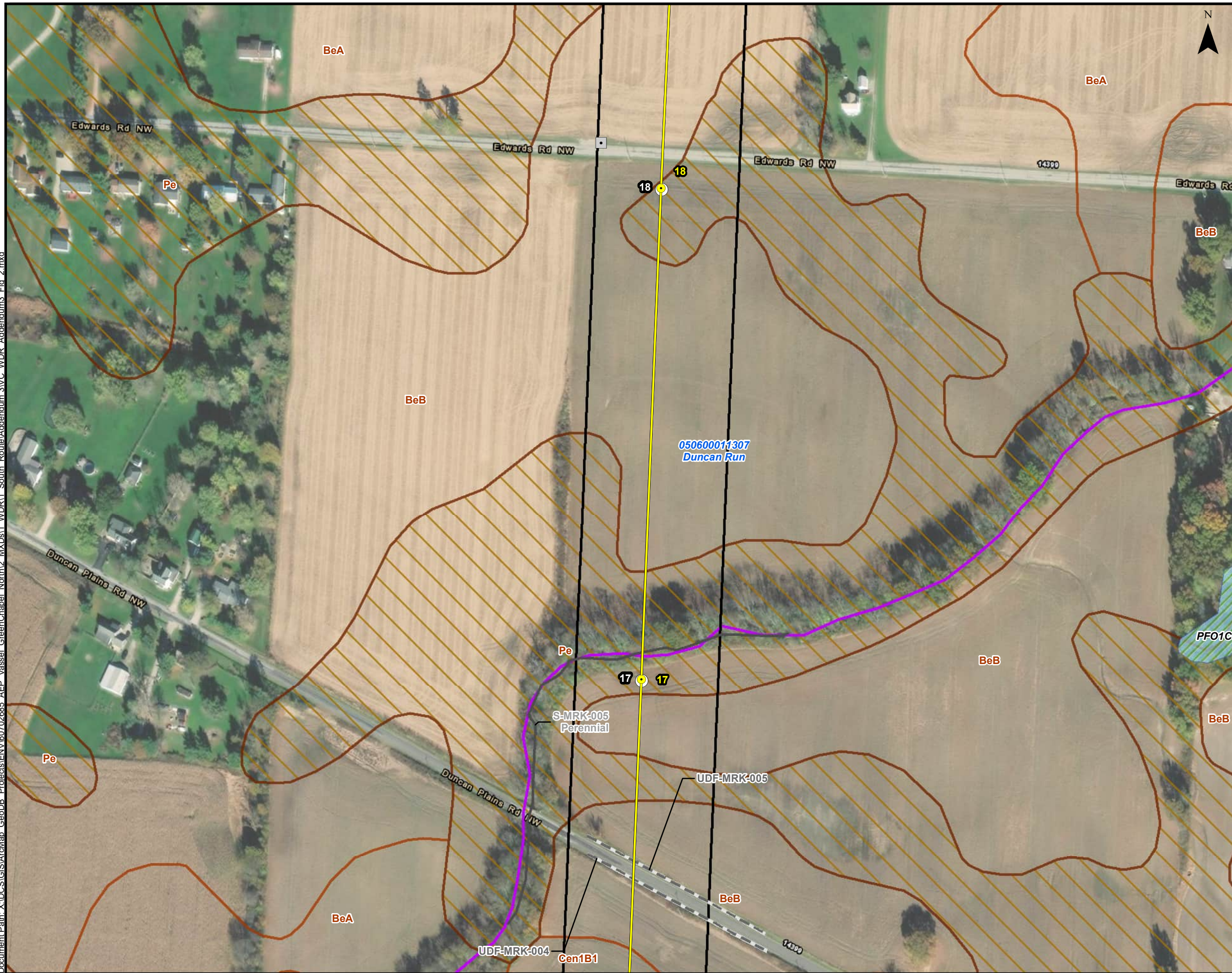
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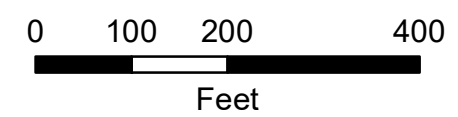
Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

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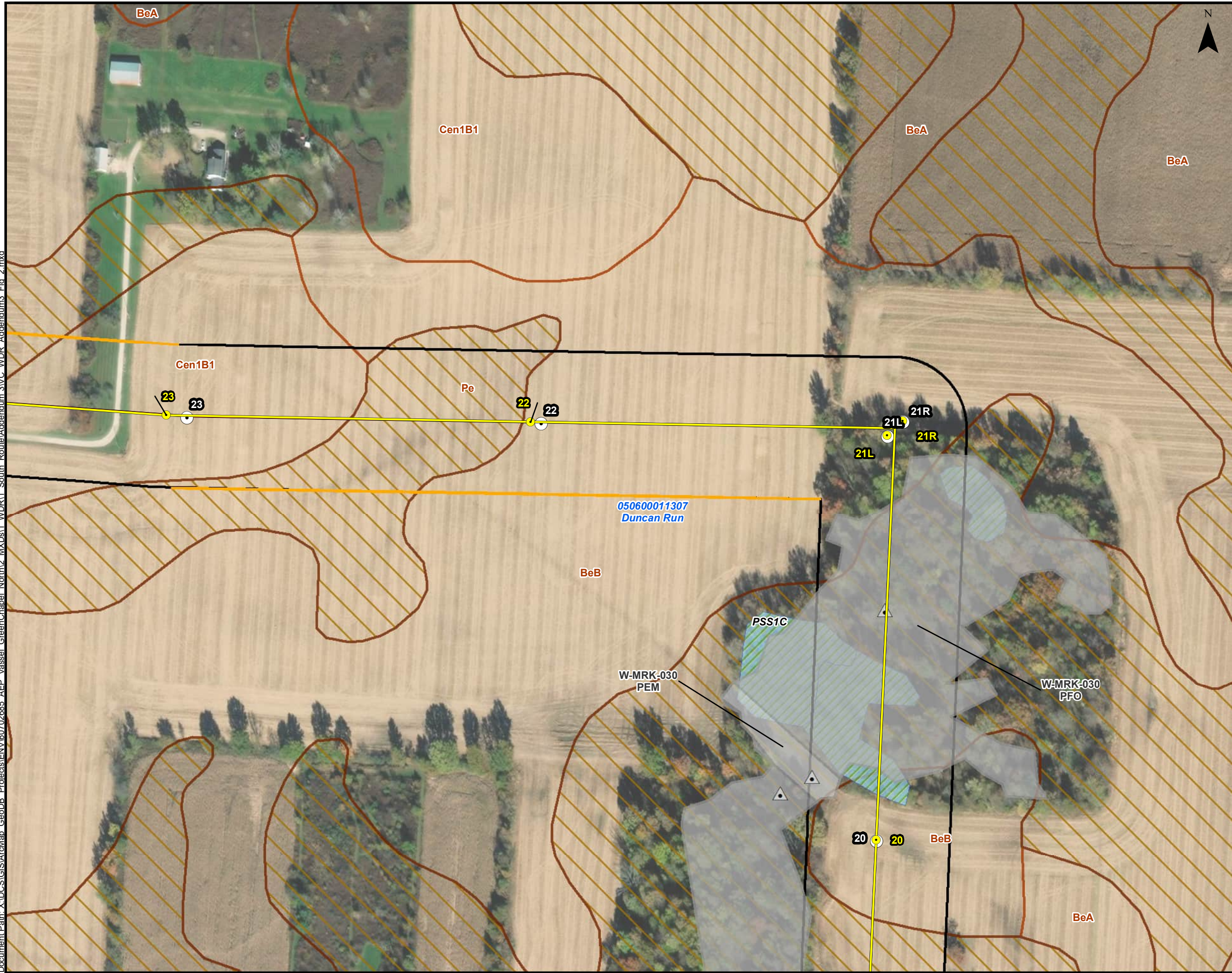


Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

FIGURE 2  
SHEET 8 OF 28  
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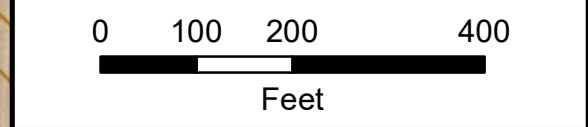


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**Soil Map Unit Description**

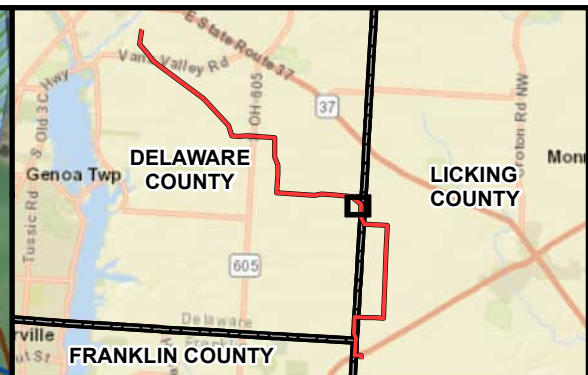
- BeB - Bennington silt loam, 2 to 6 percent slopes
- Cen1B1 - Centerburg silt loam, 2 to 6 percent slopes
- Pe - Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes



Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

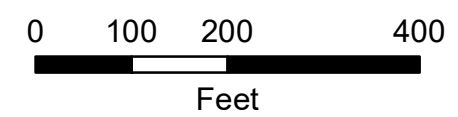
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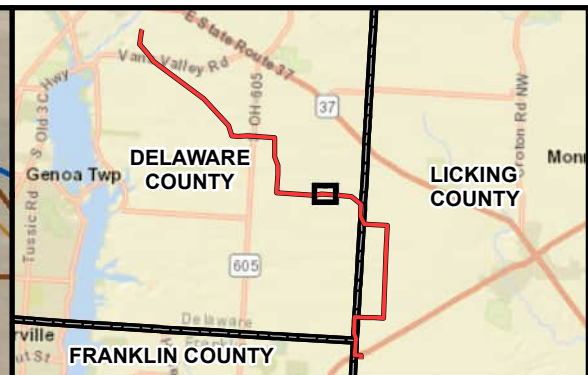
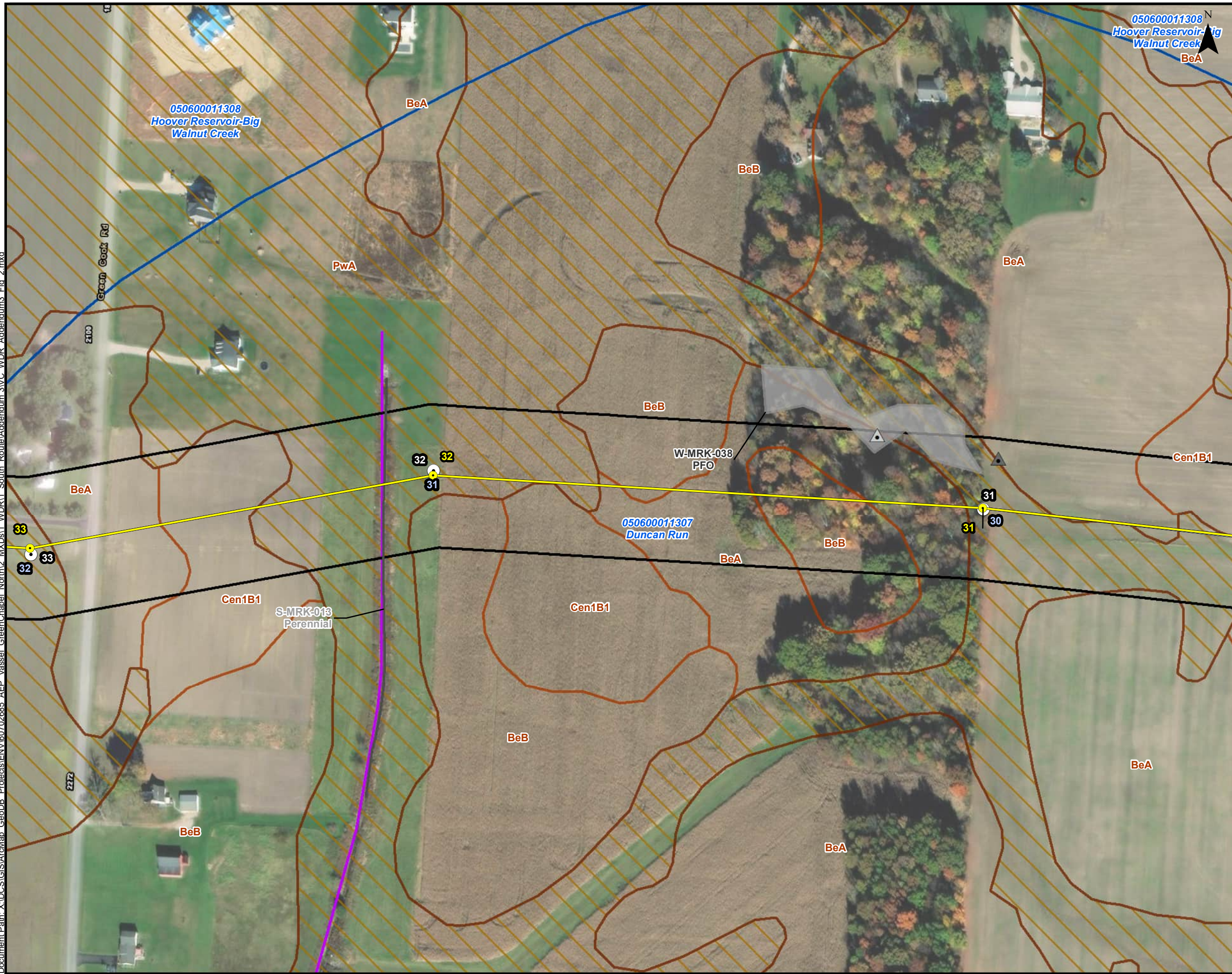
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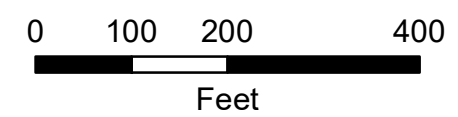
Vassell - Curley 345 kV  
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 Addendum 3

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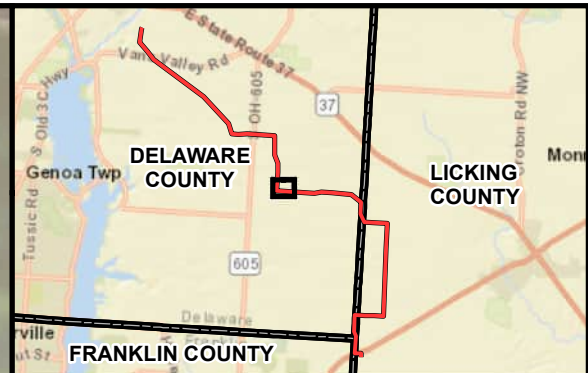
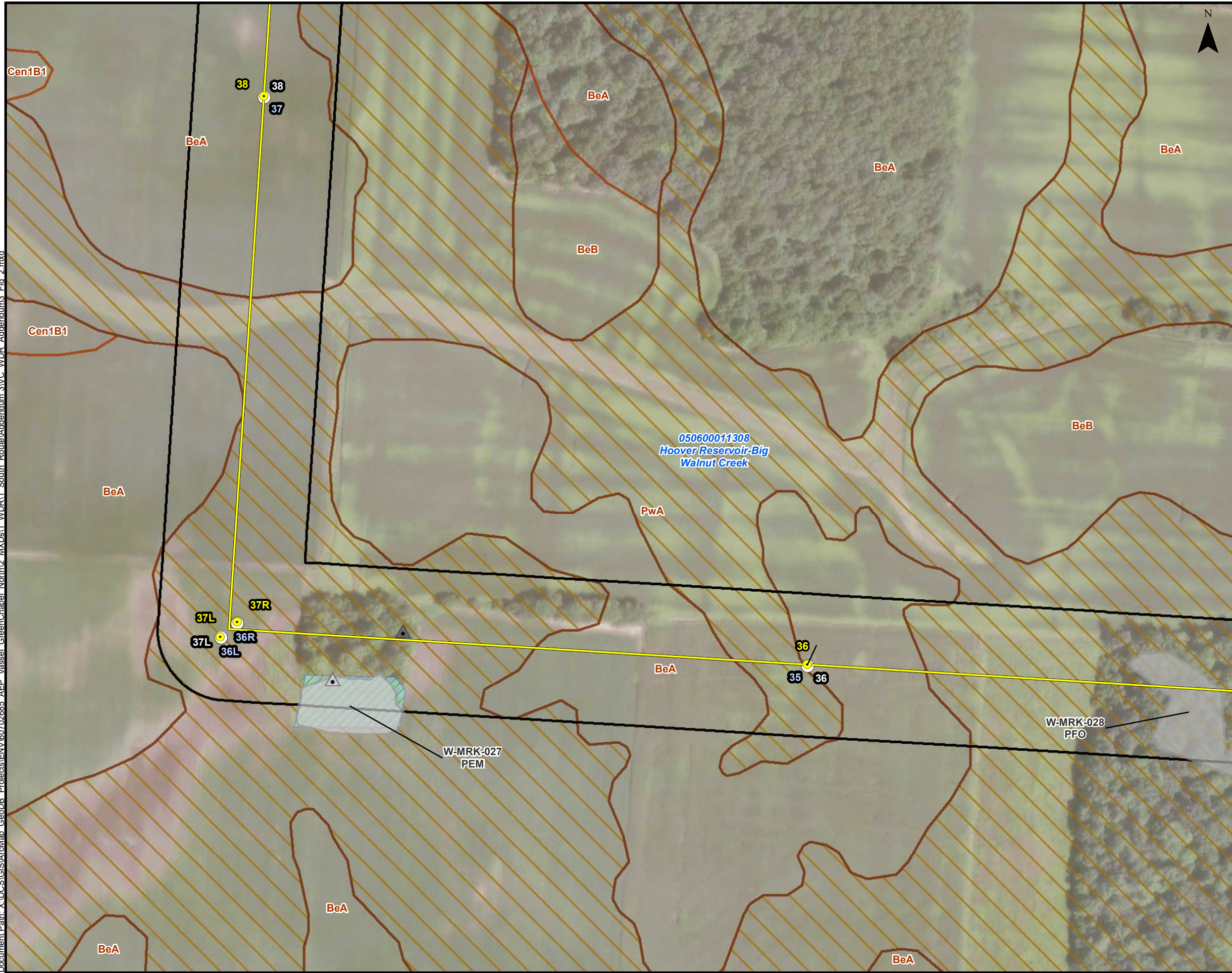


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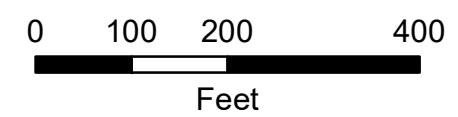
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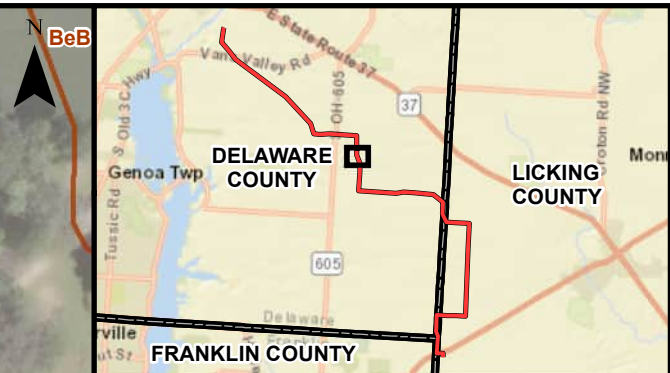
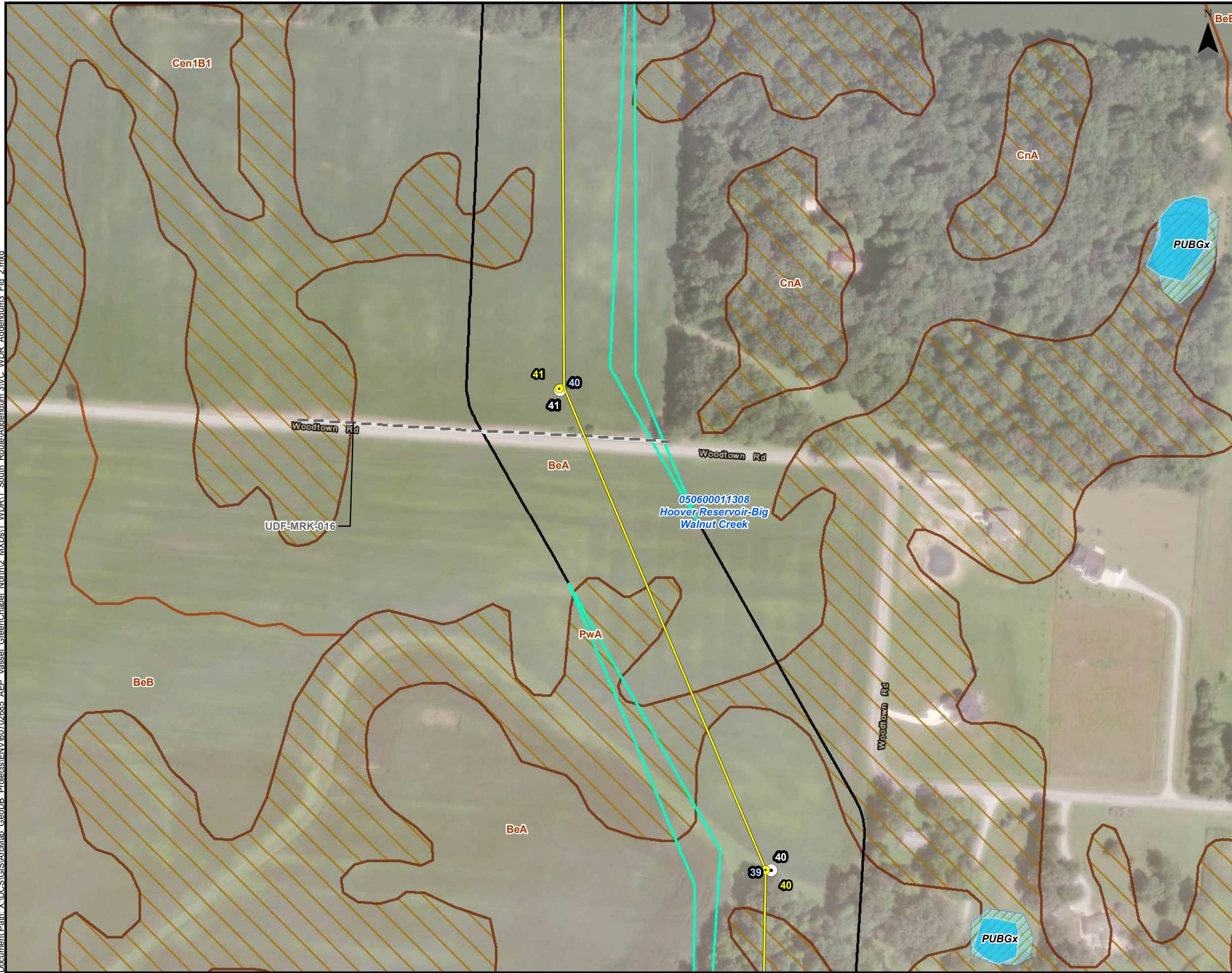
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  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kv Transmission Line
  - Previously Delineated Wetland Data Point
  - Previously Delineated Upland Data Point
  - Previously Delineated PEM Wetland
  - Previously Delineated PFO Wetland
  - Project Survey Area - Original Report
  - NWI Wetland (USFWS)
  - HUC 12 (USGS)
  - SSURGO Soil Map Unit (NRCS)
  - Hydric SSURGO Soil Map Unit (NRCS)



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

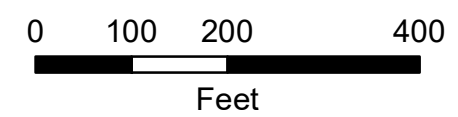
<b>FIGURE 2</b> SHEET 16 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
 Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_2.mxd



**Legend**

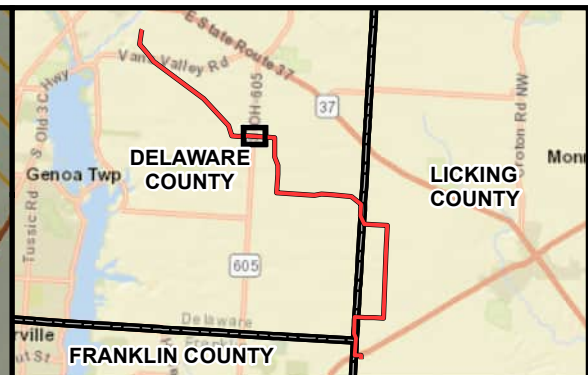
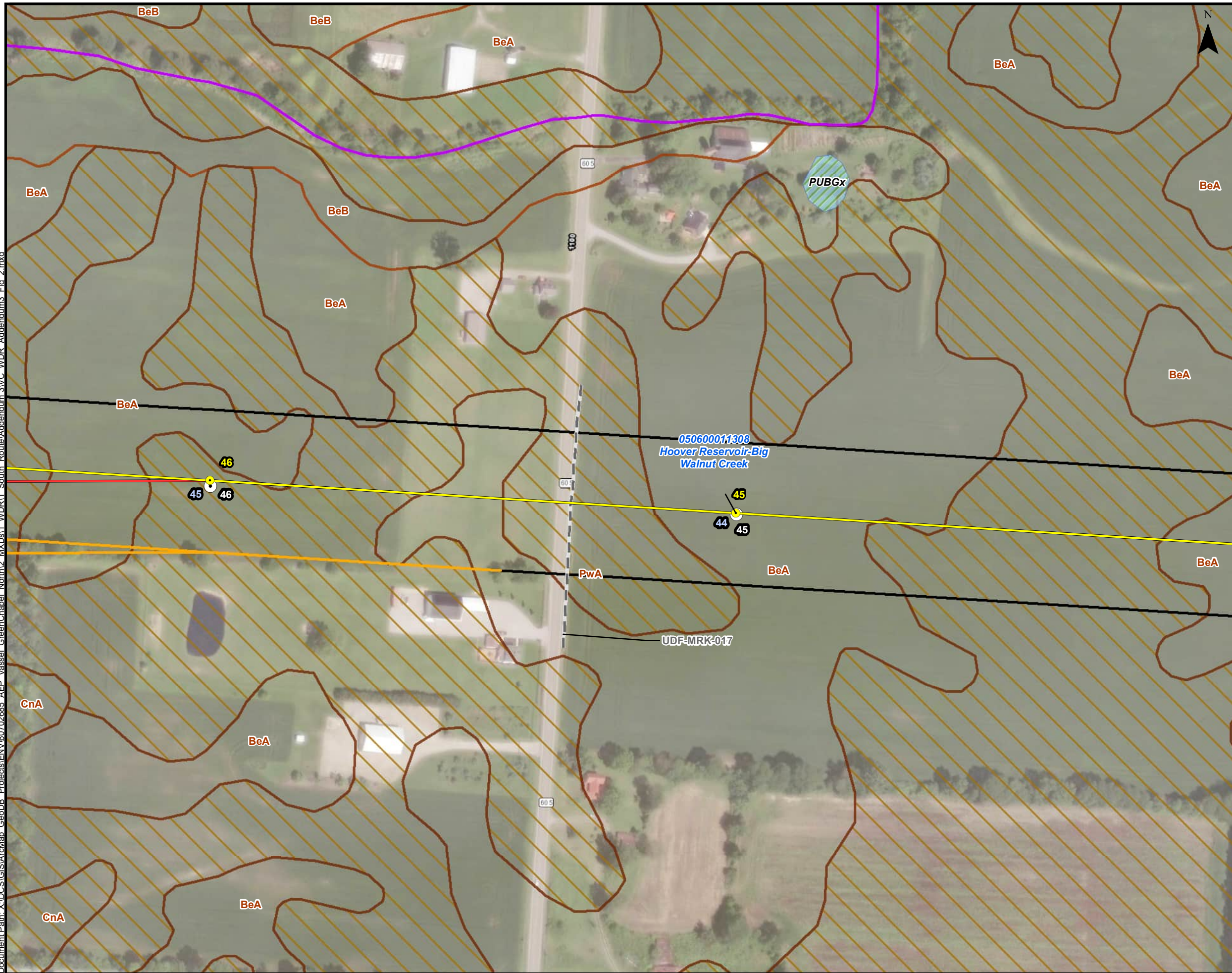
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Upland Drainage Feature
- Addendum 1 Survey Area
- Project Survey Area - Original Report
- NWI Wetland (USFWS)
- NHD Waterbody (USGS)
- HUC 12 (USGS)
- SSURGO Soil Map Unit (NRCS)
- Hydric SSURGO Soil Map Unit (NRCS)



AEP OHIO TRANSMISSION COMPANY  
 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 2</b> SHEET 18 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
 Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\ENV\60702698\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_2.mxd

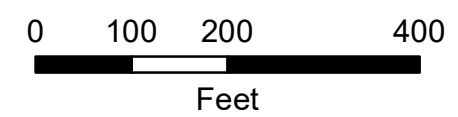


**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Upland Drainage Feature
- NHD Stream (USGS)
- Addendum 3 Survey Area
- Project Survey Area - Original Report
- NWI Wetland (USFWS)
- HUC 12 (USGS)
- SSURGO Soil Map Unit (NRCS)
- Hydric SSURGO Soil Map Unit (NRCS)

**Soil Map Unit Description**

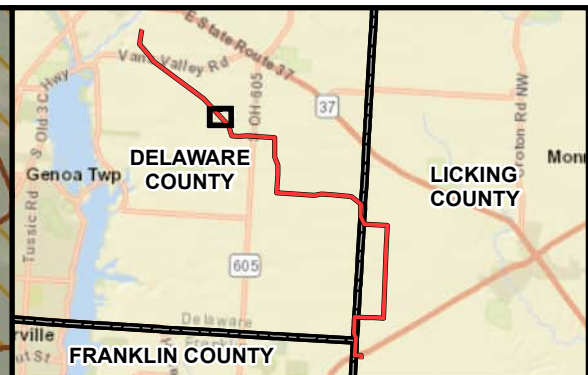
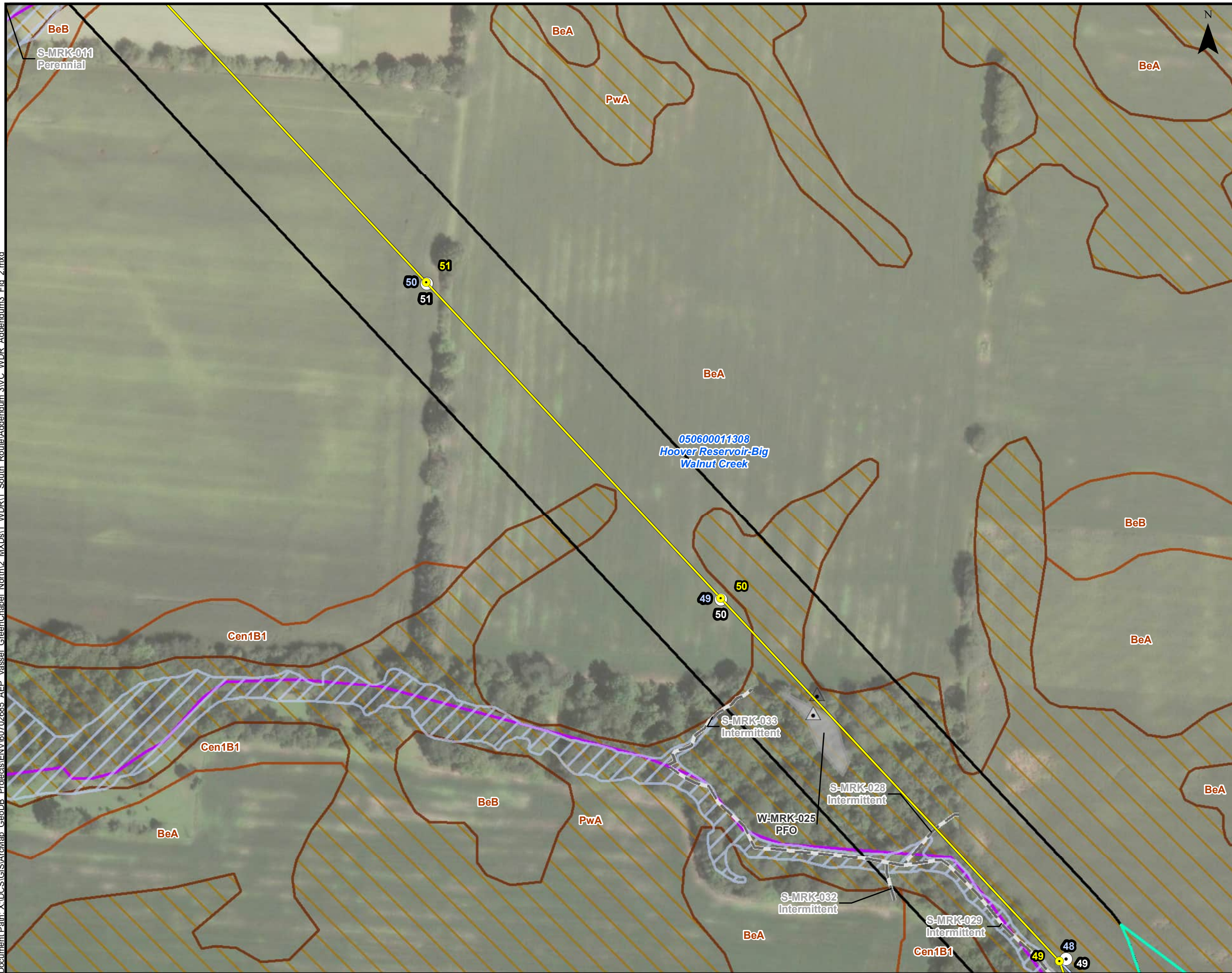
- BeA - Bennington silt loam, 0 to 2 percent slopes
- PwA - Pewamo silty clay loam, 0 to 1 percent slopes



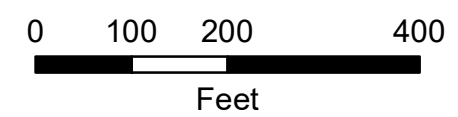
Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 2</b> SHEET 20 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
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CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
 Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\ENV\60702698\_Vassell\_Curley\Addendum 3\VC\_WDR\_Addendum3\_Fig\_2.mxd



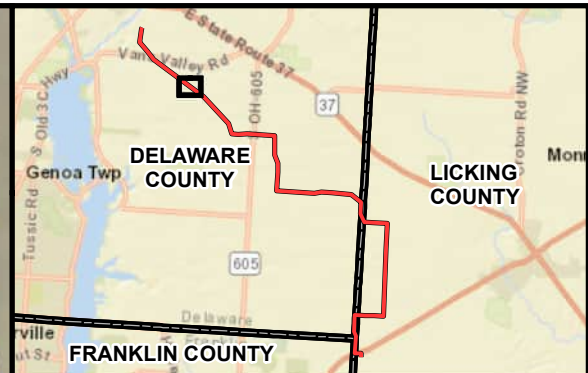
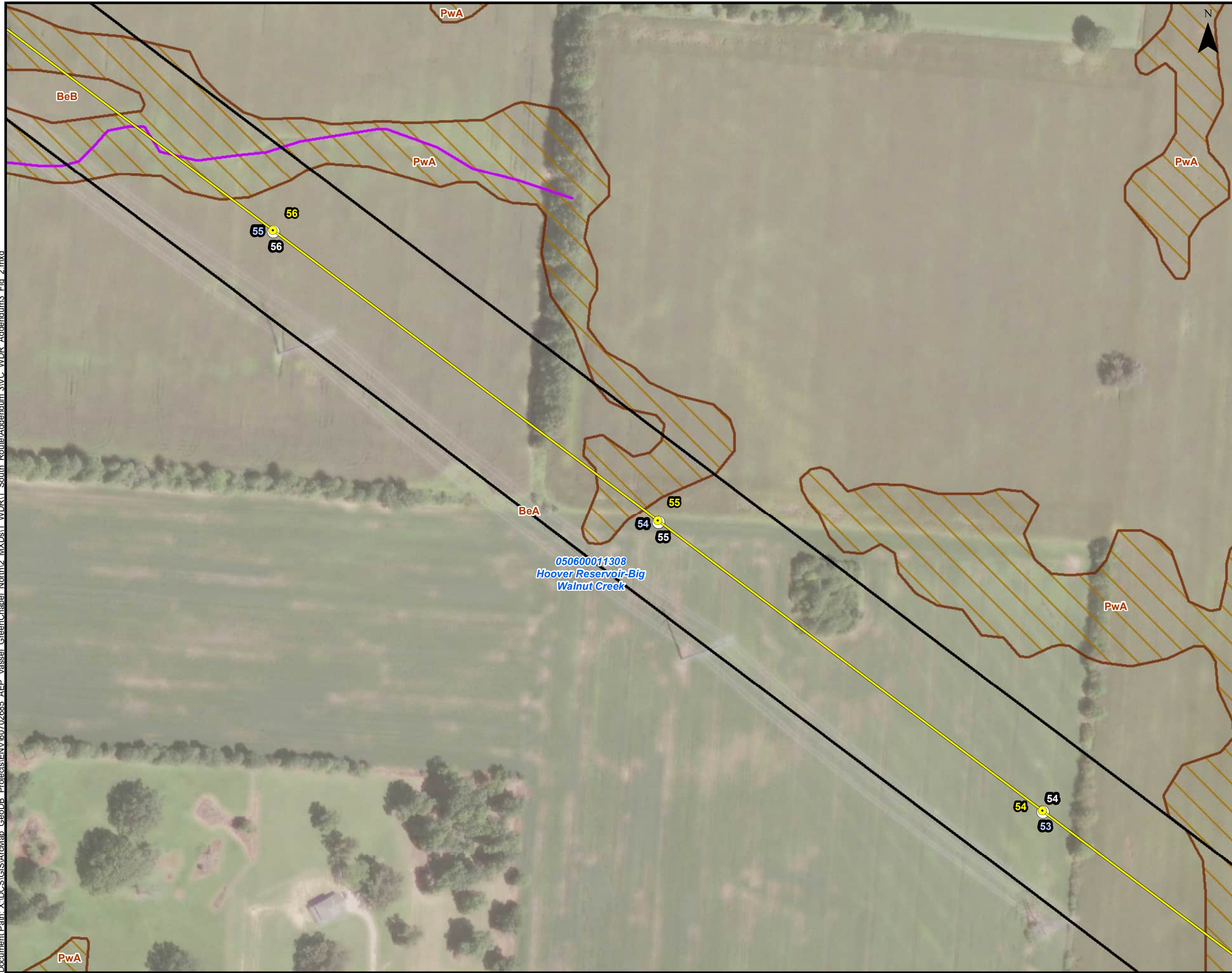
- Legend**
- Structure (Addendum 1)
  - Vassell - Curley 345kV Transmission Line (Addendum 1)
  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kV Transmission Line
  - Potential Alternative
  - ▲ Previously Delineated Wetland Data Point
  - ▲ Previously Delineated Upland Data Point
  - Previously Delineated Intermittent Stream
  - Previously Delineated Perennial Stream
  - Previously Delineated PFO Wetland
  - NHD Stream (USGS)
  - Addendum 1 Survey Area
  - Project Survey Area - Original Report
  - NFHL 100-Year Floodplain (FEMA)
  - HUC 12 (USGS)
  - SSURGO Soil Map Unit (NRCS)
  - Hydric SSURGO Soil Map Unit (NRCS)



Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

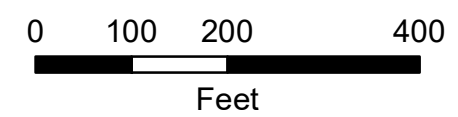
<b>FIGURE 2</b> SHEET 22 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_Geodb\_Projects\ENR\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_2.mxd



**Legend**

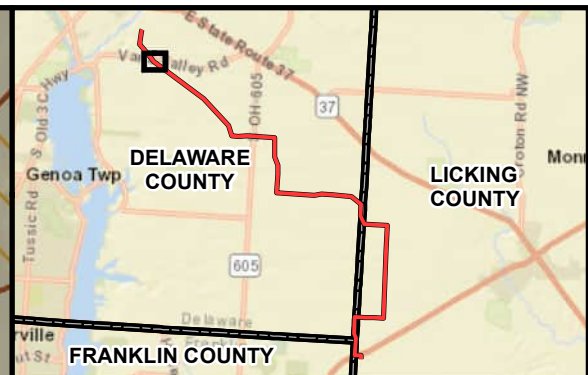
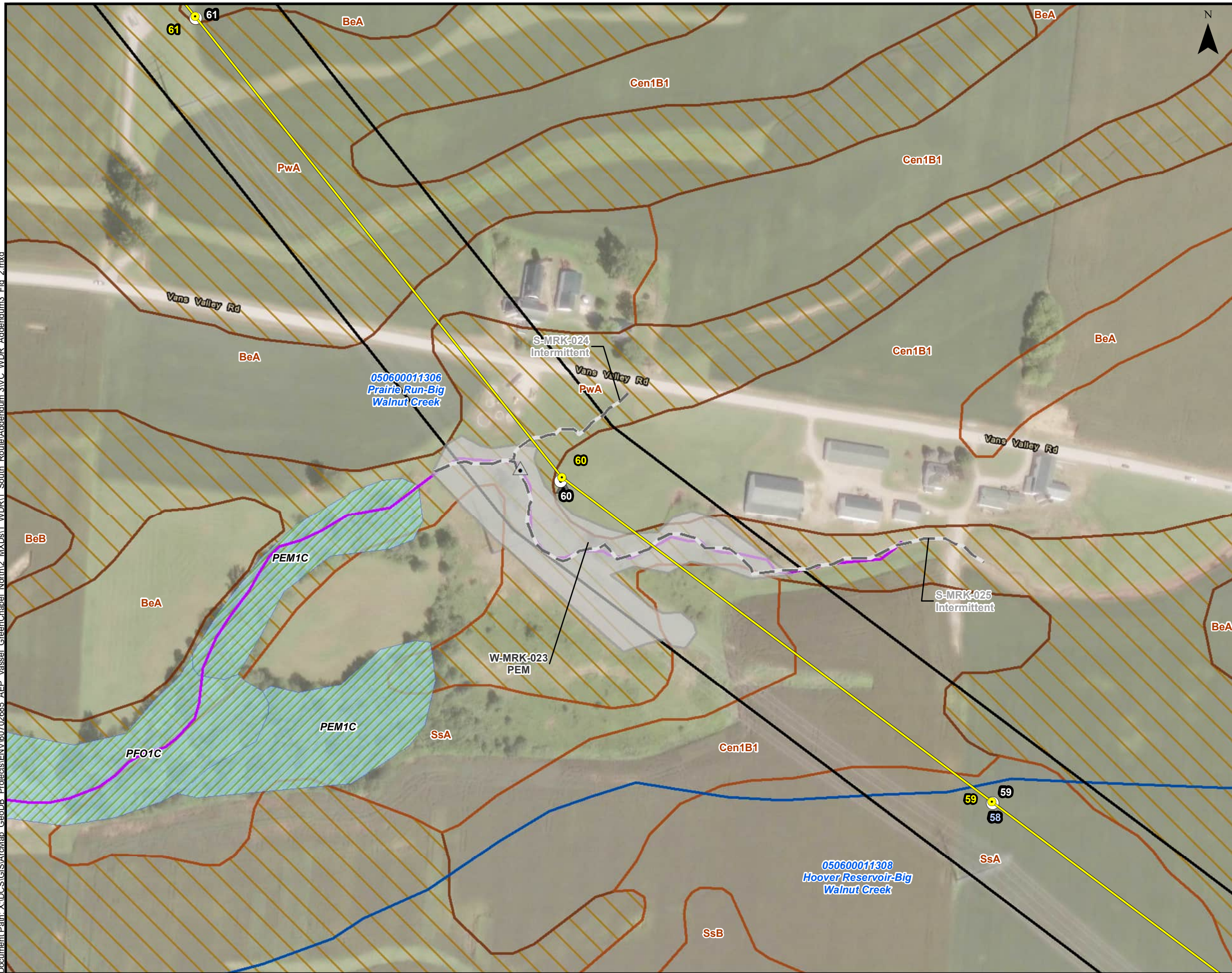
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- NHD Stream (USGS)
- ▭ Project Survey Area - Original Report
- ▭ HUC 12 (USGS)
- ▭ SSURGO Soil Map Unit (NRCS)
- ▭ Hydric SSURGO Soil Map Unit (NRCS)



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

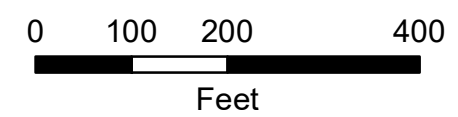
FIGURE 2 SHEET 24 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
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**Legend**

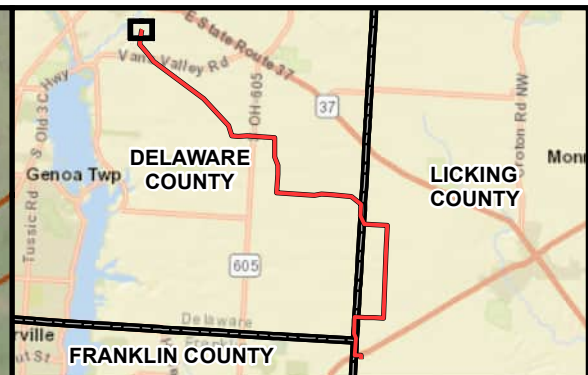
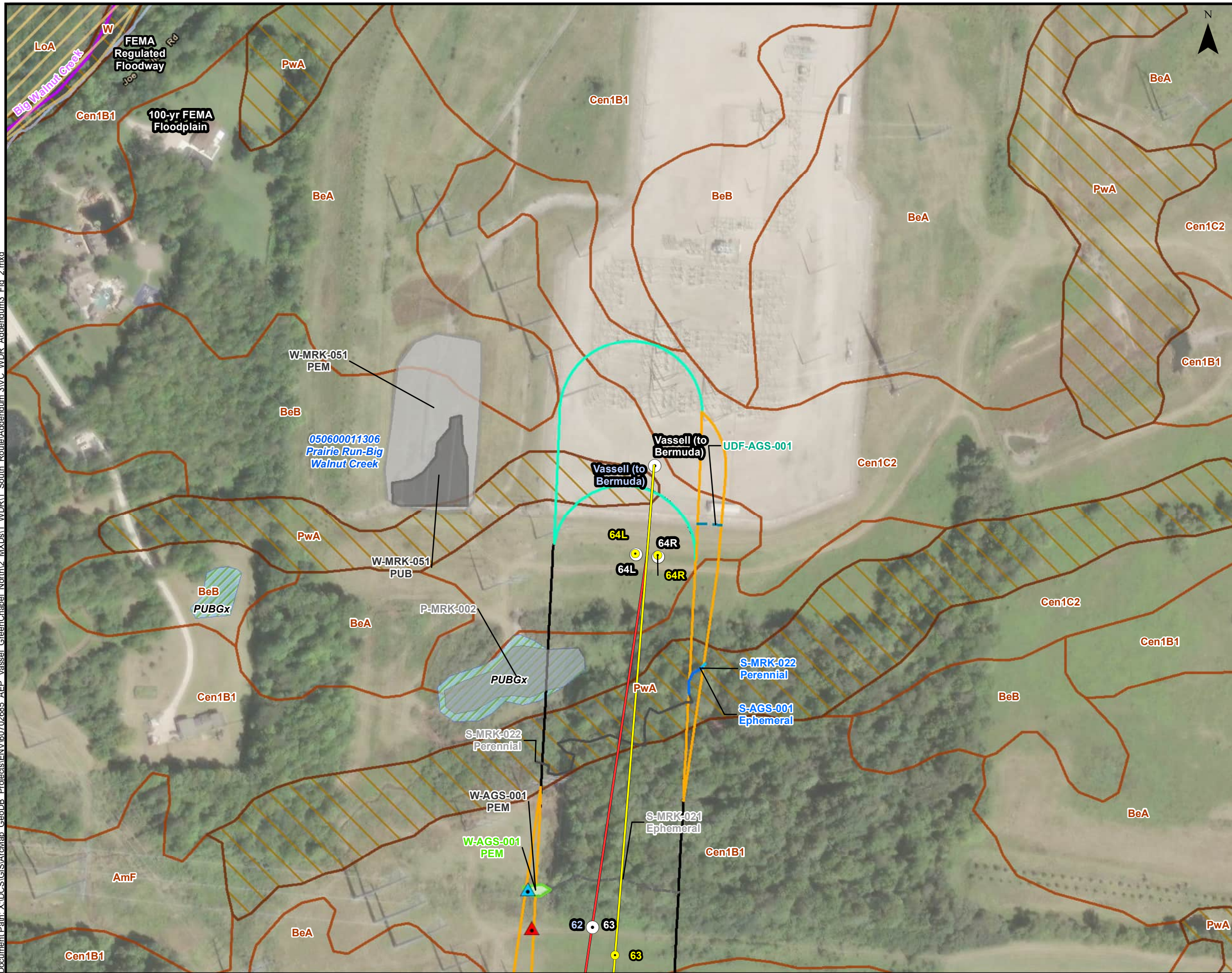
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Wetland Data Point
- Previously Delineated Upland Data Point
- Previously Delineated Intermittent Stream
- Previously Delineated PEM Wetland
- NHD Stream (USGS)
- Project Survey Area - Original Report
- NWI Wetland (USFWS)
- HUC 12 (USGS)
- SSURGO Soil Map Unit (NRCS)
- Hydric SSURGO Soil Map Unit (NRCS)



Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

FIGURE 2 SHEET 26 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
 Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_ProtecIs\ENV\60702698\_Vassell\_Curley\Addendum 3\VC\_WDR\_Addendum3\_Fig\_2.mxd



**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- ▲ Wetland Data Point
- ▲ Upland Data Point
- Delineated Upland Drainage Feature
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Delineated PEM Wetland
- Vassell - Curley 345KV Transmission Line
- Previously Delineated Ephemeral Stream
- Previously Delineated Perennial Stream
- Previously Delineated PEM Wetland
- Previously Delineated PUB Wetland
- Previously Delineated Pond
- NHD Stream (USGS)
- Addendum 3 Survey Area
- Addendum 1 Survey Area
- Project Survey Area - Original Report
- NWI Wetland (USFWS)
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- HUC 12 (USGS)
- SSURGO Soil Map Unit (NRCS)
- Hydric SSURGO Soil Map Unit (NRCS)

**Soil Map Unit Description**

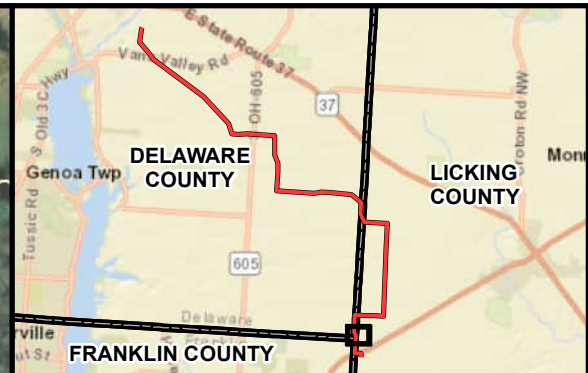
BeB - Bennington silt loam, 2 to 6 percent slopes  
 Cen1B1 - Centerburg silt loam, 2 to 6 percent slopes  
 Cen1C2 - Centerburg silt loam, 6 to 12 percent slopes, eroded  
 PwA - Pewamo silty clay loam, 0 to 1 percent slopes

0 100 200 400  
 Feet

Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

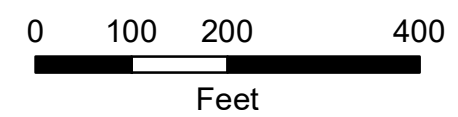
<b>FIGURE 2</b> SHEET 28 OF 28 SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_Addendum3\_Fig\_3.mxd



**Legend**

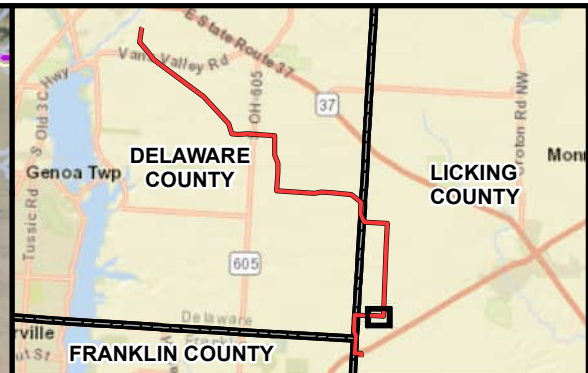
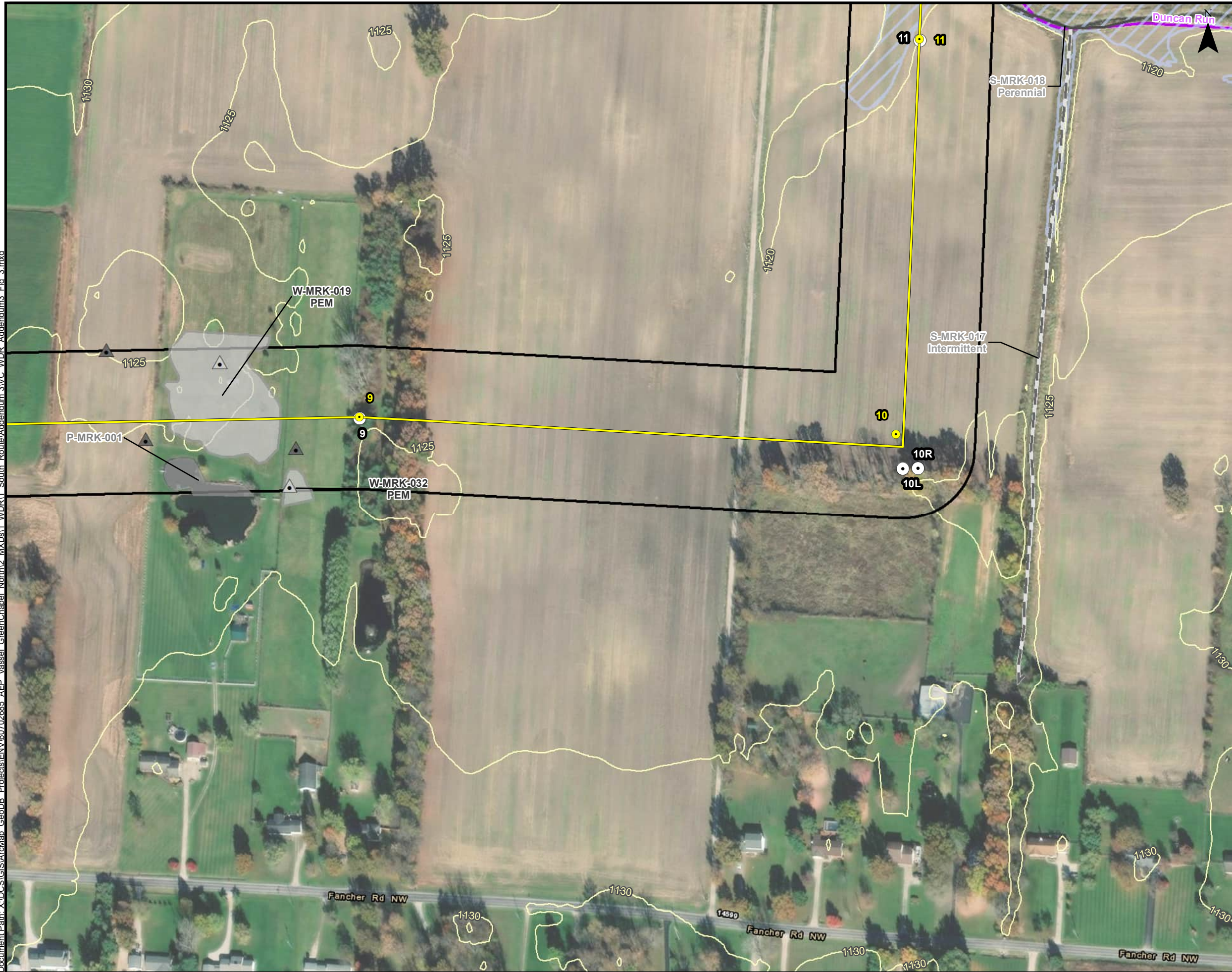
- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Vassell - Curley 345kv Transmission Line
- NHD Stream (USGS)
- Contour (5-Ft)
- Addendum 1 Survey Area
- Project Survey Area - Original Report



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

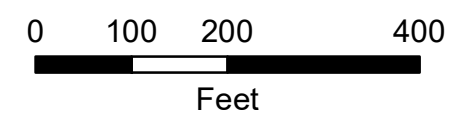
<b>FIGURE 3</b> SHEET 2 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
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**Legend**

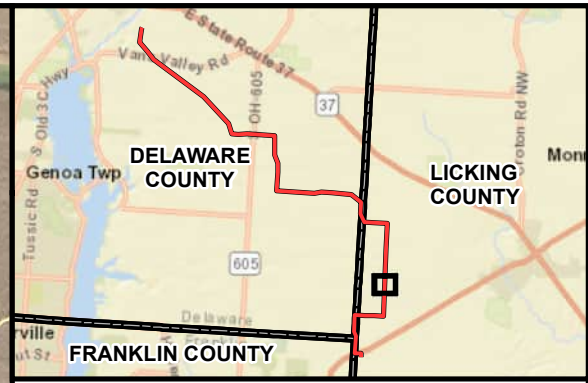
- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Vassell - Curley 345kv Transmission Line
- ▲ Previously Delineated Wetland Data Point
- ▲ Previously Delineated Upland Data Point
- Previously Delineated Intermittent Stream
- Previously Delineated Perennial Stream
- Previously Delineated PEM Wetland
- Previously Delineated Pond
- NHD Stream (USGS)
- Contour (5-Ft)
- Project Survey Area - Original Report
- NFHL 100-Year Floodplain (FEMA)



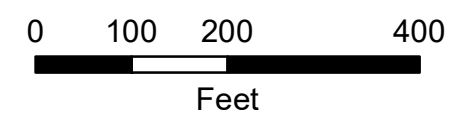
Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 3</b> SHEET 4 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
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CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



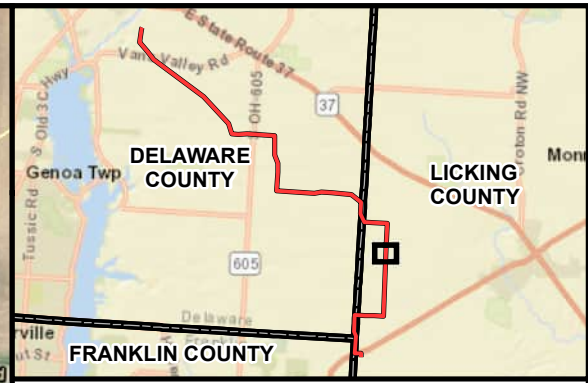
- Legend**
- Structure (Addendum 1)
  - Vassell - Curley 345kV Transmission Line (Addendum 1)
  - Proposed Structures
  - Vassell - Curley 345kV Transmission Line
  - Contour (5-Ft)
  - Project Survey Area - Original Report



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 3</b> SHEET 6 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
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JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\ENNV\60702698\_Vassell\_Curley\GreenChapel\_North\2\_MXD\11\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



**Legend**

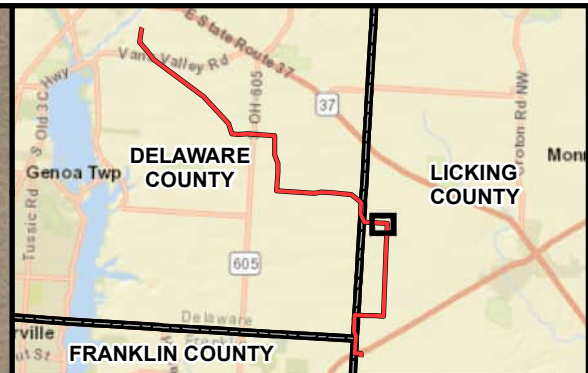
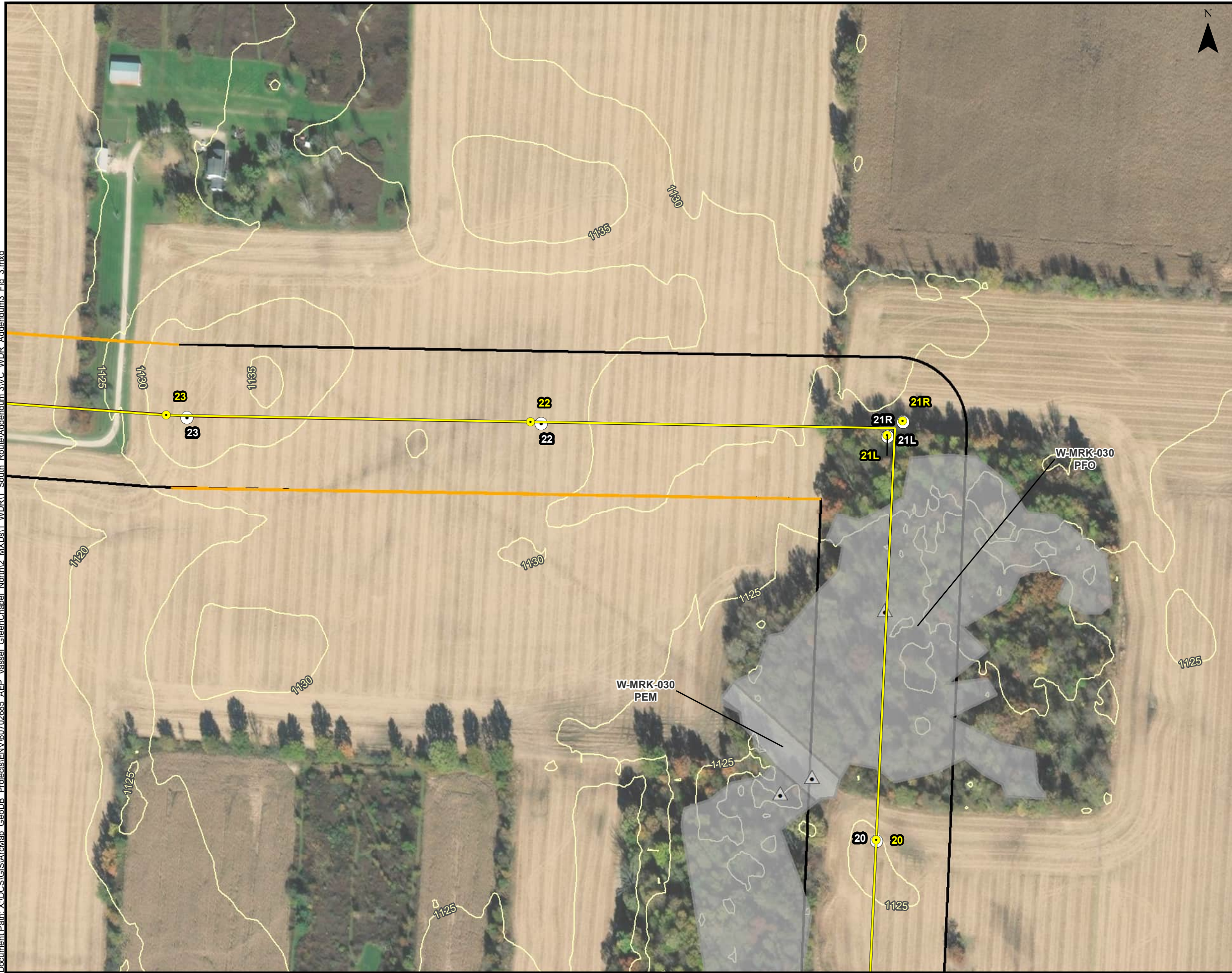
- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Culvert
- Vassell - Curley 345KV Transmission Line
- Previously Delineated Upland Drainage Feature
- Previously Delineated Perennial Stream
- NHD Stream (USGS)
- Contour (5-Ft)
- Project Survey Area - Original Report



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

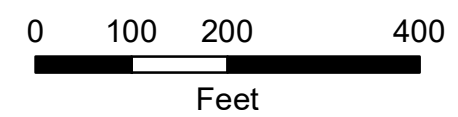
<b>FIGURE 3</b> SHEET 8 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
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Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



**Legend**

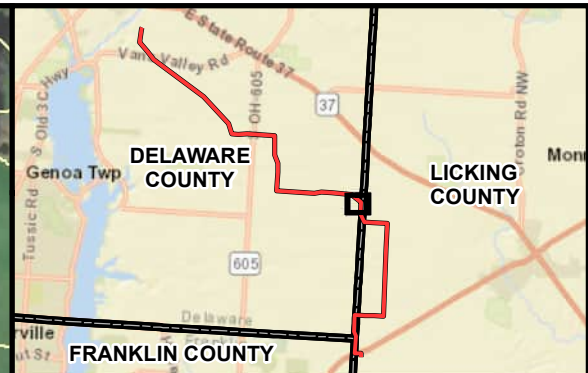
- Structure (Addendum 1)
- Vassel - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Vassel - Curley 345kV Transmission Line
- ▲ Previously Delineated Wetland Data Point
- Previously Delineated PEM Wetland
- Previously Delineated PFO Wetland
- Contour (5-Ft)
- ▭ Addendum 3 Survey Area
- ▭ Project Survey Area - Original Report



 Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

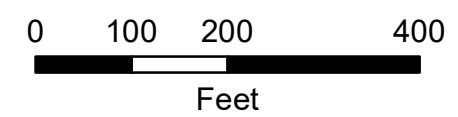
<b>FIGURE 3</b> SHEET 10 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
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Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\ENR\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



**Legend**

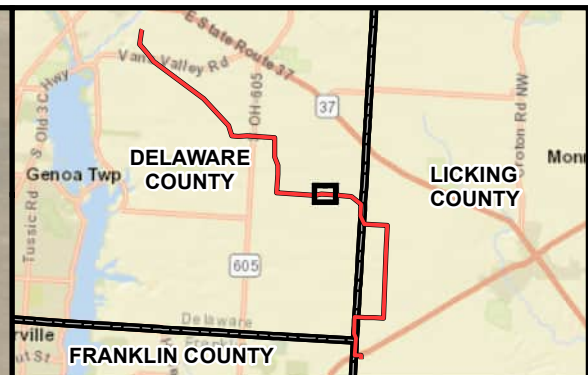
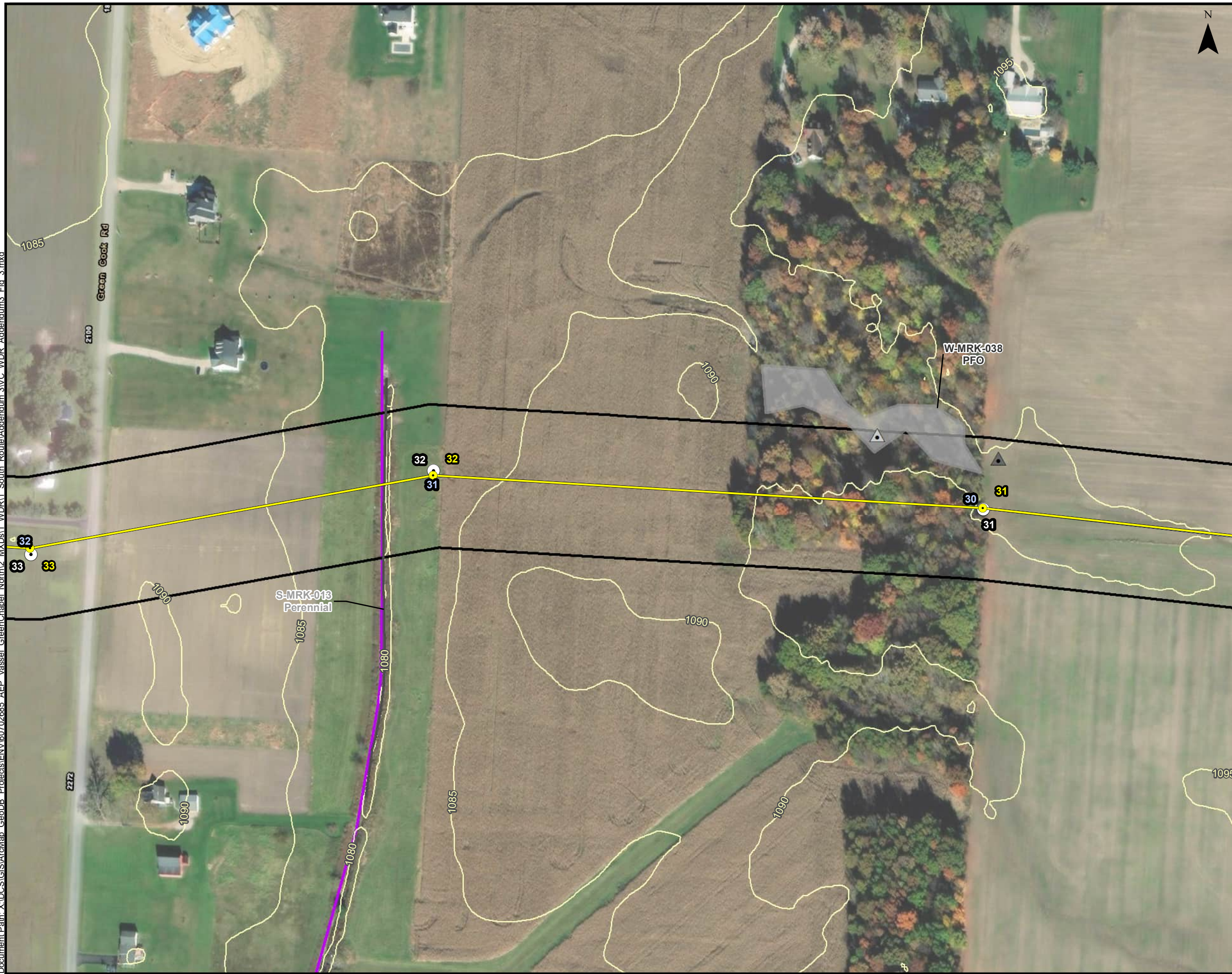
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Potential Alternative
- Previously Delineated Upland Drainage Feature
- Contour (5-Ft)
- ▭ Addendum 1 Survey Area
- ▭ Project Survey Area - Original Report



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

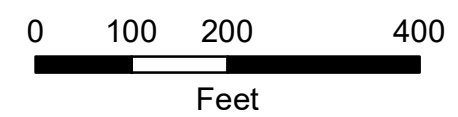
<b>FIGURE 3</b> SHEET 12 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



**Legend**

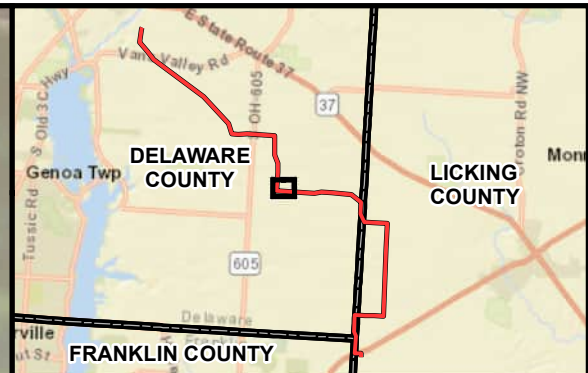
- Structure (Addendum 1)
- Vassel - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassel - Curley 345KV Transmission Line
- Potential Alternative
- ▲ Previously Delineated Wetland Data Point
- ▲ Previously Delineated Upland Data Point
- Previously Delineated Perennial Stream
- Previously Delineated PFO Wetland
- NHD Stream (USGS)
- Contour (5-Ft)
- Project Survey Area - Original Report



 Vassel - Curley 345 kV  
Transmission Line Project  
Addendum 3

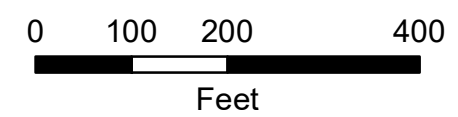
<b>FIGURE 3</b> SHEET 14 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
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JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
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**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Wetland Data Point
- Previously Delineated Upland Data Point
- Previously Delineated PEM Wetland
- Previously Delineated PFO Wetland
- Contour (5-Ft)
- Project Survey Area - Original Report

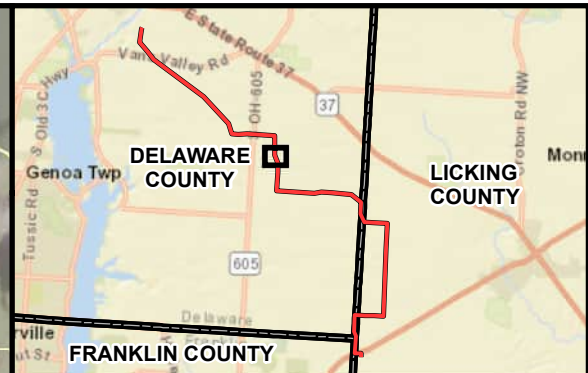


 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

**FIGURE 3**  
SHEET 16 OF 28  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

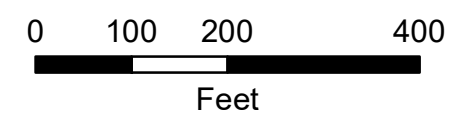
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CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702698\_Vassell - Curley 345kV Transmission Line Project\Addendum 3\Fig\_3.mxd



**Legend**

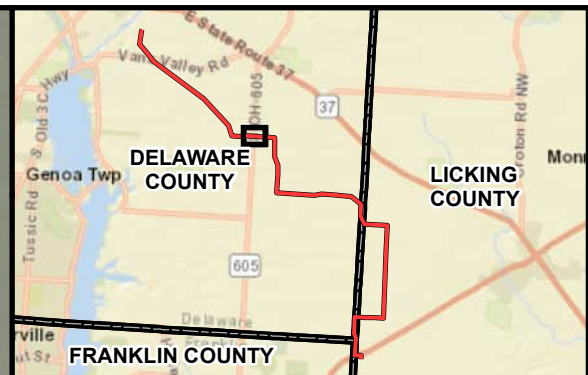
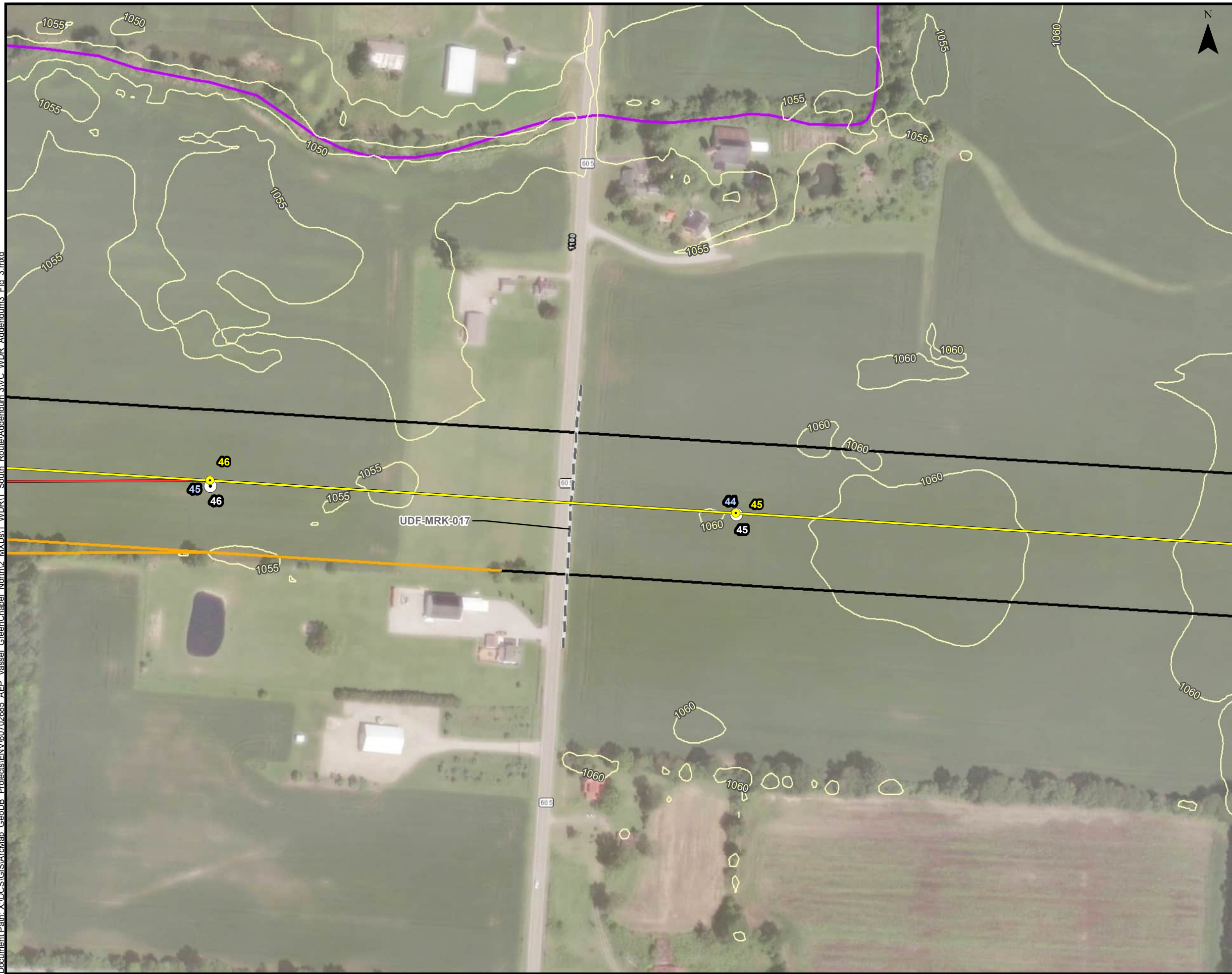
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Upland Drainage Feature
- Contour (5-Ft)
- Addendum 1 Survey Area
- Project Survey Area - Original Report



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

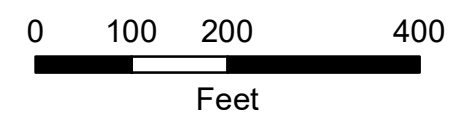
<b>FIGURE 3</b> SHEET 18 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\EN\60702685\_AEP\_Vassel\_GreenChapel\_North\2\_MXD\1\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



**Legend**

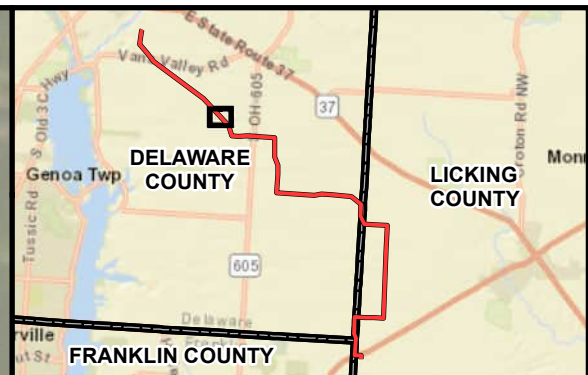
- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Upland Drainage Feature
- NHD Stream (USGS)
- Contour (5-Ft)
- ▭ Addendum 3 Survey Area
- ▭ Project Survey Area - Original Report



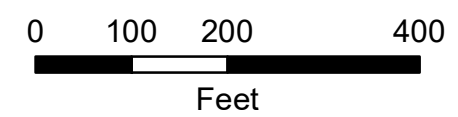
 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 3</b> SHEET 20 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
Document Path: X:\DCS\GIS\ArctMap\_GeoDB\_Projects\ENR\60702698\_AEP\_Vassell\_GreenChapel\_North\2\_MXD\11\_WDR1\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_3.mxd



- Legend**
- Structure (Addendum 1)
  - Vassell - Curley 345kV Transmission Line (Addendum 1)
  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kV Transmission Line
  - Potential Alternative
  - ▲ Previously Delineated Wetland Data Point
  - ▲ Previously Delineated Upland Data Point
  - Previously Delineated Intermittent Stream
  - Previously Delineated Perennial Stream
  - Previously Delineated PFO Wetland
  - NHD Stream (USGS)
  - Contour (5-Ft)
  - Addendum 1 Survey Area
  - Project Survey Area - Original Report
  - ▨ NFHL 100-Year Floodplain (FEMA)

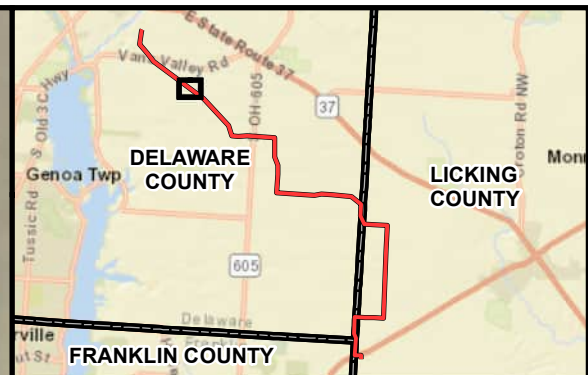


Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

FIGURE 3  
SHEET 22 OF 28  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

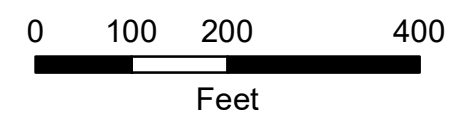
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**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- NHD Stream (USGS)
- Contour (5-Ft)
- ▭ Project Survey Area - Original Report

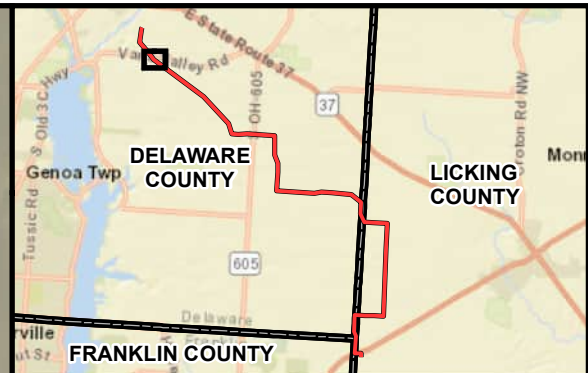
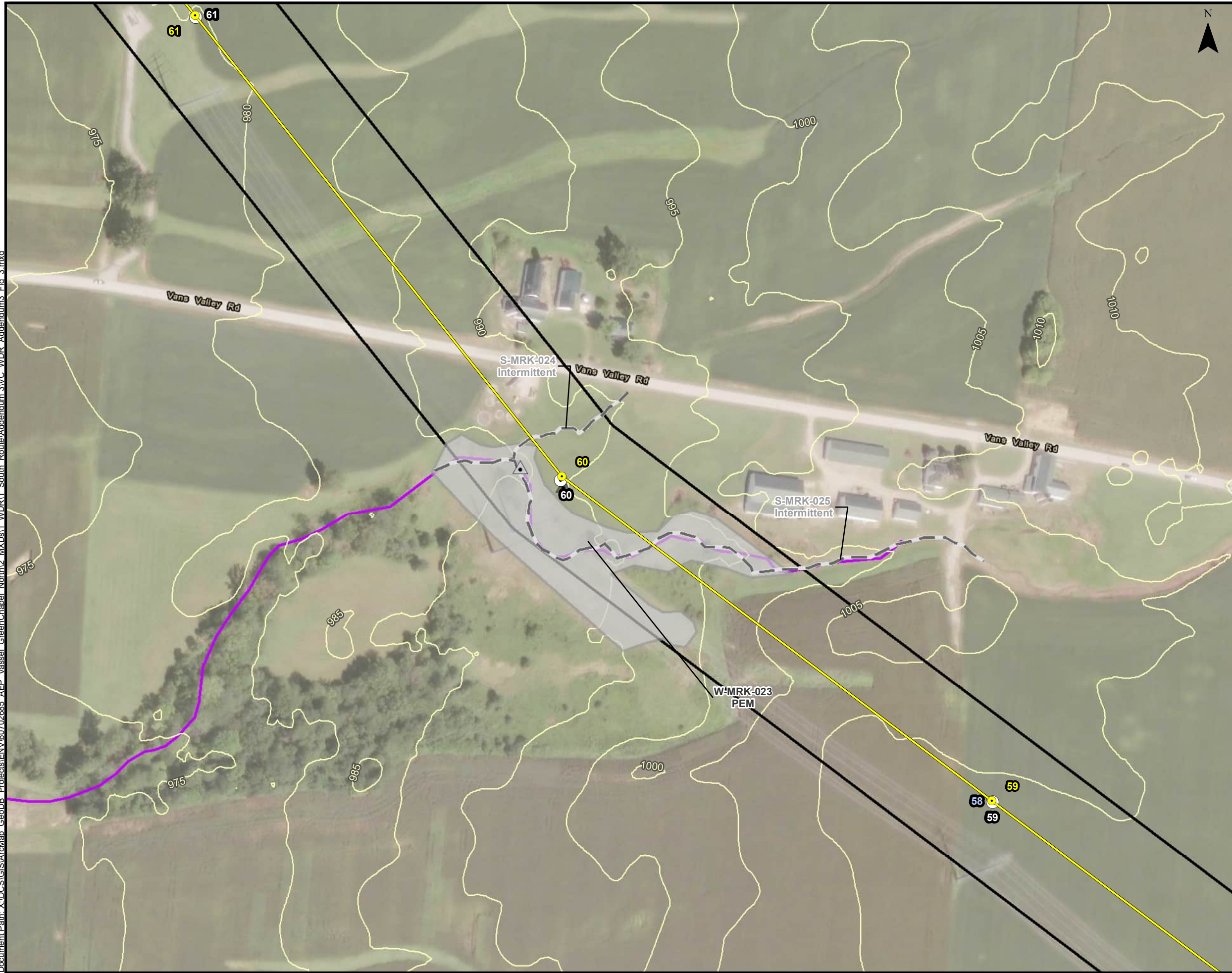


 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

**FIGURE 3**  
SHEET 24 OF 28  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

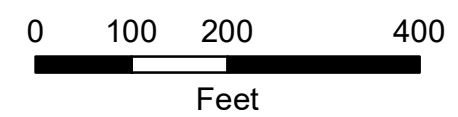
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JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
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**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kV Transmission Line
- Previously Delineated Wetland Data Point
- Previously Delineated Upland Data Point
- Previously Delineated Intermittent Stream
- Previously Delineated PEM Wetland
- NHD Stream (USGS)
- Contour (5-Ft)
- Project Survey Area - Original Report

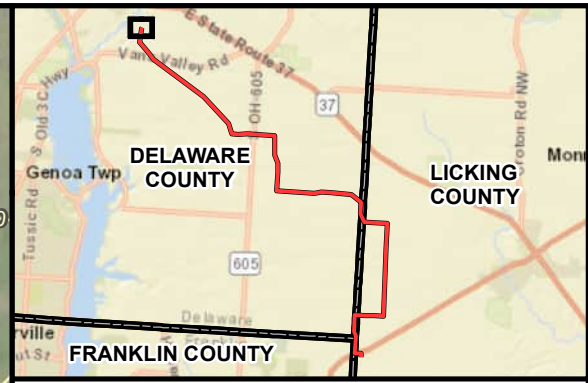
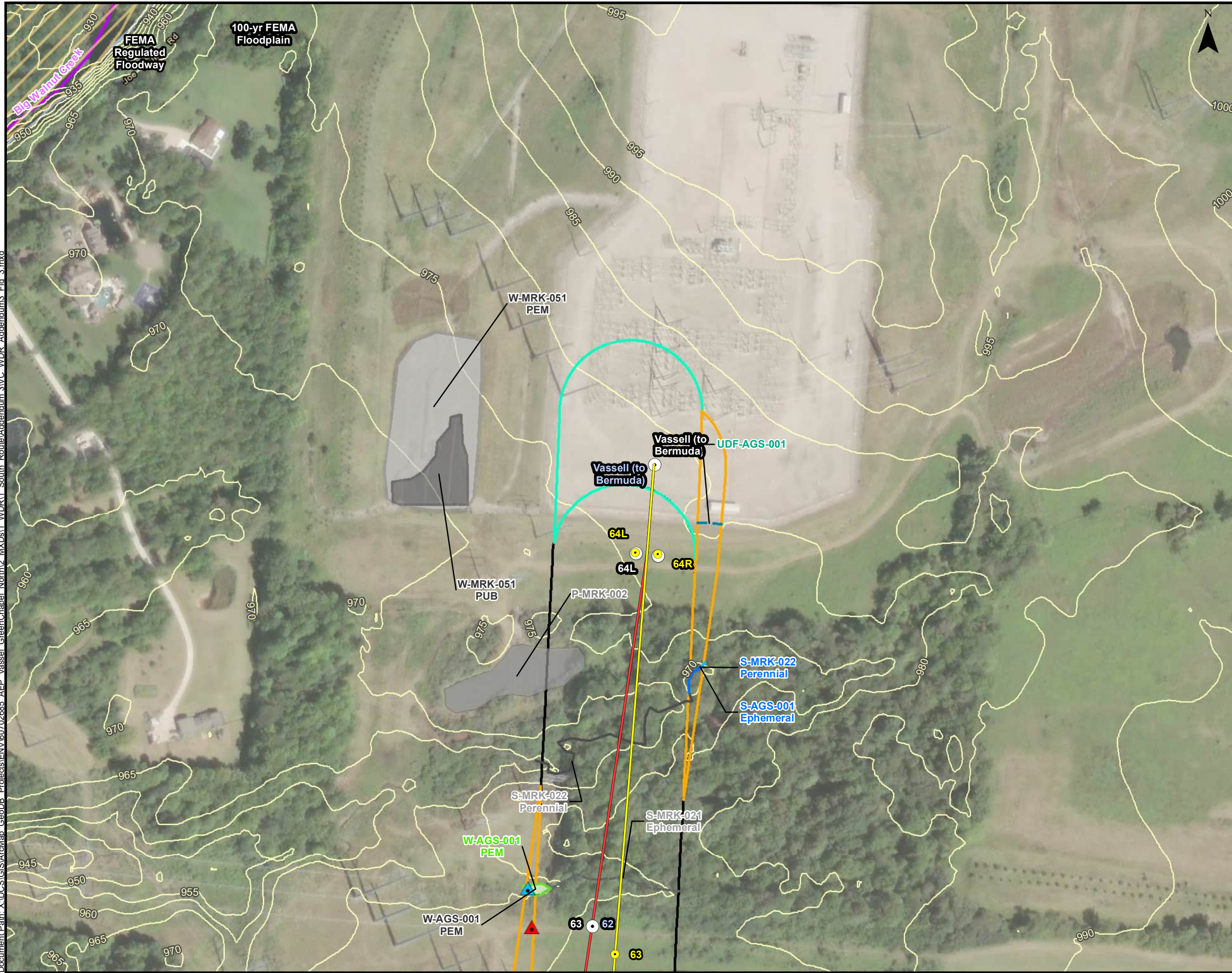


 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

**FIGURE 3**  
SHEET 26 OF 28  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

DATE: 2/7/2025	1 INCH = 200 FEET
CREATED BY: CJT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/7/2025  
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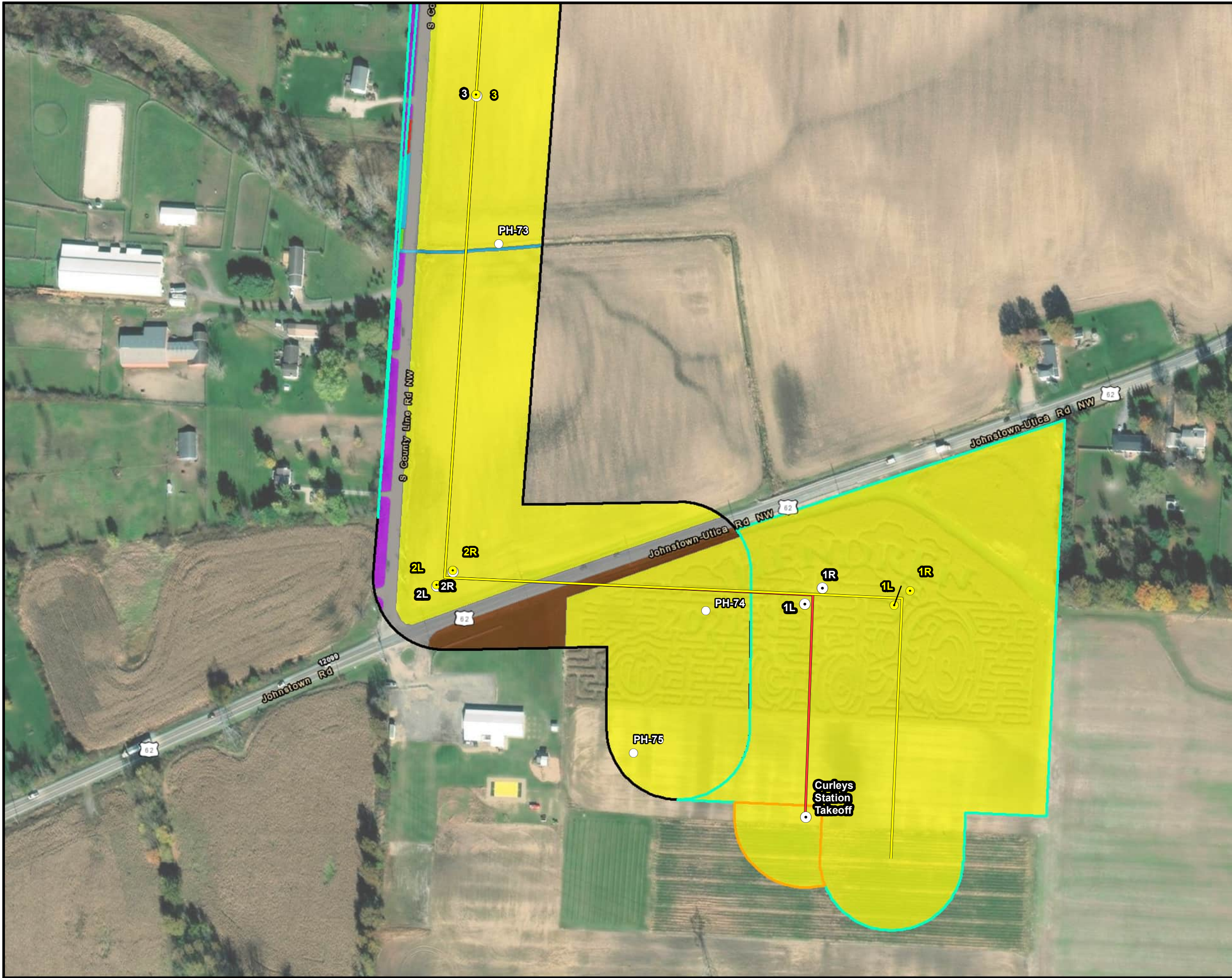
**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- ▲ Wetland Data Point
- ▲ Upland Data Point
- Delineated Upland Drainage Feature
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Delineated PEM Wetland
- Vassell - Curley 345kV Transmission Line
- - - Previously Delineated Ephemeral Stream
- Previously Delineated Perennial Stream
- Previously Delineated PEM Wetland
- Previously Delineated PUB Wetland
- Previously Delineated Pond
- NHD Stream (USGS)
- Contour (5-Ft)
- Addendum 3 Survey Area
- Addendum 1 Survey Area
- Project Survey Area - Original Report
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)

0 100 200 400  
Feet

Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 3 SHEET 28 OF 28 WETLAND DELINEATION AND STREAM ASSESSMENT MAP</b>	
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JOB NO.: 60702698	<b>AECOM</b>

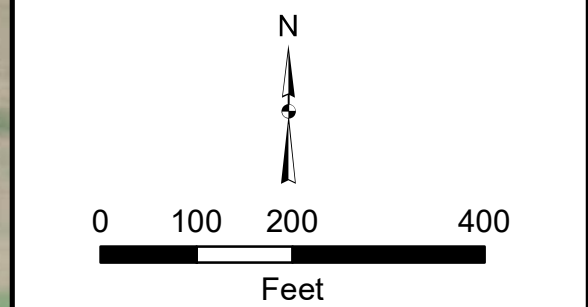


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Addendum 3
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

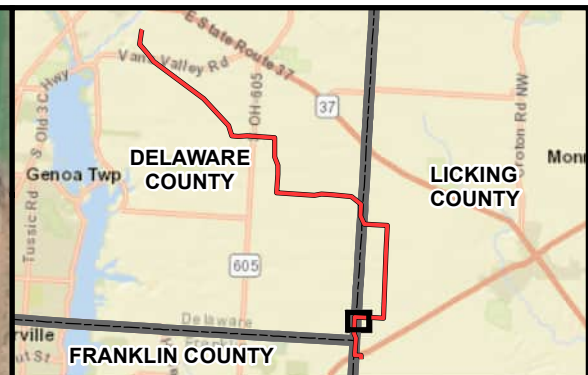
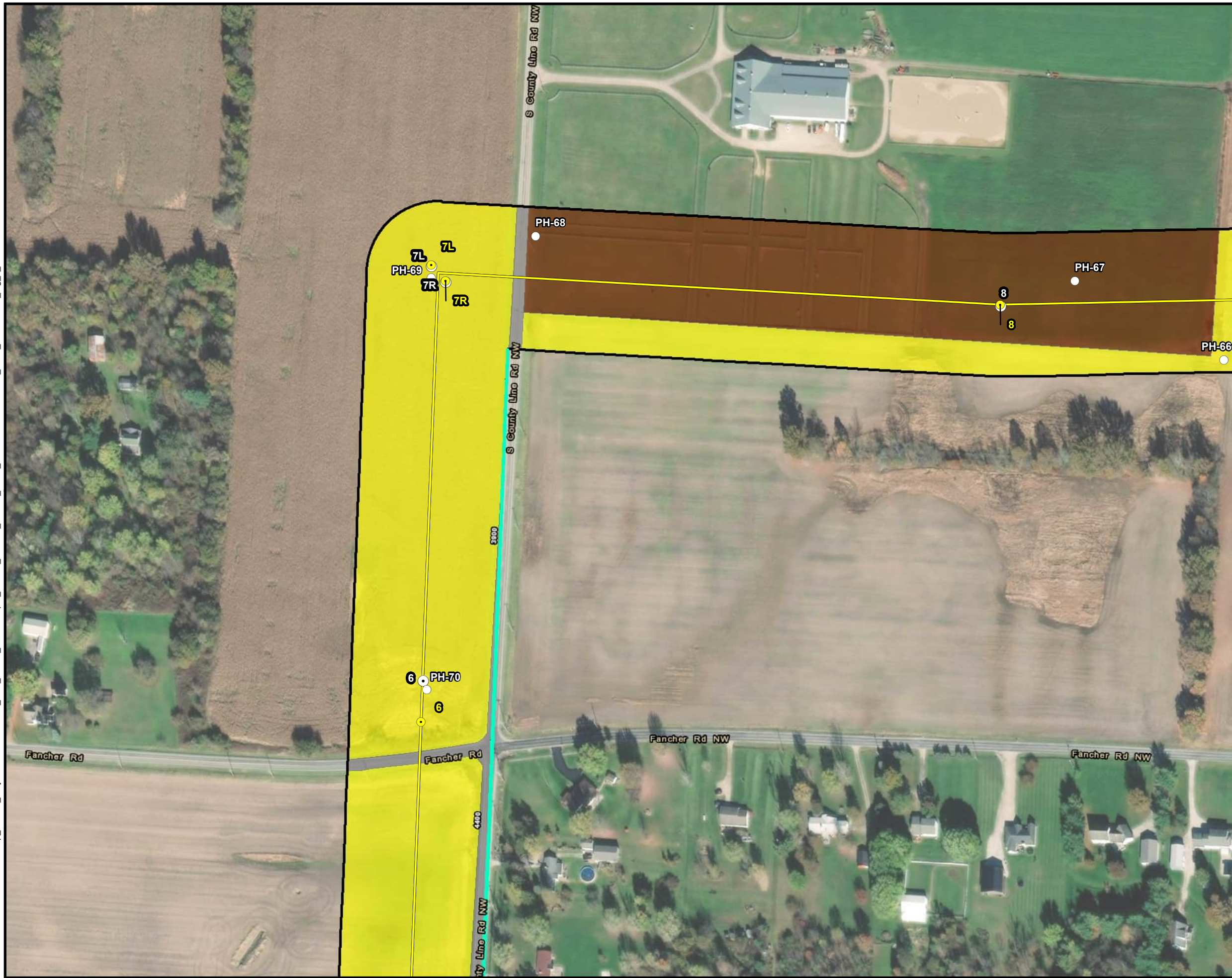
**Vegetative Community Type**

- Agriculture Row-Crop
- Landscaped
- Old Field
- Pasture/Hay Fields
- Streams/Wetlands
- Urban
- Woodland



 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 5</b> SHEET 1 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

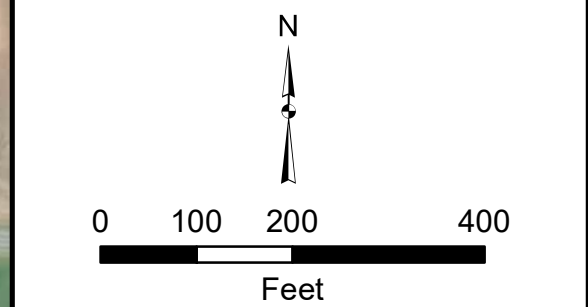


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

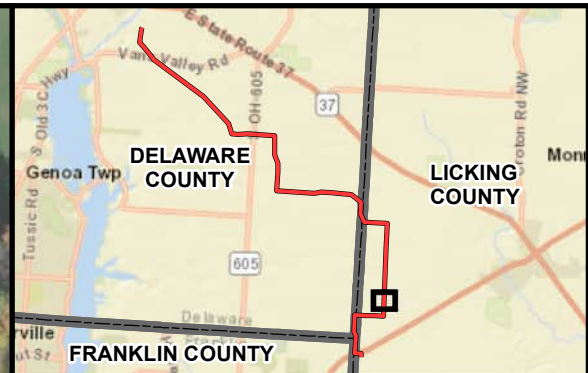
**Vegetative Community Type**

- Agriculture Row-Crop
- Landscaped
- Pasture/Hay Fields
- Urban

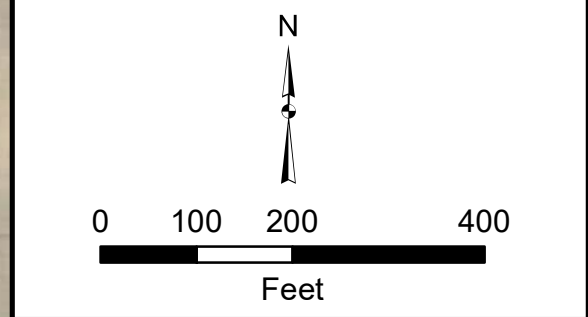


AEP OHIO TRANSMISSION COMPANY  
 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5 SHEET 3 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
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JOB NO.: 60702698	<b>AECOM</b>



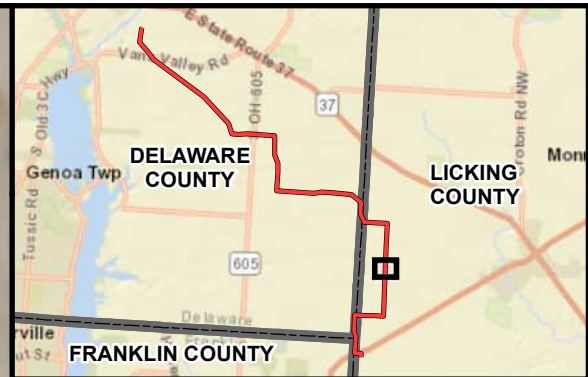
- Legend**
- Structure (Addendum 1)
  - Photograph Location (All Reports)
  - Proposed Structures
  - Vassell - Curley 345kv Transmission Line (Addendum 1)
  - Vassell - Curley 345 kV Transmission Line
  - Project Survey Area - Original Report
- Vegetative Community Type**
- Agriculture Row-Crop
  - Streams/Wetlands
  - Woodland



 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5  
 SHEET 5 OF 28  
 VEGETATIVE COMMUNITIES  
 ASSESSMENT MAP

DATE: 2/10/2025	1 INCH = 200 FEET
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JOB NO.: 60702698	<b>AECOM</b>

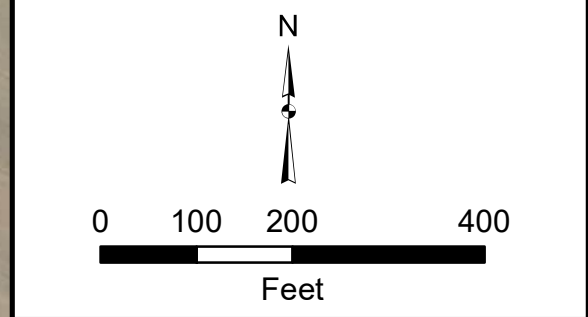


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- ⦿ Proposed Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

- Agriculture Row-Crop
- Streams/Wetlands
- Urban
- Woodland



 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5 SHEET 7 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>



**Legend**

- Structure (Addendum 1)
- Proposed Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

- Agriculture Row-Crop
- Streams/Wetlands
- Woodland

N

0 100 200 400

Feet

 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

FIGURE 5 SHEET 9 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
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JOB NO.: 60702698	<b>AECOM</b>

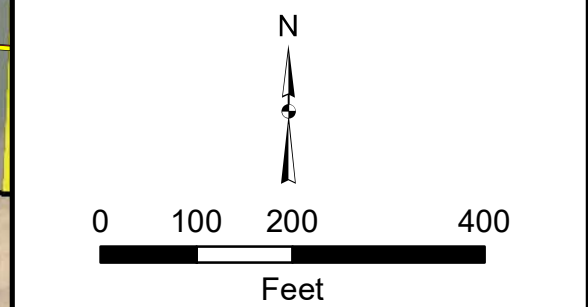


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- Potential Alternative
- ▭ Project Survey Area - Addendum 3
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

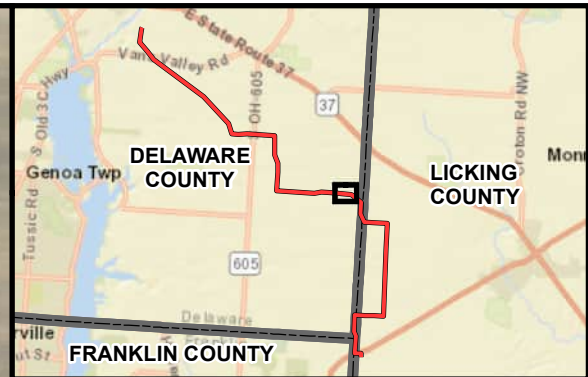
- Agriculture Row-Crop
- Landscaped
- Urban



 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5 SHEET 11 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/10/2025  
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**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- Potential Alternative
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

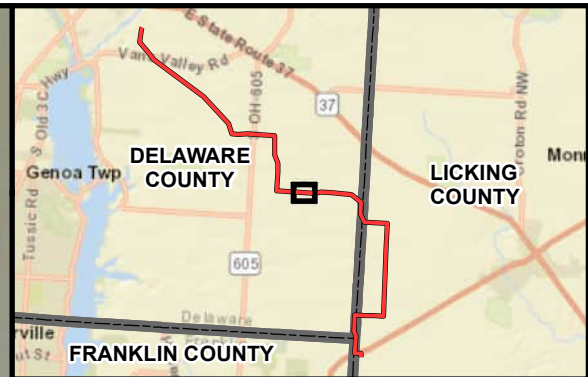
- Agriculture Row-Crop
- Woodland

0 100 200 400  
Feet

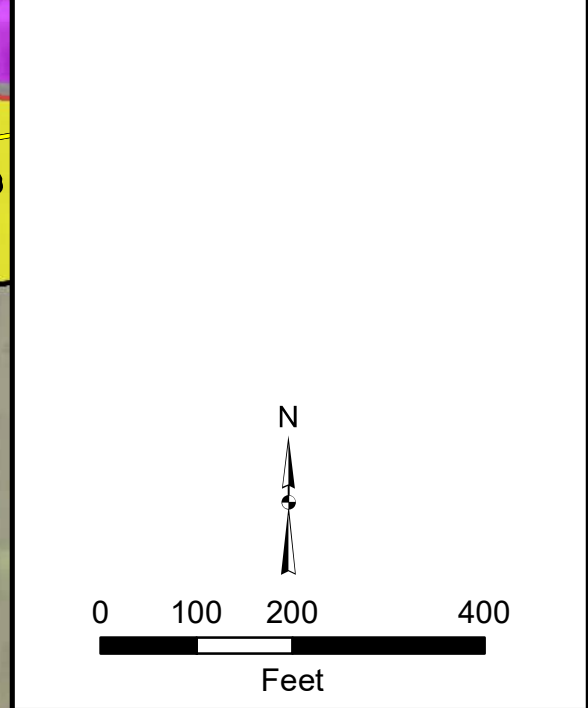
Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 5</b> SHEET 13 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/10/2025  
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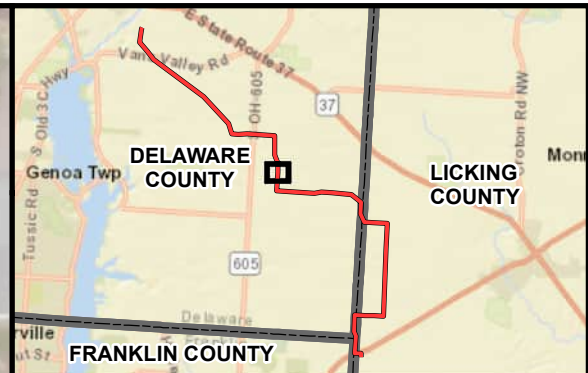
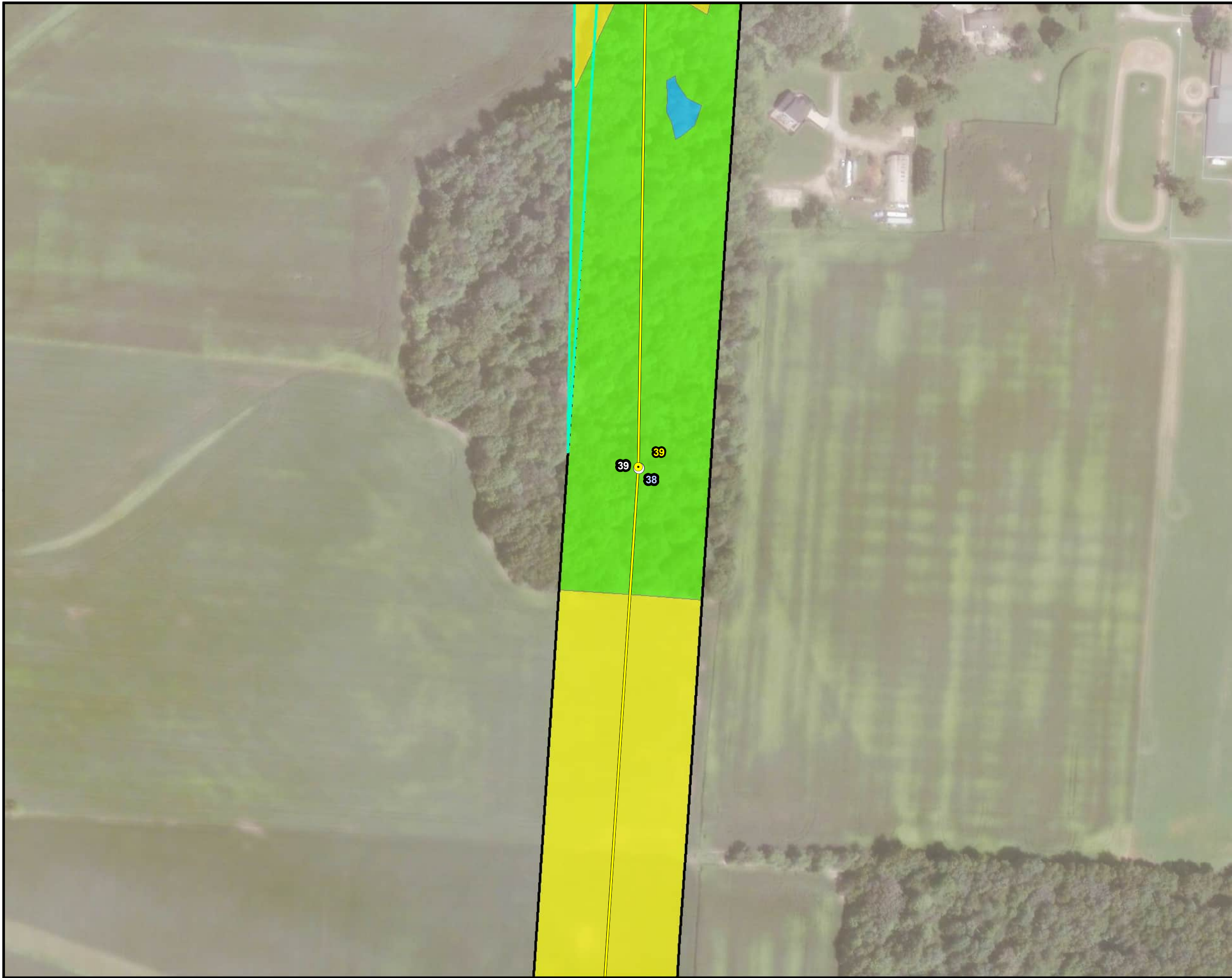


- Legend**
- Structure (Addendum 1)
  - Photograph Location (All Reports)
  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kv Transmission Line (Addendum 1)
  - Vassell - Curley 345 kV Transmission Line
  - ▭ Project Survey Area - Original Report
- Vegetative Community Type**
- Agriculture Row-Crop
  - Landscaped
  - Old Field
  - Streams/Wetlands
  - Urban
  - Woodland

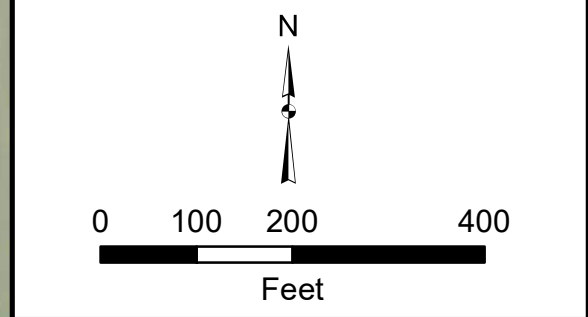



 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 5</b> SHEET 15 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>



- Legend**
- Structure (Addendum 1)
  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kv Transmission Line (Addendum 1)
  - Vassell - Curley 345 kV Transmission Line
  - - - Project Survey Area - Addendum 1
  - ▭ Project Survey Area - Original Report
- Vegetative Community Type**
- Agriculture Row-Crop
  - Streams/Wetlands
  - Woodland

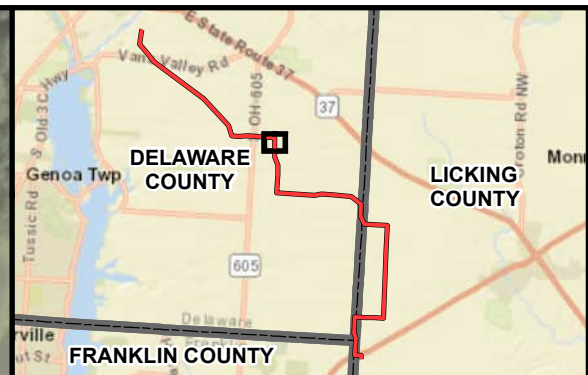


 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5  
 SHEET 17 OF 28  
 VEGETATIVE COMMUNITIES  
 ASSESSMENT MAP

DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/10/2025  
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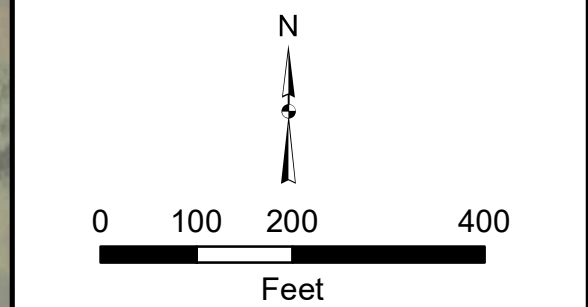


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

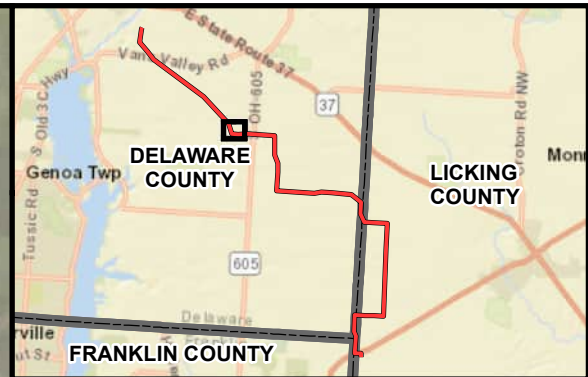
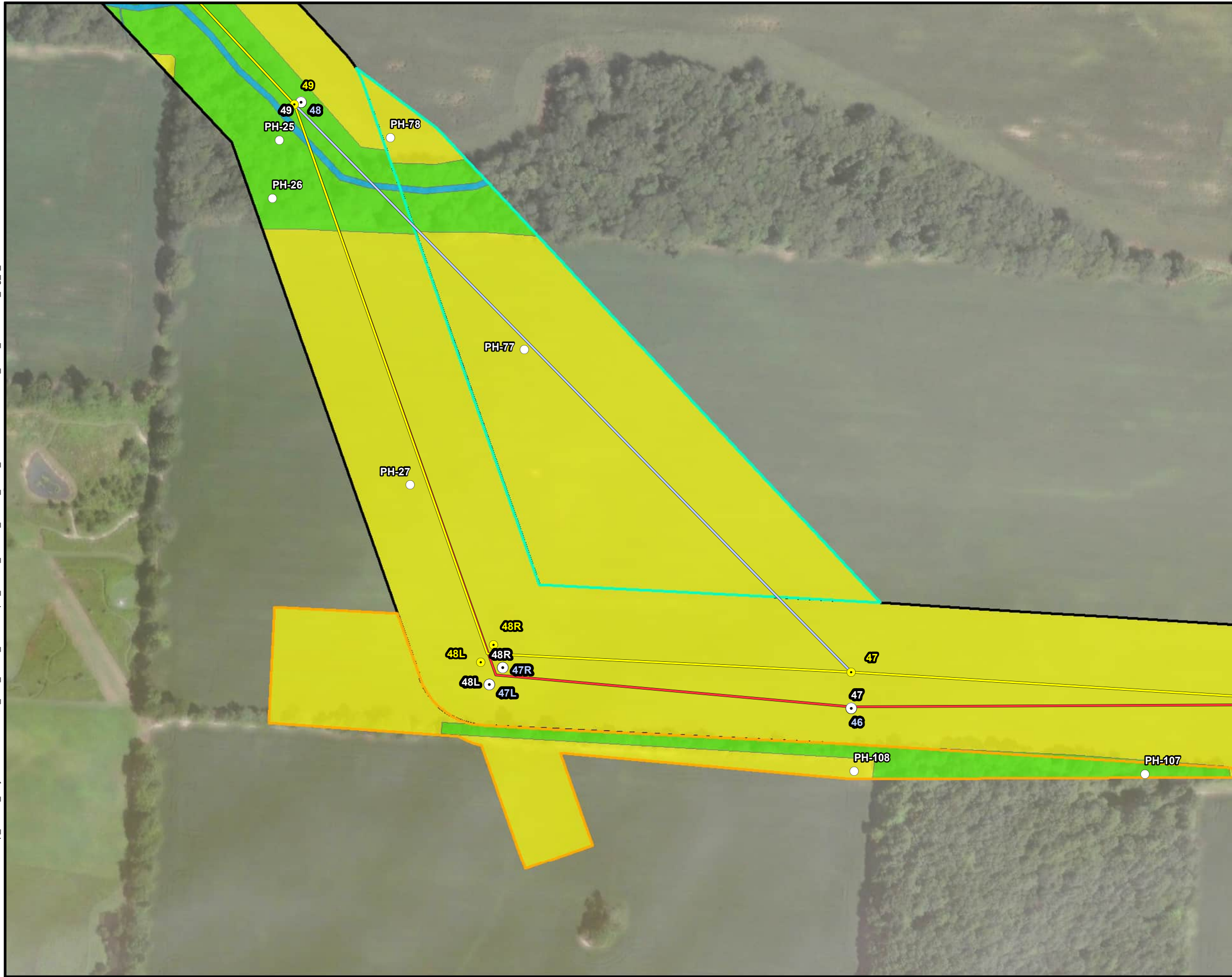
- Agriculture Row-Crop
- Streams/Wetlands
- Woodland



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 5</b> SHEET 19 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/10/2025  
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**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassel - Curley 345kv Transmission Line (Addendum 1)
- Vassel - Curley 345 kV Transmission Line
- Potential Alternative
- ▭ Project Survey Area - Addendum 3
- ▭ Project Survey Area - Addendum 1
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

- ▭ Agriculture Row-Crop
- ▭ Streams/Wetlands
- ▭ Woodland

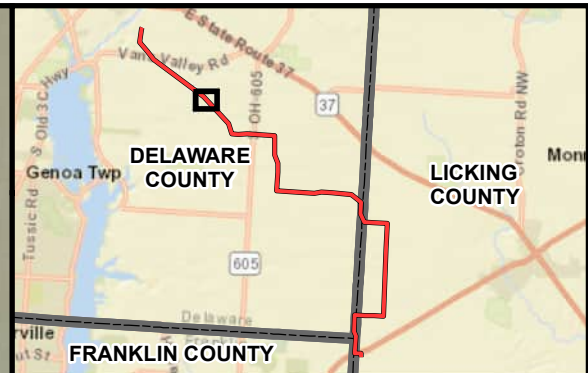
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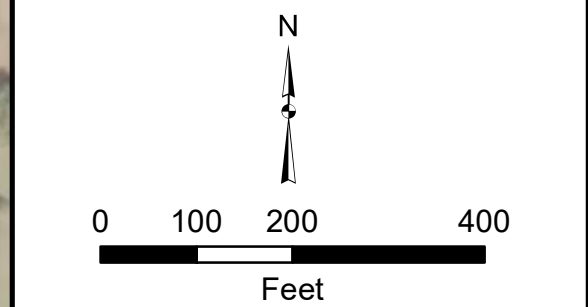
Feet

Vassel - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 5</b> SHEET 21 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>



- Legend**
- Structure (Addendum 1)
  - Photograph Location (All Reports)
  - Proposed Structures
  - Proposed Alternative Structures
  - Vassell - Curley 345kv Transmission Line (Addendum 1)
  - Vassell - Curley 345 kV Transmission Line
  - ▭ Project Survey Area - Original Report
- Vegetative Community Type**
- Agriculture Row-Crop
  - Landscaped
  - Streams/Wetlands
  - Urban
  - Woodland

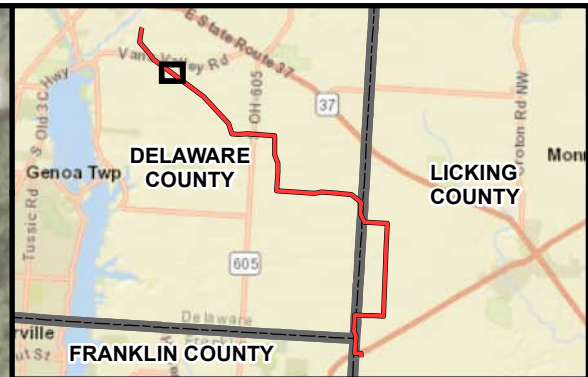
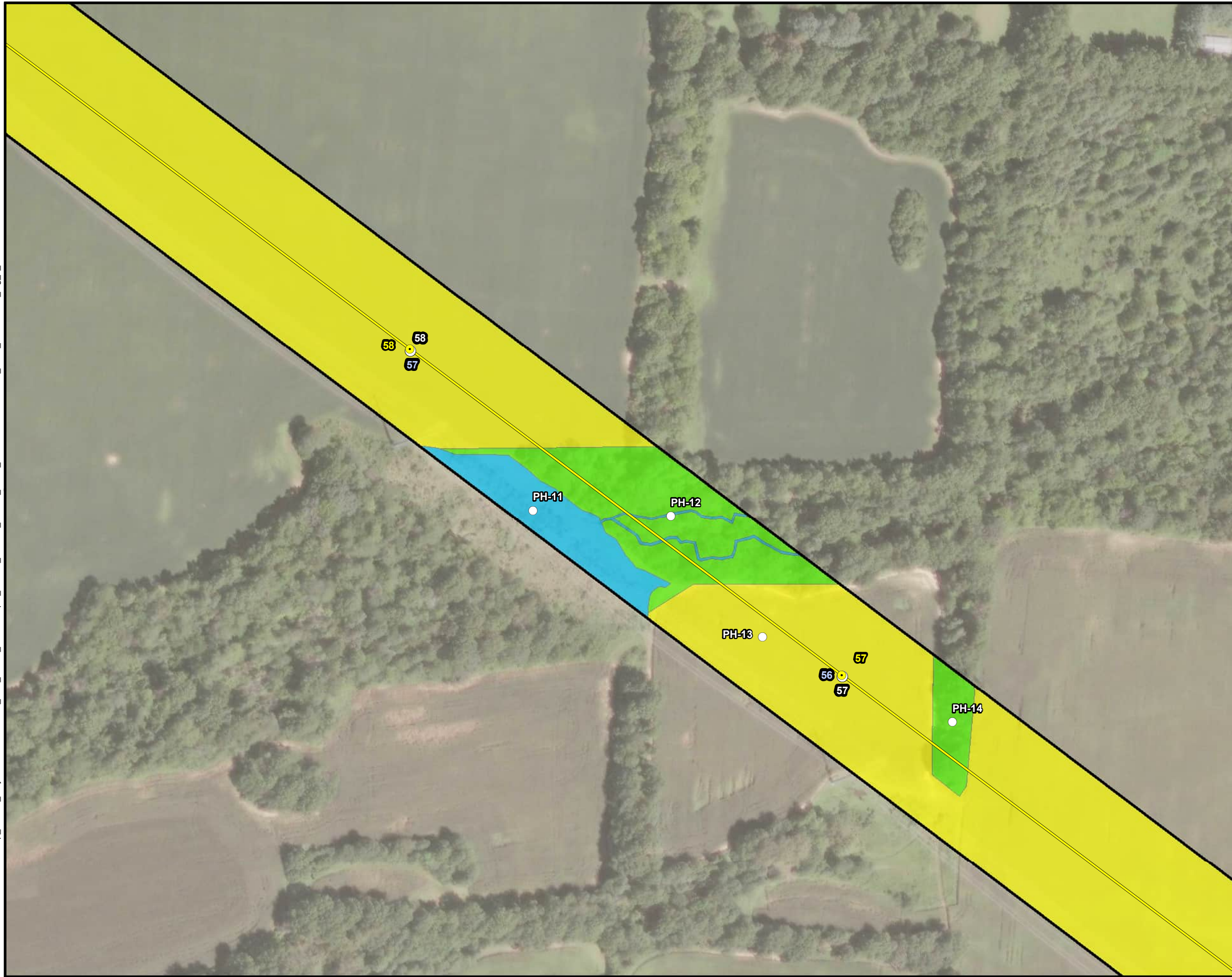


Vassel - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5  
 SHEET 23 OF 28  
 VEGETATIVE COMMUNITIES  
 ASSESSMENT MAP

DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

Date Saved: 2/10/2025  
Document Path: X:\DCS\GIS\ArcMap\_GeoDB\_Projects\ENV\60702698\_AEP\_Vassel\_GreenChapel\_North12\_MXD\12\_WDR11\_South\_Route\Addendum 3\VC\_WDR\_Addendum3\_Fig\_5\_mxd

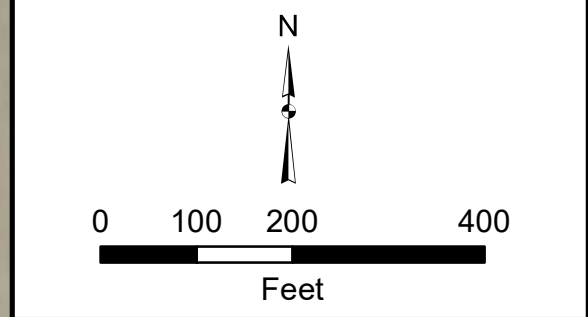


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Original Report

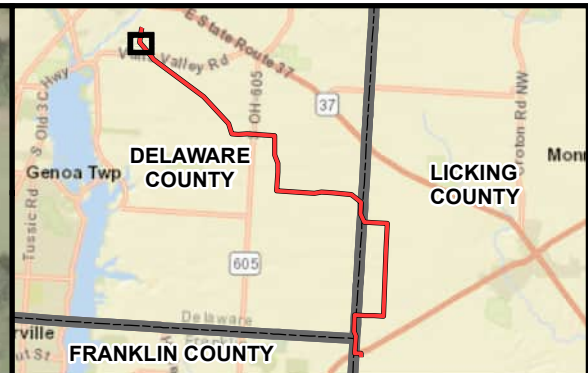
**Vegetative Community Type**

- Agriculture Row-Crop
- Streams/Wetlands
- Woodland



 Vassell - Curley 345 kV  
Transmission Line Project  
Addendum 3

<b>FIGURE 5</b> SHEET 25 OF 28 VEGETATIVE COMMUNITIES ASSESSMENT MAP	
DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

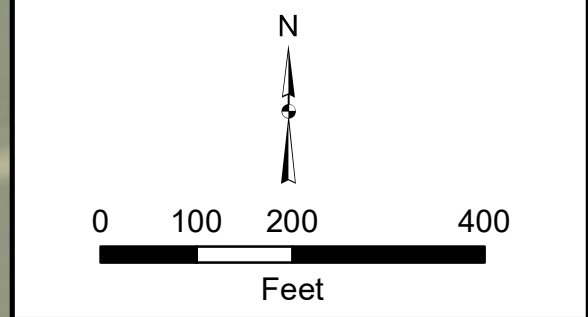


**Legend**

- Structure (Addendum 1)
- Photograph Location (All Reports)
- Proposed Structures
- Proposed Alternative Structures
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Vassell - Curley 345 kV Transmission Line
- ▭ Project Survey Area - Addendum 3
- ▭ Project Survey Area - Original Report

**Vegetative Community Type**

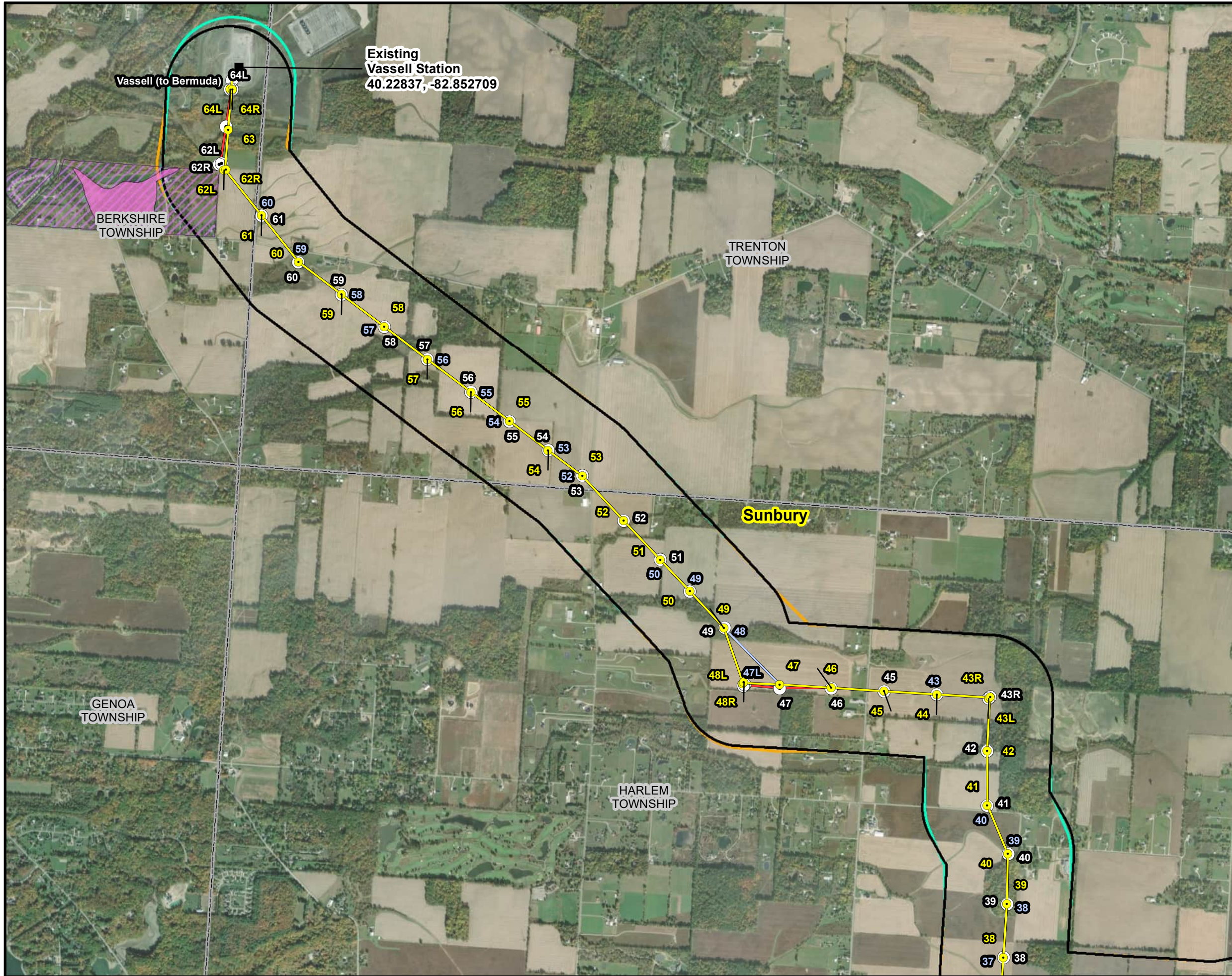
- Agriculture Row-Crop
- Old Field
- Pasture/Hay Fields
- Streams/Wetlands
- Urban
- Woodland



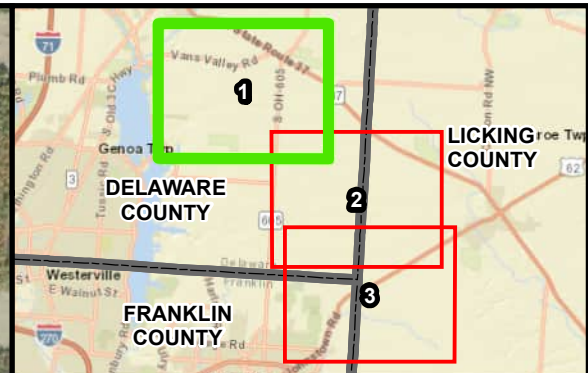
 Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

FIGURE 5  
 SHEET 27 OF 28  
 VEGETATIVE COMMUNITIES  
 ASSESSMENT MAP

DATE: 2/10/2025	1 INCH = 200 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

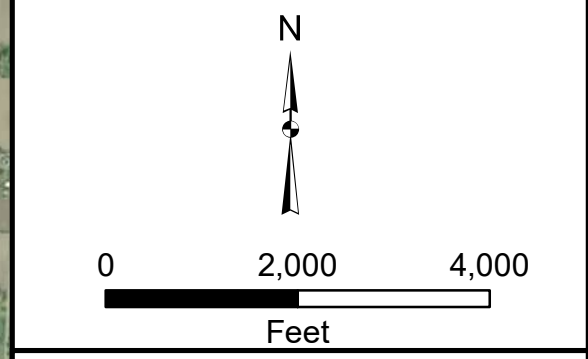


Existing  
 Vassel Station  
 40.22837, -82.852709



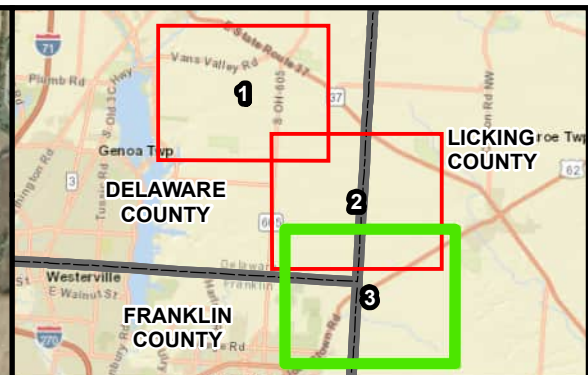
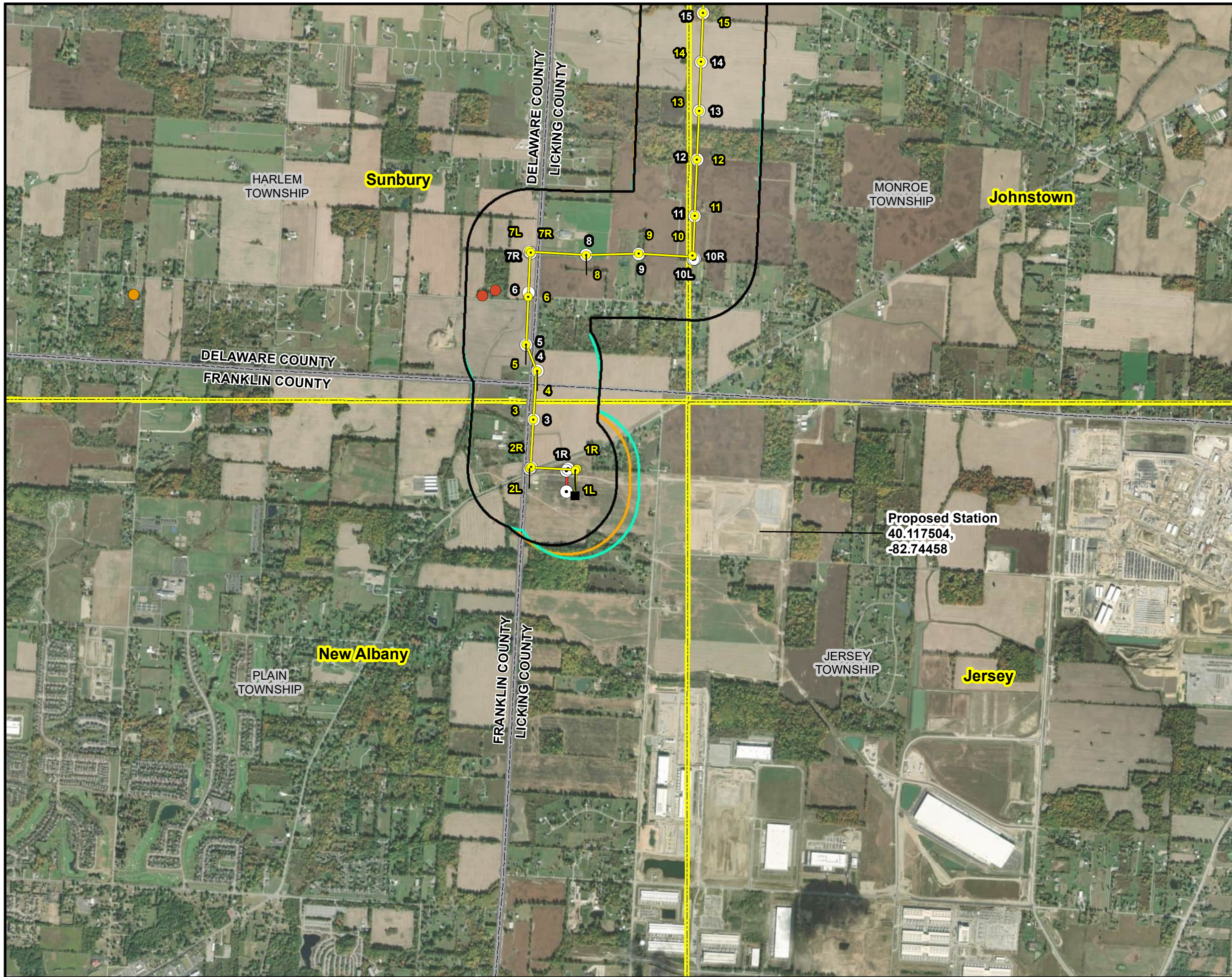
**Legend**

- Structure (Addendum 1)
- Vassel - Curley 345kV Transmission Line (Addendum 1)
- Proposed Structures
- Proposed Alternative Structures
- Vassel - Curley 345kV Transmission Line
- Potential Alternative
- Station
- Addendum 3 Quarter Mile Buffer
- Addendum 1 Quarter Mile Buffer
- Original Report Quarter Mile Buffer
- Mine - Bedrock Geologic Maps
- Surface Industrial Minerals Mine Operation
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary



Vassel - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 6 SHEET 1 OF 3 DESKTOP ASSESSMENT FOR WINTER BAT HABITAT</b>	
DATE: 2/7/2025	1 INCH = 2,000 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>



**Legend**

- Structure (Addendum 1)
- Vassell - Curley 345kv Transmission Line (Addendum 1)
- Proposed Structures
- Vassell - Curley 345kV Transmission Line
- Station
- Addendum 3 Quarter Mile Buffer
- Addendum 1 Quarter Mile Buffer
- Original Report Quarter Mile Buffer
- Karst - Field Verified
- Karst - Suspect-Field Visited
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0      2,000      4,000

Feet

Vassell - Curley 345 kV  
 Transmission Line Project  
 Addendum 3

<b>FIGURE 6</b>	
SHEET 3 OF 3	
DESKTOP ASSESSMENT FOR WINTER BAT HABITAT	
DATE: 2/7/2025	1 INCH = 2,000 FEET
CREATED BY: CT	CHECKED BY: BM
JOB NO.: 60702698	<b>AECOM</b>

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 15-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-004 PFO  
 Investigator(s): MRK, AJH Section, Township, Range: S        T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.148161 Long.: -82.748641 Datum: NAD83  
 Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: N/A

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a forested depression. Depression is collecting surface runoff from the surrounding area and is seasonally inundated. Wetland boundary follows edge of depression.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	30	<input checked="" type="checkbox"/> 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
30 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>5</u> x 1 = <u>5</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>70</u> x 3 = <u>210</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>75</u> (A) <u>215</u> (B)  Prevalence Index = B/A = <u>2.867</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				
1. <u>Acer rubrum</u>	20	<input checked="" type="checkbox"/> 66.7%	FAC	
2. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				
1. <u>Toxicodendron radicans</u>	10	<input checked="" type="checkbox"/> 66.7%	FAC	
2. <u>Glyceria striata</u>	5	<input checked="" type="checkbox"/> 33.3%	OBL	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
15 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 15-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-004-005 UPL  
 Investigator(s): MRK, AJH Section, Township, Range: S 3N T 15W R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.147817 Long.: -82.748294 Datum: NAD83  
 Soil Map Unit Name: Centerburg silt loam, 2 to 6 percent slopes NWI classification: N/A

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point collected for W-MRK-004 and W-MRK-005. Upland data was collected within a forested area.	

VEGETATION - Use scientific names of plants.

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
1. <u>Acer rubrum</u>	<u>25</u>	<input checked="" type="checkbox"/> <u>35.7%</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>8</u> (B)
2. <u>Fagus grandifolia</u>	<u>25</u>	<input checked="" type="checkbox"/> <u>35.7%</u>	<u>FACU</u>	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
3. <u>Quercus rubra</u>	<u>20</u>	<input checked="" type="checkbox"/> <u>28.6%</u>	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>	<u>0</u>	
	<u>70</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. <u>Lindera benzoin</u>	<u>10</u>	<input checked="" type="checkbox"/> <u>33.3%</u>	<u>FACW</u>	Total % Cover of: Multiply by:
2. <u>Fagus grandifolia</u>	<u>10</u>	<input checked="" type="checkbox"/> <u>33.3%</u>	<u>FACU</u>	OBL species <u>0</u> x 1 = <u>0</u>
3. <u>Acer rubrum</u>	<u>10</u>	<input checked="" type="checkbox"/> <u>33.3%</u>	<u>FAC</u>	FACW species <u>20</u> x 2 = <u>40</u>
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		FAC species <u>55</u> x 3 = <u>165</u>
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		FACU species <u>125</u> x 4 = <u>500</u>
	<u>30</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>200</u> (A) <u>705</u> (B)
1. <u>Parthenocissus quinquefolia</u>	<u>70</u>	<input checked="" type="checkbox"/> <u>70.0%</u>	<u>FACU</u>	Prevalence Index = B/A = <u>3.525</u>
2. <u>Toxicodendron radicans</u>	<u>20</u>	<input checked="" type="checkbox"/> <u>20.0%</u>	<u>FAC</u>	
3. <u>Urtica dioica</u>	<u>10</u>	<input type="checkbox"/> <u>10.0%</u>	<u>FACW</u>	
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
6. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
7. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
8. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
9. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
10. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
	<u>100</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		<input type="checkbox"/> 2 - Dominance Test is > 50%
	<u>0</u>	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 22-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-009 PFO  
 Investigator(s): MRK, RBL Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.189848 Long.: -82.79656 Datum: NAD83  
 Soil Map Unit Name: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located in a swale like depression within a forested area. Water drains to the depression from the surrounding flat landscape which is primarily agricultural. Wetland is influenced by surface runoff and seasonal inundation.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius )				
1. <u>Quercus palustris</u>	40	<input checked="" type="checkbox"/> 100.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%	0	
	40	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>45</u> x 1 = <u>45</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>195</u> (B)  Prevalence Index = B/A = <u>1.857</u>
1. <u>Rosa multiflora</u>	10	<input checked="" type="checkbox"/> 100.0%	FACU	
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	10	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex lupulina</u>	25	<input checked="" type="checkbox"/> 55.6%	OBL	
2. <u>Glyceria striata</u>	20	<input checked="" type="checkbox"/> 44.4%	OBL	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	45	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Toxicodendron radicans</u>	10	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%		
	10	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Areas of sparse vegetation within the depression due to seasonal inundation.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 22-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-009-010 UPL  
 Investigator(s): MRK, RBL Section, Township, Range: S        T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.189905 Long.: -82.796824 Datum: NAD83  
 Soil Map Unit Name: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-009 and W-MRK-010. Upland data was collected within an agricultural field.	

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius )				Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)
1. <u>Prunus serotina</u>	30	<input checked="" type="checkbox"/> 75.0%	FACU	
2. <u>Quercus palustris</u>	10	<input checked="" type="checkbox"/> 25.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
40 = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>50</u> x 5 = <u>250</u> Column Totals: <u>170</u> (A) <u>680</u> (B)  Prevalence Index = B/A = <u>4.000</u>
1. <u>Lonicera morrowii</u>	40	<input checked="" type="checkbox"/> 80.0%	FACU	
2. <u>Rosa multiflora</u>	10	<input checked="" type="checkbox"/> 20.0%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
50 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				
1. <u>Glycine max</u>	50	<input checked="" type="checkbox"/> 66.7%	UPL	
2. <u>Toxicodendron radicans</u>	25	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
75 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				
1. <u>Toxicodendron radicans</u>	5	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
5 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Field is planted recently with soybean at forest edge.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 22-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-010 PEM  
 Investigator(s): MRK, RBL Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.1904709 Long.: -82.7964999 Datum: NAD83  
 Soil Map Unit Name: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located in a depression on a former forest trail. Depression extends slightly beyond the trail which is collecting surface runoff from the surrounding area. Wetland extends beyond the current study area.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>90</u> x 1 = <u>90</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>30</u> x 2 = <u>60</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>30</u> x 3 = <u>90</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>150</u> (A) <u>240</u> (B)
1. <u>Juncus effusus</u>	90	<input checked="" type="checkbox"/> 60.0%	OBL	Prevalence Index = B/A = <u>1.600</u>
2. <u>Impatiens capensis</u>	20	<input type="checkbox"/> 13.3%	FACW	
3. <u>Microstegium vimineum</u>	20	<input type="checkbox"/> 13.3%	FAC	
4. <u>Toxicodendron radicans</u>	10	<input type="checkbox"/> 6.7%	FAC	
5. <u>Carex vulpinoidea</u>	10	<input type="checkbox"/> 6.7%	FACW	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	150	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-017 PFO  
 Investigator(s): MRK, TW Section, Township, Range: S        T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.140428 Long.: -82.749103 Datum: NAD83  
 Soil Map Unit Name: BeB; Bennington silt loam, 2 to 6 percent slopes NWI classification: PFO1C

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a forested depression that is collecting surface runoff. Wetland is seasonally inundated with water based on water stained leaves and debris drift deposits.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer saccharinum</u>	25	<input checked="" type="checkbox"/> 50.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Quercus bicolor</u>	25	<input checked="" type="checkbox"/> 50.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
50 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>60</u> (A) <u>130</u> (B)  Prevalence Index = B/A = <u>2.167</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				
1. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 100.0%	FAC	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
10 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Sparse herb stratum due to seasonal inundation.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-017-018 UPL  
 Investigator(s): MRK, TW Section, Township, Range: S \_\_\_\_\_ T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.14077 Long.: -82.748993 Datum: NAD83  
 Soil Map Unit Name: BeB; Bennington silt loam, 2 to 6 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-017 and W-MRK-018. Upland data was collected within an agricultural field.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>0</u> x 2 = <u>0</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>100</u> x 5 = <u>500</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>100</u> (A) <u>500</u> (B)
1. <u>Zea mays</u>	100	<input checked="" type="checkbox"/> 100.0%	UPL	Prevalence Index = B/A = <u>5.000</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Field is currently planted with corn.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-018 PFO  
 Investigator(s): MRK, TW Section, Township, Range: S        T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.140132 Long.: -82.749653 Datum: NAD83  
 Soil Map Unit Name: Pe; Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a forested depression that is collecting surface runoff. Wetland is seasonally inundated with water based on water stained leaves and debris drift deposits.	

VEGETATION - Use scientific names of plants.

Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer saccharinum</u>	20	<input checked="" type="checkbox"/> 50.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Acer rubrum</u>	20	<input checked="" type="checkbox"/> 50.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
40 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>380</u> (B)  Prevalence Index = B/A = <u>2.714</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				
1. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
2. <u>Lindera benzoin</u>	20	<input checked="" type="checkbox"/> 66.7%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius)				
1. <u>Toxicodendron radicans</u>	50	<input checked="" type="checkbox"/> 71.4%	FAC	
2. <u>Parthenocissus quinquefolia</u>	10	<input type="checkbox"/> 14.3%	FACU	
3. <u>Carex intumescens</u>	10	<input type="checkbox"/> 14.3%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
70 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Sparse herb stratum due to seasonal inundation.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-019 PEM  
 Investigator(s): MRK, TW Section, Township, Range: S        T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.133782 Long.: -82.754779 Datum: NAD83  
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located in a depression within a fallow field. Depression is collecting surface runoff which drains and dissipates into the surrounding agricultural fields. Wetland continues outside of the current study area.	

VEGETATION - Use scientific names of plants.

Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
0 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>70</u> x 2 = <u>140</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>145</u> (A) <u>365</u> (B)  Prevalence Index = B/A = <u>2.517</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius)				
1. <u>Carex vulpinoidea</u>	60	<input checked="" type="checkbox"/> 41.4%	FACW	
2. <u>Apocynum cannabinum</u>	40	<input checked="" type="checkbox"/> 27.6%	FAC	
3. <u>Juncus tenuis</u>	30	<input checked="" type="checkbox"/> 20.7%	FAC	
4. <u>Phalaris arundinacea</u>	10	<input type="checkbox"/> 6.9%	FACW	
5. <u>Solidago rugosa</u>	5	<input type="checkbox"/> 3.4%	FAC	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
145 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

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

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-019 UPL  
 Investigator(s): MRK, TW Section, Township, Range: S \_\_\_\_\_ T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.133835 Long.: -82.755622 Datum: NAD83  
 Soil Map Unit Name: Pe; Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: PEM1A

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-019. Upland data was collected within an agricultural field.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel. Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>0</u> x 2 = <u>0</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>75</u> x 5 = <u>375</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>75</u> (A) <u>375</u> (B)
1. <u>Glycine max</u>	75	<input checked="" type="checkbox"/> 100.0%	UPL	Prevalence Index = B/A = <u>5.000</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	75	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Field is currently planted with soybean.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Midwest Region</b> See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp:11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Vassel Green Chapel Curley City/County: Delaware County Sampling Date: 01/29/2025  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-021-PFO  
 Investigator(s): AGS/TJK Section, Township, Range: T4N R17W  
 Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 40.223935 Long: -82.854241 Datum: NAD 83  
 Soil Map Unit Name: SnA: Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation     , Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 W-MRK-021 is a PFO, abutting wetland that is located along the riparian zone of S-MRK-020. The wetland is within a conservation easement, therefore, there is little to no disturbance.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	15	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>62.5%</u> (A/B)
2. <u>Ulmus americana</u>	15	Yes	FACW	
3. <u>Acer saccharum</u>	10	Yes	FACU	
4. <u>Quercus montana</u>	10	Yes	FACU	
5. <u>    </u>	50	=Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FACU species _____ x 3 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>    </u>				
2. <u>    </u>				
3. <u>    </u>				
4. <u>    </u>				
5. <u>    </u>				
<u>Herb Stratum</u> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>    </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>    </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>    </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>    </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Cinna arundinacea</u>	15	Yes	FACW	
2. <u>Symplocarpus foetidus</u>	10	Yes	OBL	
3. <u>Glechoma hederacea</u>	10	Yes	FACU	
4. <u>Elymus virginicus</u>	10	Yes	FACW	
5. <u>Packera aurea</u>	5	No	FACW	
6. <u>    </u>				
7. <u>    </u>				
8. <u>    </u>				
9. <u>    </u>				
10. <u>    </u>				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>    </u>
1. <u>    </u>				
2. <u>    </u>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is present.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Midwest Region</b> See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp:11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Vassel Green Chapel Curley City/County: Delaware County Sampling Date: 01/29/2025  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-021-PEM  
 Investigator(s): AGS/TJK Section, Township, Range: T4N R17W  
 Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 40.223720 Long: -82.855695 Datum: NAD 83  
 Soil Map Unit Name: SnA: Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 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 <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 W-MRK-021 is a PEM, abutting wetland that is located along the riparian zone of S-MRK-020. The vegetation is is disturbed from mowing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rosa multiflora</u>	5	Yes	FACU	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				5 =Total Cover
<u>Herb Stratum</u> (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	80	Yes	FACW	
2. <u>Verbesina alternifolia</u>	10	No	FACW	
3. <u>Ludwigia alternifolia</u>	5	No	OBL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				95 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>5</u>	x 1 = <u>5</u>
FACW species <u>90</u>	x 2 = <u>180</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>205</u> (B)
Prevalence Index = B/A = <u>2.05</u>	

**Hydrophytic Vegetation Indicators:**  
     1 - Rapid Test for Hydrophytic Vegetation  
     2 - Dominance Test is >50%  
X 3 - Prevalence Index is ≤3.0<sup>1</sup>  
     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is present. The vegetation is disturbed from mowing.

Project/Site: Vassel Green Chapel Curley City/County: Delaware County Sampling Date: 01/29/2025  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-021-UPL  
 Investigator(s): AGS/TJK Section, Township, Range: T4N R17W  
 Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 2 Lat: 40.223499 Long: -82.855091 Datum: NAD 83  
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 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 <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
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Remarks:  
 W-MRK-021-UPL is an upland data point located in an old field habitat and within a transmission line ROW. The vegetation is disturbed from mowing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus allegheniensis</u>	20	Yes	FACU	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	35	Yes	FACW	
2. <u>Tridens flavus</u>	30	Yes	UPL	
3. <u>Setaria viridis</u>	15	No	UPL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>35</u>	x 2 = <u>70</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>45</u>	x 5 = <u>225</u>
Column Totals: <u>100</u> (A)	<u>375</u> (B)
Prevalence Index = B/A = <u>3.75</u>	

**Hydrophytic Vegetation Indicators:**

     1 - Rapid Test for Hydrophytic Vegetation

     2 - Dominance Test is >50%

     3 - Prevalence Index is ≤3.0<sup>1</sup>

     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes      No X

Remarks: (Include photo numbers here or on a separate sheet.)  
 A preponderance of hydrophytic vegetation is not present. The vegetation is disturbed from mowing.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 11-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-O23 PEM  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 4N R 16W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave  
 Slope: 2.0% / 1.1 ° Lat.: 40.21723 Long.: -82.84852 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located within a hillside depression that is collecting surface runoff and flow from an intermittent watercourse that loses its banks at certain areas of the wetland. The wetland boundary follows edge of depression.	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>110</u> x 2 = <u>220</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>135</u> (A) <u>245</u> (B)  Prevalence Index = B/A = <u>1.815</u>
<b>Sapling/Shrub Stratum (Plot size: 15' radius)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<b>Herb Stratum (Plot size: 5' radius)</b>				
1. Phalaris arundinacea	100	<input checked="" type="checkbox"/> 74.1%	FACW	
2. Persicaria sagittata	25	<input type="checkbox"/> 18.5%	OBL	
3. Impatiens capensis	10	<input type="checkbox"/> 7.4%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
135 = Total Cover				
<b>Woody Vine Stratum (Plot size: 30' radius)</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 11-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-023 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 4N R 16W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex  
 Slope: 2.0% / 1.1 ° Lat.: 40.21713 Long.: -82.84817 Datum: NAD83  
 Soil Map Unit Name: Cen1B1 : Centerburg silt loam, 2 to 6 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-023. Upland data was collected within a hayfield.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%	0	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>0</u> x 2 = <u>0</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>20</u> x 3 = <u>60</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>120</u> x 4 = <u>480</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>140</u> (A) <u>540</u> (B)
1. <u>Dactylis glomerata</u>	100	<input checked="" type="checkbox"/> 71.4%	FACU	Prevalence Index = B/A = <u>3.857</u>
2. <u>Cirsium arvense</u>	20	<input type="checkbox"/> 14.3%	FACU	
3. <u>Plantago major</u>	10	<input type="checkbox"/> 7.1%	FAC	
4. <u>Setaria pumila</u>	10	<input type="checkbox"/> 7.1%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	140	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are not present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 12-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-024 PSS  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 4N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.21279 Long.: -82.84142 Datum: NAD83  
 Soil Map Unit Name: SsA : Smothers silt loam, 0 to 2 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PSS wetland is located in a depression on the existing transmission line right-of-way. Depression is collecting surface runoff and is also seasonally flooded by an intermittent watercourse that flows through the wetland.	

VEGETATION - Use scientific names of plants.

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. <u>Cornus amomum</u>	20	<input checked="" type="checkbox"/> 50.0%	FACW	Total % Cover of: Multiply by:
2. <u>Quercus palustris</u>	20	<input checked="" type="checkbox"/> 50.0%	FACW	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>140</u> x 2 = <u>280</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>
	40	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>140</u> (A) <u>280</u> (B)
1. <u>Phalaris arundinacea</u>	100	<input checked="" type="checkbox"/> 100.0%	FACW	Prevalence Index = B/A = <u>2.000</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	100	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 12-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-024 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 4N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex  
 Slope: 1.0% / 0.6 ° Lat.: 40.21304 Long.: -82.84155 Datum: NAD83  
 Soil Map Unit Name: SsA : Smothers silt loam, 0 to 2 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-024. Upland data was collected within an agricultural field.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>25</u> x 3 = <u>75</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>75</u> x 5 = <u>375</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>100</u> (A) <u>450</u> (B)
1. <u>Glycine max</u>	75	<input checked="" type="checkbox"/> 75.0%	<u>UPL</u>	Prevalence Index = B/A = <u>4.500</u>
2. <u>Panicum virgatum</u>	25	<input checked="" type="checkbox"/> 25.0%	<u>FAC</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	100	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are not present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 12-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-025 PFO  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.19767 Long.: -82.81806 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located in a depression. Depression is seasonally flooded. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by <i>Quercus palustris</i> .	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> radius )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <i>Quercus palustris</i>	50	<input checked="" type="checkbox"/> 100.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
50 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>175</u> (A) <u>445</u> (B)  Prevalence Index = B/A = <u>2.543</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u> radius )</b>				
1. <i>Ulmus rubra</i>	25	<input checked="" type="checkbox"/> 71.4%	FAC	
2. <i>Quercus palustris</i>	10	<input checked="" type="checkbox"/> 28.6%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
35 = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u> radius )</b>				
1. <i>Microstegium vimineum</i>	50	<input checked="" type="checkbox"/> 55.6%	FAC	
2. <i>Urtica dioica</i>	20	<input checked="" type="checkbox"/> 22.2%	FACW	
3. <i>Agrimonia parviflora</i>	10	<input type="checkbox"/> 11.1%	FACW	
4. <i>Parthenocissus quinquefolia</i>	10	<input type="checkbox"/> 11.1%	FACU	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
90 = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u> radius )</b>				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 12-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-025 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex  
 Slope: 1.0% / 0.6 ° Lat.: 40.19777 Long.: -82.81802 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-025. Upland data was collected between a forested area and agricultural field.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius )				
1. <u>Quercus palustris</u>	<u>10</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACW</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>10</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				
1. <u>Rosa multiflora</u>	<u>50</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>80</u> x 5 = <u>400</u> Column Totals: <u>140</u> (A) <u>620</u> (B) Prevalence Index = B/A = <u>4.429</u>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>50</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				
1. <u>Glycine max</u>	<u>80</u>	<input checked="" type="checkbox"/> 100.0%	<u>UPL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>80</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are not present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-027 PEM**  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.17397 Long.: -82.79460 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: PUBGx

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located in a depression adjacent to an agricultural field. Depression is inundated and heavy siltation is present from agricultural runoff. The wetland boundary follows depression and surface water edge.	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> radius )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius )				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>125</u> x 1 = <u>125</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>135</u> (A) <u>145</u> (B)  Prevalence Index = B/A = <u>1.074</u>
1. <u>Frangula alnus</u>	10	<input checked="" type="checkbox"/> 100.0%	FACW	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
10 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius )				
1. <u>Typha angustifolia</u>	50	<input checked="" type="checkbox"/> 40.0%	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> <b>1 - Rapid Test for Hydrophytic Vegetation</b> <input checked="" type="checkbox"/> <b>2 - Dominance Test is &gt; 50%</b> <input checked="" type="checkbox"/> <b>3 - Prevalence Index is ≤ 3.0<sup>1</sup></b> <input type="checkbox"/> <b>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</b> <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</b>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Leersia oryzoides</u>	30	<input checked="" type="checkbox"/> 24.0%	OBL	
3. <u>Juncus effusus</u>	25	<input checked="" type="checkbox"/> 20.0%	OBL	
4. <u>Eleocharis palustris</u>	20	<input type="checkbox"/> 16.0%	OBL	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
125 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-027 UPL**  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.17425 Long.: -82.79408 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-027. Upland data was collected within an agricultural field near the forest edge.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> radius )				
1. <u>Juglans nigra</u>	25	<input checked="" type="checkbox"/> 71.4%	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. <u>Quercus rubra</u>	10	<input checked="" type="checkbox"/> 28.6%	FACU	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	35	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>100</u> x 5 = <u>500</u> Column Totals: <u>135</u> (A) <u>640</u> (B)  Prevalence Index = B/A = <u>4.741</u>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5'</u> radius )				
1. <u>Glycine max</u>	100	<input checked="" type="checkbox"/> 100.0%	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> <b>1 - Rapid Test for Hydrophytic Vegetation</b> <input type="checkbox"/> <b>2 - Dominance Test is &gt; 50%</b> <input type="checkbox"/> <b>3 - Prevalence Index is ≤ 3.0</b> <sup>1</sup> <input type="checkbox"/> <b>4 - Morphological Adaptations</b> <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation</b> <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	100	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are not present.

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-028 PFO  
 Investigator(s): MRK, KRS Section, Township, Range: S        T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.17378 Long.: -82.78747 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a large forested depression that is collecting surface runoff from the surrounding area. Wetland is seasonally inundated which was observed based on water stained leaves in the depression.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	70	<input checked="" type="checkbox"/> 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
70 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>370</u> (B)  Prevalence Index = B/A = <u>2.643</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				
1. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
2. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
3. <u>Lindera benzoin</u>	10	<input checked="" type="checkbox"/> 33.3%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				
1. <u>Carex intumescens</u>	20	<input checked="" type="checkbox"/> 50.0%	FACW	
2. <u>Urtica dioica</u>	20	<input checked="" type="checkbox"/> 50.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
40 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-028-029 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex  
 Slope: 2.0% / 1.1 ° Lat.: 40.17375 Long.: -82.78637 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: None

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-028 and W-MRK-029. Upland data was collected within a forested area.	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> radius )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/> 29.4%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
2. <u>Carya ovata</u>	30	<input checked="" type="checkbox"/> 35.3%	FACU	
3. <u>Acer saccharum</u>	30	<input checked="" type="checkbox"/> 35.3%	FACU	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
85 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>385</u> (B)  Prevalence Index = B/A = <u>3.667</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius )				
1. <u>Acer saccharum</u>	15	<input checked="" type="checkbox"/> 75.0%	FACU	
2. <u>Lindera benzoin</u>	5	<input checked="" type="checkbox"/> 25.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
20 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
0 = Total Cover				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is  $\leq 3.0$ <sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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Hydrophytic Vegetation Present? Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)  
 No hydrophytic vegetation indicators are present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-029 PFO  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.17388 Long.: -82.78568 Datum: NAD83  
 Soil Map Unit Name: PwA : Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a large forested depression that is collecting surface runoff from the surrounding area. Wetland is seasonally inundated which was observed based on water stained leaves in the depression.	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> radius )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	40	<input checked="" type="checkbox"/> 61.5%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>8</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Acer saccharinum</u>	25	<input checked="" type="checkbox"/> 38.5%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	0	
65 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>165</u> (A) <u>410</u> (B)  Prevalence Index = B/A = <u>2.485</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius )				
1. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
2. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
3. <u>Lindera benzoin</u>	10	<input checked="" type="checkbox"/> 33.3%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
Herb Stratum (Plot size: <u>5'</u> radius )				
1. <u>Carex intumescens</u>	20	<input checked="" type="checkbox"/> 28.6%	FACW	
2. <u>Urtica dioica</u>	20	<input checked="" type="checkbox"/> 28.6%	FACW	
3. <u>Microstegium vimineum</u>	20	<input checked="" type="checkbox"/> 28.6%	FAC	
4. <u>Onoclea sensibilis</u>	10	<input type="checkbox"/> 14.3%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
70 = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-030 PEM  
 Investigator(s): MRK, KRS Section, Township, Range: S 15 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.16174 Long.: -82.74871 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM section of a PEM/PFO wetland complex is located in a depression between two separate PFO sections. Surface runoff drains out of the PFO section to the south, flows into the PEM, and flows north into another PFO section.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum (Plot size: 30' radius )</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Sapling/Shrub Stratum (Plot size: 15' radius )</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Herb Stratum (Plot size: 5' radius )</b>				
1. <u>Scirpus atrovirens</u>	50	<input checked="" type="checkbox"/> 33.3%	OBL	
2. <u>Scirpus cyperinus</u>	15	<input type="checkbox"/> 10.0%	OBL	
3. <u>Impatiens capensis</u>	15	<input type="checkbox"/> 10.0%	FACW	
4. <u>Eupatorium perfoliatum</u>	25	<input checked="" type="checkbox"/> 16.7%	OBL	
5. <u>Ambrosia artemisiifolia</u>	20	<input checked="" type="checkbox"/> 13.3%	FACU	
6. <u>Persicaria sagittata</u>	10	<input type="checkbox"/> 6.7%	OBL	
7. <u>Juncus effusus</u>	10	<input type="checkbox"/> 6.7%	OBL	
8. <u>Phalaris arundinacea</u>	5	<input type="checkbox"/> 3.3%	FACW	
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	150	= Total Cover		
<b>Woody Vine Stratum (Plot size: 30' radius )</b>				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:		Multiply by:	
OBL species	<u>110</u>	x 1 =	<u>110</u>
FACW species	<u>20</u>	x 2 =	<u>40</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>20</u>	x 4 =	<u>80</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>150</u> (A)		<u>230</u> (B)

Prevalence Index = B/A = 1.533

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-030 PFO  
 Investigator(s): MRK, KRS Section, Township, Range: S 15 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.16161 Long.: -82.74894 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO section of a PEM/PFO wetland complex is located in a depression surrounding a PEM section. Surface runoff drains out of the PFO section to the south, flows into the PEM, and flows north into another PFO section.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius )				
1. <u>Acer rubrum</u>	30	<input checked="" type="checkbox"/> 50.0%	FAC	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Acer saccharinum</u>	30	<input checked="" type="checkbox"/> 50.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	60	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				
1. <u>Ulmus rubra</u>	25	<input checked="" type="checkbox"/> 45.5%	FAC	Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>130</u> x 3 = <u>390</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>205</u> (A) <u>540</u> (B) Prevalence Index = B/A = <u>2.634</u>
2. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/> 45.5%	FAC	
3. <u>Lindera benzoin</u>	5	<input type="checkbox"/> 9.1%	FACW	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	55	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				
1. <u>Toxicodendron radicans</u>	50	<input checked="" type="checkbox"/> 55.6%	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Urtica dioica</u>	5	<input type="checkbox"/> 5.6%	FACW	
3. <u>Impatiens capensis</u>	15	<input type="checkbox"/> 16.7%	FACW	
4. <u>Carex intumescens</u>	20	<input checked="" type="checkbox"/> 22.2%	FACW	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	90	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 13-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-030 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S 15 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.16054 Long.: -82.74862 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-030. Upland data was collected within an agricultural field next to the forest edge.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>10</u> x 2 = <u>20</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>10</u> x 3 = <u>30</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>100</u> x 5 = <u>500</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>120</u> (A) <u>550</u> (B)
1. <u>Zea mays</u>	100	<input checked="" type="checkbox"/> 83.3%	<u>UPL</u>	Prevalence Index = B/A = <u>4.583</u>
2. <u>Xanthium strumarium</u>	10	<input type="checkbox"/> 8.3%	<u>FAC</u>	
3. <u>Cyperus esculentus</u>	10	<input type="checkbox"/> 8.3%	<u>FACW</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	120	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are not present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-031 PFO  
 Investigator(s): MRK, KRS Section, Township, Range: S 25 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.14055 Long.: -82.74988 Datum: NAD83  
 Soil Map Unit Name: BeB : Bennington silt loam, 2 to 6 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a forested area surrounded by agriculture. The wetland is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression and water stained leaves.	

**VEGETATION - Use scientific names of plants.**

Tree Stratum (Plot size: <u>30'</u> radius )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
1. <u>Acer saccharinum</u>	60	<input checked="" type="checkbox"/> 100.0%	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
60 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>85</u> (A) <u>205</u> (B)  Prevalence Index = B/A = <u>2.412</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				
1. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/> 40.0%	FAC	
2. <u>Carya glabra</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU	
3. <u>Smilax rotundifolia</u>	5	<input checked="" type="checkbox"/> 20.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
25 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-031 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S 25 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.14040 Long.: -82.74983 Datum: NAD83  
 Soil Map Unit Name: BeB : Bennington silt loam, 2 to 6 percent slopes NWI classification: None

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-031. Upland data was collected within an upland forest.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				
1. <u>Quercus rubra</u>	<u>50</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%	<u>0</u>	
	<u>50</u>	<u>= Total Cover</u>		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				
1. <u>Carya glabra</u>	<u>35</u>	<input checked="" type="checkbox"/> 43.8%	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>145</u> x 4 = <u>580</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>190</u> (A) <u>715</u> (B) Prevalence Index = B/A = <u>3.763</u>
2. <u>Smilax rotundifolia</u>	<u>35</u>	<input checked="" type="checkbox"/> 43.8%	<u>FAC</u>	
3. <u>Ulmus rubra</u>	<u>10</u>	<input type="checkbox"/> 12.5%	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>80</u>	<u>= Total Cover</u>		
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				
1. <u>Parthenocissus quinquefolia</u>	<u>60</u>	<input checked="" type="checkbox"/> 100.0%	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is > 50% <input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
3. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
4. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
5. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
6. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
7. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
8. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
9. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
10. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>60</u>	<u>= Total Cover</u>		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	<u>0</u>	<input type="checkbox"/> 0.0%		Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/> 0.0%		
	<u>0</u>	<u>= Total Cover</u>		

Remarks: (Include photo numbers here or on a separate sheet.)  
 No hydrophytic vegetation indicator present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-032 PEM  
 Investigator(s): MRK, KRS Section, Township, Range: S 25 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.13307 Long.: -82.75424 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located in a depression within a pasture. The depression is collecting surface runoff and overflow from an adjacent pond. The wetland boundary follows the edge of depression.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%	0	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>60</u> x 1 = <u>60</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>75</u> x 2 = <u>150</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>15</u> x 3 = <u>45</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>150</u> (A) <u>255</u> (B)
1. <u>Epilobium coloratum</u>	35	<input checked="" type="checkbox"/> 23.3%	OBL	Prevalence Index = B/A = <u>1.700</u>
2. <u>Lysimachia nummularia</u>	35	<input checked="" type="checkbox"/> 23.3%	FACW	
3. <u>Carex vulpinoidea</u>	30	<input checked="" type="checkbox"/> 20.0%	FACW	
4. <u>Leersia oryzoides</u>	25	<input type="checkbox"/> 16.7%	OBL	
5. <u>Panicum virgatum</u>	15	<input type="checkbox"/> 10.0%	FAC	
6. <u>Phalaris arundinacea</u>	10	<input type="checkbox"/> 6.7%	FACW	
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	150	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-032 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S 25 T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex  
 Slope: 1.0% / 0.6 ° Lat.: 40.1332 Long.: -82.75419 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-032. Upland data was collected within a pasture.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>5</u> x 2 = <u>10</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>110</u> x 4 = <u>440</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>115</u> (A) <u>450</u> (B)
1. <u>Dactylis glomerata</u>	50	<input checked="" type="checkbox"/> 43.5%	FACU	Prevalence Index = B/A = <u>3.913</u>
2. <u>Phleum pratense</u>	30	<input checked="" type="checkbox"/> 26.1%	FACU	
3. <u>Cirsium arvense</u>	15	<input type="checkbox"/> 13.0%	FACU	
4. <u>Taraxacum officinale</u>	15	<input type="checkbox"/> 13.0%	FACU	
5. <u>Lysimachia nummularia</u>	5	<input type="checkbox"/> 4.3%	FACW	
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	115	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are absent.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Franklin Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-033 PEM  
 Investigator(s): MRK, KRS Section, Township, Range: S 1 T 2N R 16W  
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave  
 Slope: 2.0% / 1.1 ° Lat.: 40.12324 Long.: -82.76209 Datum: NAD83  
 Soil Map Unit Name: Pm : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PEM wetland is located in a depression and begins at a hillside spring seep. Water follows the depression and drains down the slope to stream S-MRK-030. The wetland boundary follows edge of depression.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				<b>Prevalence Index worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:      Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>25</u> x 1 = <u>25</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>75</u> x 2 = <u>150</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>25</u> x 3 = <u>75</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>125</u> (A) <u>250</u> (B)
1. <u>Phalaris arundinacea</u>	75	<input checked="" type="checkbox"/> 60.0%	FACW	Prevalence Index = B/A = <u>2.000</u>
2. <u>Typha angustifolia</u>	25	<input checked="" type="checkbox"/> 20.0%	OBL	
3. <u>Apocynum cannabinum</u>	25	<input checked="" type="checkbox"/> 20.0%	FAC	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	125	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes  No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are present.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Franklin Sampling Date: 14-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-033 UPL  
 Investigator(s): MRK, KRS Section, Township, Range: S 1 T 2N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.12321 Long.: -82.76193 Datum: NAD83  
 Soil Map Unit Name: Pe : Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: None

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-033. Upland data was collected within an agricultural field.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>20</u> x 2 = <u>40</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>20</u> x 3 = <u>60</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>15</u> x 4 = <u>60</u>
	0	= Total Cover		UPL species <u>70</u> x 5 = <u>350</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>125</u> (A) <u>510</u> (B)
1. <u>Zea mays</u>	70	<input checked="" type="checkbox"/> 56.0%	<u>UPL</u>	Prevalence Index = B/A = <u>4.080</u>
2. <u>Phalaris arundinacea</u>	20	<input type="checkbox"/> 16.0%	<u>FACW</u>	
3. <u>Setaria pumila</u>	20	<input type="checkbox"/> 16.0%	<u>FAC</u>	
4. <u>Solidago canadensis</u>	15	<input type="checkbox"/> 12.0%	<u>FACU</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	125	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0$ <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicators are absent.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 18-Oct-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-037 PFO  
 Investigator(s): MRK, RBL Section, Township, Range: S        T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.182489 Long.: -82.794527 Datum: NAD83  
 Soil Map Unit Name: PwA: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a slight depression in a forested habitat. Depression is collecting surface runoff which dissipates into an upland section of the forest and agricultural field to the west.	

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius )				Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
1. <u>Acer saccharinum</u>	25	<input checked="" type="checkbox"/> 50.0%	FACW	
2. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/> 50.0%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
50 = Total Cover				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>295</u> (B)  Prevalence Index = B/A = <u>2.565</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius )				
1. <u>Lindera benzoin</u>	25	<input checked="" type="checkbox"/> 71.4%	FACW	
2. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/> 28.6%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
35 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius )				
1. <u>Microstegium vimineum</u>	20	<input checked="" type="checkbox"/> 66.7%	FAC	
2. <u>Toxicodendron radicans</u>	10	<input checked="" type="checkbox"/> 33.3%	FAC	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
30 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
0 = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicator present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 18-Oct-23  
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-037 UPL  
 Investigator(s): MRK, RBL Section, Township, Range: S 3N T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.182037 Long.: -82.794549 Datum: NAD83  
 Soil Map Unit Name: PwA: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-037. Upland data was collected within a forested habitat. Not a wetland point as hydric soil and wetland hydrology criteria met.	

VEGETATION - Use scientific names of plants.

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/> <u>37.5%</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
2. <u>Carya ovata</u>	<u>25</u>	<input checked="" type="checkbox"/> <u>31.3%</u>	<u>FACU</u>	Percent of dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)
3. <u>Quercus rubra</u>	<u>25</u>	<input checked="" type="checkbox"/> <u>31.3%</u>	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
	<u>80</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:
1. <u>Lindera benzoin</u>	<u>40</u>	<input checked="" type="checkbox"/> <u>66.7%</u>	<u>FACW</u>	Total % Cover of: Multiply by:
2. <u>Carya ovata</u>	<u>10</u>	<input type="checkbox"/> <u>16.7%</u>	<u>FACU</u>	OBL species <u>0</u> x 1 = <u>0</u>
3. <u>Acer rubrum</u>	<u>10</u>	<input type="checkbox"/> <u>16.7%</u>	<u>FAC</u>	FACW species <u>40</u> x 2 = <u>80</u>
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		FAC species <u>55</u> x 3 = <u>165</u>
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		FACU species <u>75</u> x 4 = <u>300</u>
	<u>60</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>170</u> (A) <u>545</u> (B)
1. <u>Toxicodendron radicans</u>	<u>10</u>	<input checked="" type="checkbox"/> <u>66.7%</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.206</u>
2. <u>Microstegium vimineum</u>	<u>5</u>	<input checked="" type="checkbox"/> <u>33.3%</u>	<u>FAC</u>	
3. _____		<input type="checkbox"/> <u>0.0%</u>		
4. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
5. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
6. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
7. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
8. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
9. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
10. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		
	<u>15</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:
1. <u>Parthenocissus quinquefolia</u>	<u>15</u>	<input checked="" type="checkbox"/> <u>100.0%</u>	<u>FACU</u>	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	<u>0</u>	<input type="checkbox"/> <u>0.0%</u>		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	<u>15</u>	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation indicator present.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 06-Dec-23  
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-038 PFO**  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.174205 Long.: -82.772836 Datum: NAD83  
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: This PFO wetland is located within a forested depression that is collecting surface runoff. Water draining from an agricultural field flows west into the forest and dissipates into another agricultural field to the west.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> radius )				
1. <u>Acer rubrum</u>	15	<input checked="" type="checkbox"/> 50.0%	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Quercus palustris</u>	15	<input checked="" type="checkbox"/> 50.0%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	30	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> radius )				
1. <u>Ulmus rubra</u>	20	<input checked="" type="checkbox"/> 100.0%	FAC	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>80</u> x 2 = <u>160</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>265</u> (B)  Prevalence Index = B/A = <u>2.304</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	20	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5'</u> radius )				
1. <u>Carex intumescens</u>	50	<input checked="" type="checkbox"/> 76.9%	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Phalaris arundinacea</u>	15	<input checked="" type="checkbox"/> 23.1%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	65	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation was observed within the Project area at the time of survey.

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 06-Dec-23  
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-038 UPL**  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 3N R 16W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat  
 Slope: 1.0% / 0.6 ° Lat.: 40.174071 Long.: -82.771921 Datum: NAD83  
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Upland data point for W-MRK-038. Upland data was collected within an agricultural field.	

**VEGETATION - Use scientific names of plants.**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%	0	
	0	= Total Cover		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>100</u> x 5 = <u>500</u> Column Totals: <u>100</u> (A) <u>500</u> (B)  Prevalence Index = B/A = <u>5.000</u>
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<b>Herb Stratum</b> (Plot size: <u>5'</u> radius )				
1. <u>Zea mays</u>	100	<input checked="" type="checkbox"/> 100.0%	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> <b>1 - Rapid Test for Hydrophytic Vegetation</b> <input type="checkbox"/> <b>2 - Dominance Test is &gt; 50%</b> <input type="checkbox"/> <b>3 - Prevalence Index is ≤ 3.0</b> <sup>1</sup> <input type="checkbox"/> <b>4 - Morphological Adaptations</b> <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation</b> <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
<b>Woody Vine Stratum</b> (Plot size: <u>30'</u> radius )				
1. _____	0	<input type="checkbox"/> 0.0%		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

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

<sup>1</sup>Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Project/Site: Vassel Green Chapel Curley City/County: Delaware County Sampling Date: 01/28/2025  
 Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001 PEM  
 Investigator(s): AGS/TJK Section, Township, Range: T4N R17W  
 Landform (hillside, terrace, etc.): Depression/Floodplain Local relief (concave, convex, none): Concave  
 Slope (%): 2 Lat: 40.225168 Long: -82.854171 Datum: NAD 83  
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil X, or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 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 <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
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Remarks:  
 W-AGS-001 is a PEM, abutting wetland situated in a transmission line ROW. This wetland receives hydrology from precipitation and S-MRK-021.. The vegetation and soil are disturbed from ROW-related activity.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
=Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Microstegium vimineum</u>	30	Yes	FAC	
2. <u>Setaria pumila</u>	20	Yes	FAC	
3. <u>Dipsacus fullonum</u>	10	Yes	FACU	
4. <u>Scirpus cyperinus</u>	10	Yes	OBL	
5. <u>Epilobium ciliatum</u>	10	Yes	FACW	
6. <u>Cinna arundinacea</u>	10	Yes	FACW	
7. <u>Typha latifolia</u>	5	No	OBL	
8. <u>Juncus effusus</u>	5	No	OBL	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
100 =Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
=Total Cover				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)  
 Total Number of Dominant Species Across All Strata: 6 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**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 = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
     1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
     3 - Prevalence Index is ≤3.0<sup>1</sup>  
     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is present. The vegetation is disturbed from mowing.

Project/Site: Vassel Green Chapel Curley City/County: Delaware County Sampling Date: 01/28/2025  
 Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001 UPL  
 Investigator(s): AGS/TJK Section, Township, Range: T4N R17W  
 Landform (hillside, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 3 Lat: 40.224946 Long: -82.854140 Datum: NAD 83  
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: None  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation X, Soil     , or Hydrology      significantly disturbed? Are "Normal Circumstances" present? Yes      No X  
 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 <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
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Remarks:  
 W-AGS-001-UPL is an upland data point situated in a transmission line ROW. T. The vegetation appears disturbed from mowing.

**VEGETATION – Use scientific names of plants.**

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				=Total Cover
<u>Herb Stratum</u> (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Tridens flavus</u>	35	Yes	UPL	
2. <u>Dactylis glomerata</u>	35	Yes	FACU	
3. <u>Solidago canadensis</u>	10	No	FACU	
4. <u>Daucus carota</u>	10	No	UPL	
5. <u>Dipsacus fullonum</u>	10	No	FACU	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				100 =Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				=Total Cover

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  
 Total Number of Dominant Species Across All Strata: 2 (B)  
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**  
 Total % Cover of:                      Multiply by:  
 OBL species 0 x 1 = 0  
 FACW species 0 x 2 = 0  
 FAC species 0 x 3 = 0  
 FACU species 55 x 4 = 220  
 UPL species 45 x 5 = 225  
 Column Totals: 100 (A)                      445 (B)  
 Prevalence Index = B/A = 4.45

**Hydrophytic Vegetation Indicators:**  
     1 - Rapid Test for Hydrophytic Vegetation  
     2 - Dominance Test is >50%  
     3 - Prevalence Index is ≤3.0<sup>1</sup>  
     4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
     Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?**      Yes           No X

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is not present. The vegetation is disturbed from mowing.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Licking Sampling Date: 27-Jun-23  
 Applicant/Owner: AEP State: OH Sampling Point: P-MRK-001  
 Investigator(s): MRK, TW Section, Township, Range: S \_\_\_\_\_ T 3N R 15W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.133218 Long.: -82.754982 Datum: NAD83  
 Soil Map Unit Name: Pe; Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes NWI classification: PUBGx

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Open water pond is located within a residential lawn.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				<b>Dominance Test worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%		Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				<b>Prevalence Index worksheet:</b>
1. _____	0	<input type="checkbox"/> 0.0%		Total % Cover of:      Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%		OBL species <u>5</u> x 1 = <u>5</u>
3. _____	0	<input type="checkbox"/> 0.0%		FACW species <u>20</u> x 2 = <u>40</u>
4. _____	0	<input type="checkbox"/> 0.0%		FAC species <u>0</u> x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u> x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Column Totals: <u>25</u> (A) <u>45</u> (B)
1. <u>Carex vulpinoidea</u>	20	<input checked="" type="checkbox"/> 80.0%	FACW	Prevalence Index = B/A = <u>1.800</u>
2. <u>Typha angustifolia</u>	5	<input checked="" type="checkbox"/> 20.0%	OBL	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	25	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				<b>Hydrophytic Vegetation Indicators:</b>
1. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
				<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is limited to the pond edge only.

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**WETLAND DETERMINATION DATA FORM - Midwest Region**

Project/Site: Vassell-Green Chapel City/County: Delaware Sampling Date: 11-Sep-23  
 Applicant/Owner: AEP State: OH Sampling Point: P-MRK-002  
 Investigator(s): MRK, KRS Section, Township, Range: S \_\_\_\_\_ T 4N R 17W  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave  
 Slope: 1.0% / 0.6 ° Lat.: 40.22643 Long.: -82.85426 Datum: NAD83  
 Soil Map Unit Name: Cen1B1 : Centerburg silt loam, 2 to 6 percent slopes NWI classification: PUBGx

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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Open water pond located at the western edge of the current study area. Amphibians were observed using the pond.	

**VEGETATION - Use scientific names of plants.**

Stratum (Plot size: _____)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> radius)				
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15'</u> radius)				Prevalence Index worksheet: Total % Cover of:      Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>25</u> (A) <u>25</u> (B)  Prevalence Index = B/A = <u>1.000</u>
1. <u>Salix nigra</u>	25	<input checked="" type="checkbox"/> 100.0%	OBL	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
	25	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5'</u> radius)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is > 50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
3. _____	0	<input type="checkbox"/> 0.0%	_____	
4. _____	0	<input type="checkbox"/> 0.0%	_____	
5. _____	0	<input type="checkbox"/> 0.0%	_____	
6. _____	0	<input type="checkbox"/> 0.0%	_____	
7. _____	0	<input type="checkbox"/> 0.0%	_____	
8. _____	0	<input type="checkbox"/> 0.0%	_____	
9. _____	0	<input type="checkbox"/> 0.0%	_____	
10. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/> 0.0%	_____	
2. _____	0	<input type="checkbox"/> 0.0%	_____	
	0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)  
 Hydrophytic vegetation is limited to the pond edge.

<b>Version 5.0</b>	<b>Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization</b>
	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;"> <p><b>Background Information Scoring</b></p> <p><b>Boundary Worksheet Narrative Rating</b></p> <p><b>Field Form Quantitative Rating</b></p> <p><b>ORAM Summary Worksheet</b></p> <p><b>Wetland Categorization Worksheet</b></p> </div> <div style="width: 25%; text-align: right; vertical-align: top;"> <p>Ohio EPA, Division of Surface Water Final: February 1, 2001</p> </div> </div>

**Instructions**

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

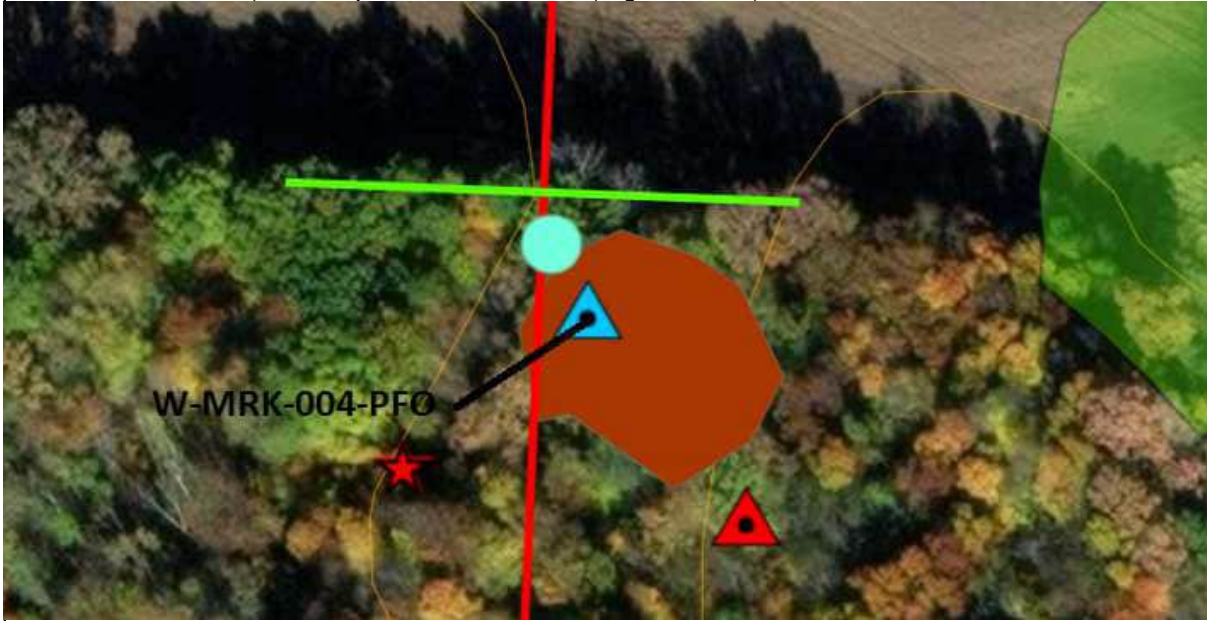
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated.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

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

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

Name of Wetland:	W-MRK-004		
Wetland Size (delineated acres):	0.37	Wetland Size (Estimated total acres):	0.37

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



Comments, Narrative Discussion, Justification of Category Changes:

PFO wetland is located within a forested depression. Depression is collecting surface runoff from the surrounding area and is seasonally inundated. Wetland boundary follows edge of depression.

Final score:	35	Category:	Modified 2
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**Wetland ID:** W-MRK-004

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-004</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans var. glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica var. capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis spp.</i>	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum spp.</i>		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

**Wetland ID:** W-MRK-004

**Site:** Vassell-Green Chapel **Rater(s):** MRK, AJH **Date:** 6/15/2023

**Field ID:**  
W-MRK-004 PFO

**32.0**  
subtotal this page

**0.0** **32.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

**3.0** **35.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- Aquatic bed
- Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

**6b. horizontal (plan view) Interspersion.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 1 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 0 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

- Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
- Native spp are dominant component of the vegetation, mod 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 to
- A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**35.0** TOTAL (Max 100 pts)  
**Modified 2** Category

<b>Wetland ID:</b>	<b>W-MRK-004</b>
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### Wetland Categorization Worksheet

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

**Final Category**

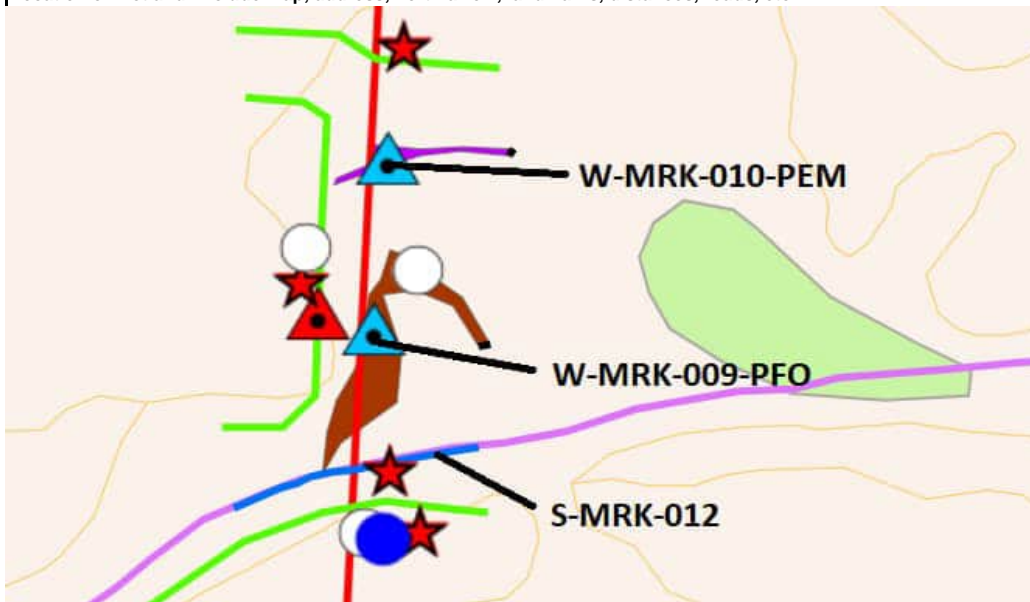
Choose one	Category 1	*Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Background Information

Name:	MRK, RBL
Date:	6/22/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	<a href="mailto:mathew.kline@aecom.com">mathew.kline@aecom.com</a>
<b>Name of Wetland:</b>	<b>W-MRK-009</b>
Vegetation Communit(ies):	PFO
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.189848, -82.79656
USGS Quad Name:	Jersey
County:	Delaware
Township:	Harlem
Section and Subsection:	T3N R16W
Hydrologic Unit Code:	Hoover Reservoir-Big Walnut Creek 050600011308
Site Visit:	6/22/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

<b>Wetland ID:</b>	<b>W-MRK-009</b>
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### Scoring Boundary Worksheet

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

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

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

**Wetland ID:** W-MRK-009

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

Wetland ID: W-MRK-009

Site: Vassell-Green Chapel Rater(s): MRK, RBL Date: 6/22/2023

2.0 2.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field ID:

W-MRK-009 PFO

Table with 2 columns: Delineated acres, Total acres. Values: 0.35, 0.40

6.0 8.0
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 50m (164ft) or more around wetland perimeter (7)
MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
x NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

12.0 20.0
max 30 pts. subtotal

Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ditch
tile
dike
weir
stormwater input
point source (nonstormwater)
filling/grading
road bed/RR track
dredging
Other:

8.0 28.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

28.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>W-MRK-009</b>
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**ORAM Summary Worksheet**

		<b>Circle answer or insert score</b>		<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>2</b>		
	Metric 2. Buffers and surrounding land use	<b>6</b>		
	Metric 3. Hydrology	<b>12</b>		
	Metric 4. Habitat	<b>8</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersed, microtopography	<b>1</b>		
	TOTAL SCORE	<b>29</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

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

**Instructions**

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

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

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

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

Name of Wetland:	W-MRK-010		
Wetland Size (delineated acres):	0.07	Wetland Size (Estimated total acres):	1.00

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression on a former forest trail. Depression extends slightly beyond the trail which is collecting surface runoff from the surrounding area. Wetland extends beyond the current study area.

Final score:	21	Category:	1
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**Wetland ID:** W-MRK-010

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-010</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

**Wetland ID:** W-MRK-010

**Site:** Vassell-Green Chapel **Rater(s):** MRK, RBL **Date:** 6/22/2023

**23.0**  
subtotal this page

**Field ID:**  
W-MRK-010 PEM

**0.0** **23.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

**-2.0** **21.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**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) Interspersions.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

- 0 Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
- 1 Native spp are dominant component of the vegetation, mod 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 to
- 2 A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**21.0** TOTAL (Max 100 pts)  
**1** Category

<b>Wetland ID:</b>	<b>W-MRK-010</b>
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### Wetland Categorization Worksheet

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

#### Final Category

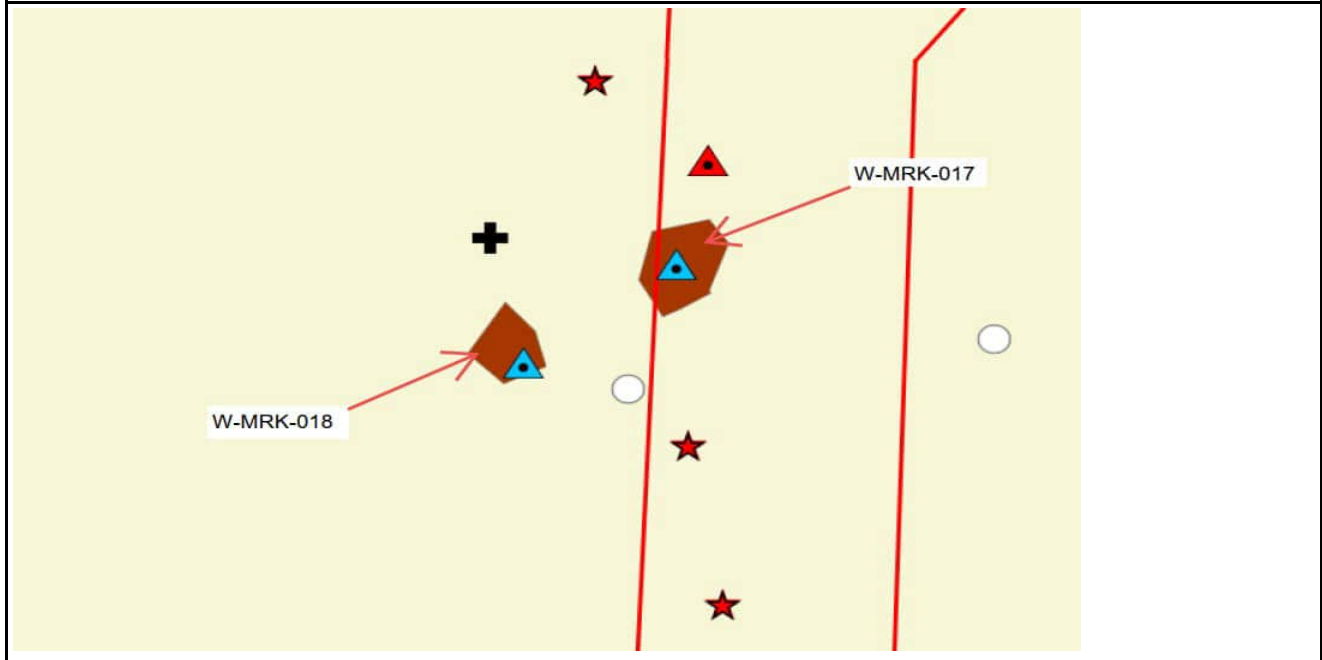
Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Background Information

Name:	MRK, TW
Date:	6/27/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	<a href="mailto:matthew.kline@aecom.com">matthew.kline@aecom.com</a>
<b>Name of Wetland:</b>	<b>W-MRK-017</b>
Vegetation Communit(ies):	PFO
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.140428, -82.749103
USGS Quad Name:	Johnstown
County:	Licking
Township:	3N
Section and Subsection:	15W
Hydrologic Unit Code:	HUC12- 050600011307 Duncan Run
Site Visit:	6/27/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

<b>Wetland ID:</b>	<b>W-MRK-017</b>
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### Scoring Boundary Worksheet

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

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

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

**Wetland ID:** W-MRK-017

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

Wetland ID: W-MRK-017

Site: AEP Vassell-Green Chapel Rater(s): MRK, TW Date: 6/27/2023

1.0 1.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field ID:

W-MRK-017 PFO

Table with 2 columns: Delineated acres, Total acres. Values: 0.15, 0.15

6.0 7.0
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 50m (164ft) or more around wetland perimeter (7)
MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
x NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

12.0 19.0
max 30 pts. subtotal

Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

12.0 31.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

31.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>W-MRK-017</b>
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**ORAM Summary Worksheet**

		<b>Circle answer or insert score</b>		<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>1</b>		
	Metric 2. Buffers and surrounding land use	<b>6</b>		
	Metric 3. Hydrology	<b>12</b>		
	Metric 4. Habitat	<b>12</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>4</b>		
	TOTAL SCORE	<b>35</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

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

**Instructions**

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

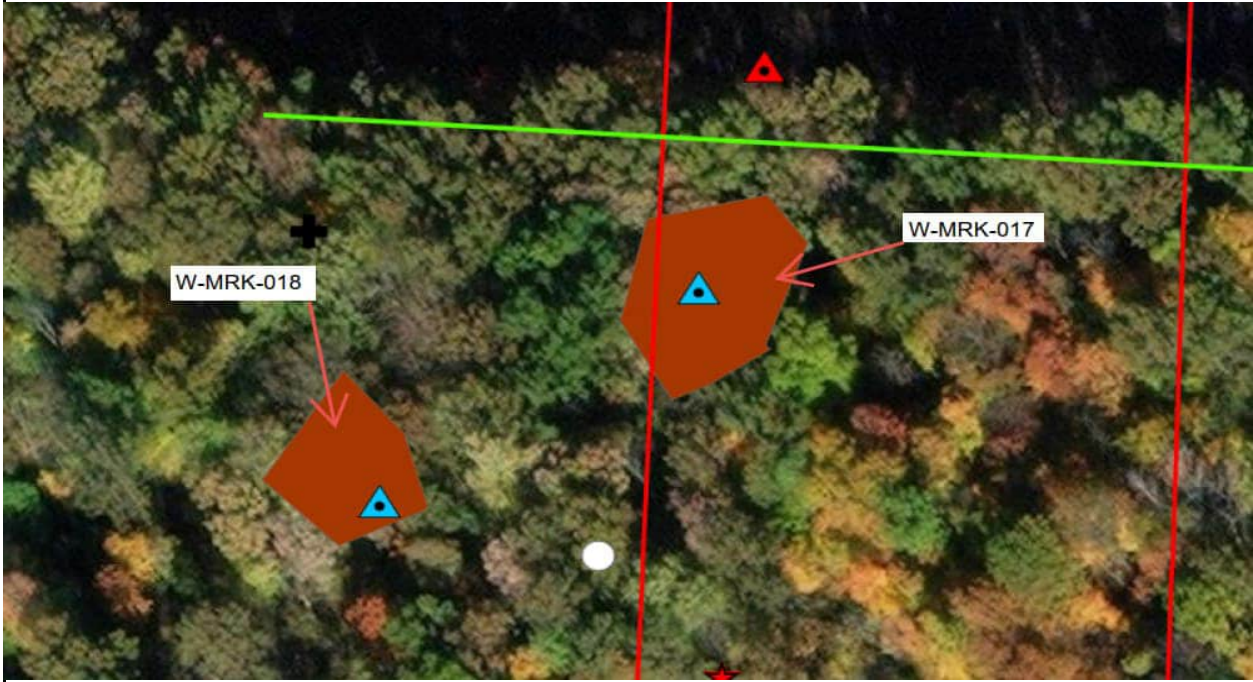
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated.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

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

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

Name of Wetland:	W-MRK-018		
Wetland Size (delineated acres):	0.09	Wetland Size (Estimated total acres):	0.09

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



Comments, Narrative Discussion, Justification of Category Changes:

This PFO wetland is located within a forested depression that is collecting surface runoff. Wetland is seasonally inundated with water based on water stained leaves and debris drift deposits.

Final score:	27	Category:	1
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**Wetland ID:** W-MRK-018

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-018</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-018

Site: AEP Vassell-Green Chapel Rater(s): MRK, TW Date: 6/27/2023

25.0 subtotal this page

Field ID: W-MRK-018 PFO

0.0 25.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2.0 27.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
Emergent
Shrub
1 Forest
Mudflats
Open water
Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
1 Coarse woody debris >15cm (6in)
0 Standing dead >25cm (10in) dbh
0 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

- Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

27.0 TOTAL (Max 100 pts)
1 Category

<b>Wetland ID:</b>	<b>W-MRK-018</b>
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### Wetland Categorization Worksheet

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

#### Final Category

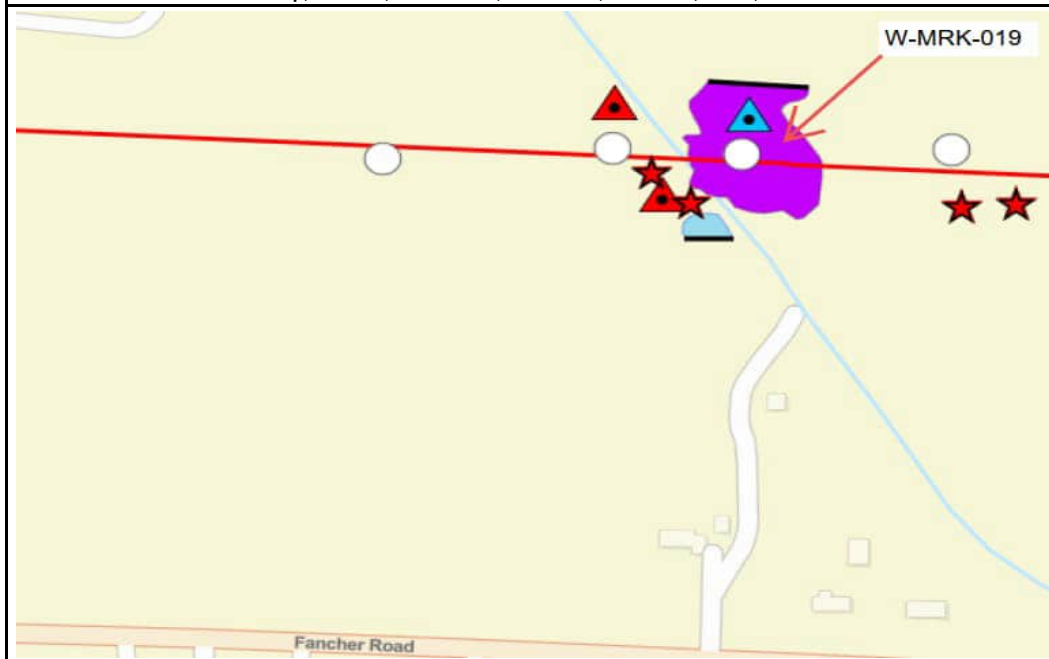
Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Background Information

Name:	MRK, TW
Date:	6/27/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	<a href="mailto:matthew.kline@aecom.com">matthew.kline@aecom.com</a>
Name of Wetland:	W-MRK-019
Vegetation Communit(ies):	PEM
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.133782, -82.754779
USGS Quad Name:	Sunbury
County:	Licking
Township:	3N
Section and Subsection:	15W
Hydrologic Unit Code:	HUC12- 050600011307 Duncan Run
Site Visit:	6/27/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

<b>Wetland ID:</b>	<b>W-MRK-019</b>
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### Scoring Boundary Worksheet

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

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

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

**Wetland ID:** W-MRK-019

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

Wetland ID: W-MRK-019

Site: AEP Vassell-Green Chapel Rater(s): MRK, TW Date: 6/27/2023

2.0 2.0
max 6 pts. subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field ID:

W-MRK-019 PEM

Table with 2 columns: Delineated acres: 1.16, Total acres: 1.70

2.0 4.0
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 50m (164ft) or more around wetland perimeter (7)
MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
x NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0 11.0
max 30 pts. subtotal

Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

8.0 19.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

19.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>W-MRK-019</b>
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**ORAM Summary Worksheet**

		<b>Circle answer or insert score</b>		<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>2</b>		
	Metric 2. Buffers and surrounding land use	<b>2</b>		
	Metric 3. Hydrology	<b>7</b>		
	Metric 4. Habitat	<b>8</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>-1</b>		
	TOTAL SCORE	<b>18</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

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

**Instructions**

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

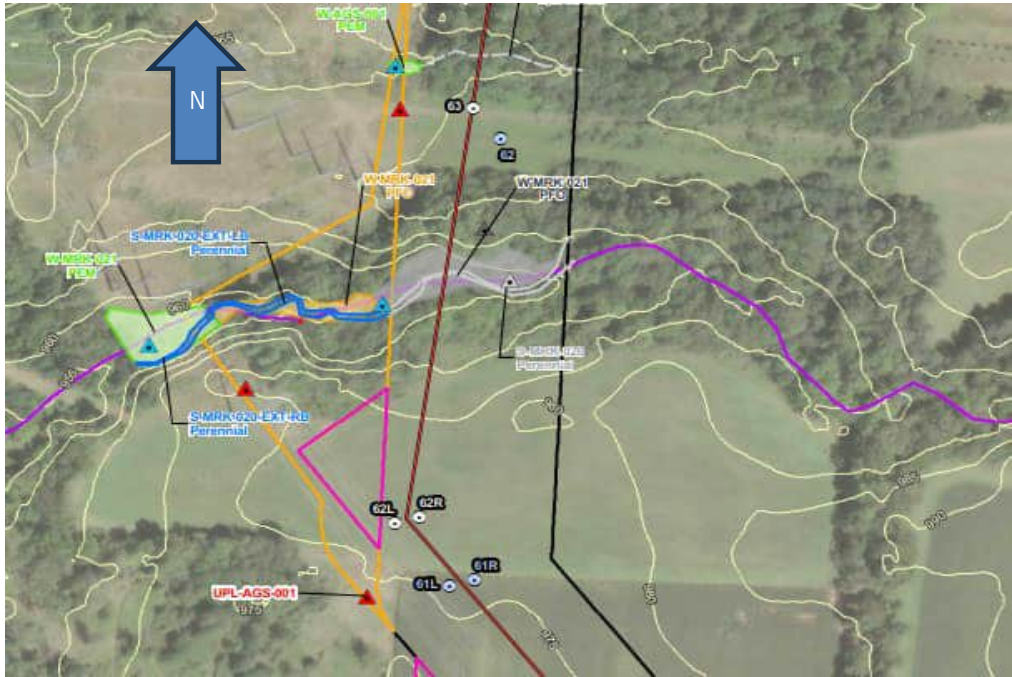
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated.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

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

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

Name of Wetland:	W-MRK-021		
Wetland Size (delineated acres):	4.01	Wetland Size (Estimated total acres):	4.20

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



Comments, Narrative Discussion, Justification of Category Changes:

W-MRK-021 is a PEM, abutting wetland that is located along the riparian zone of S-MRK-020. The sources of hydrology are precipitation and stream flooding. The vegetation is dominated by *Phalaris arundinacea* and is disturbed from mowing.

W-MRK-021 is a PFO, abutting wetland that is located along the riparian zone of S-MRK-020. The sources of hydrology are precipitation and stream flooding. The wetland is within a conservation easement, therefore, there is little to no disturbance.

Final score:	42	Category:	Modified 2
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**Wetland ID:** W-MRK-021

### Narrative Rating

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

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

**Wetland ID: W-MRK-021**

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinaratum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatis spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

**Wetland ID:** W-MRK-021

**Site:** Vassel Green Chapel Curley **Rater(s):** AGS, TJK **Date:** 1/29/2025

**36.0**  
subtotal this page

**Field ID:**  
W-MRK-021 PEM/PFO

**0.0** **36.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

**6.0** **42.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- Aquatic bed
- 2 Emergent
- Shrub
- 2 Forest
- Mudflats
- Open water
- Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussocks
- 1 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 0 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

- Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
- Native spp are dominant component of the vegetation, mod 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 to
- A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**42.0** TOTAL (Max 100 pts)  
**Modified 2** Category

<b>Wetland ID:</b>	<b>W-MRK-021</b>
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### Wetland Categorization Worksheet

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

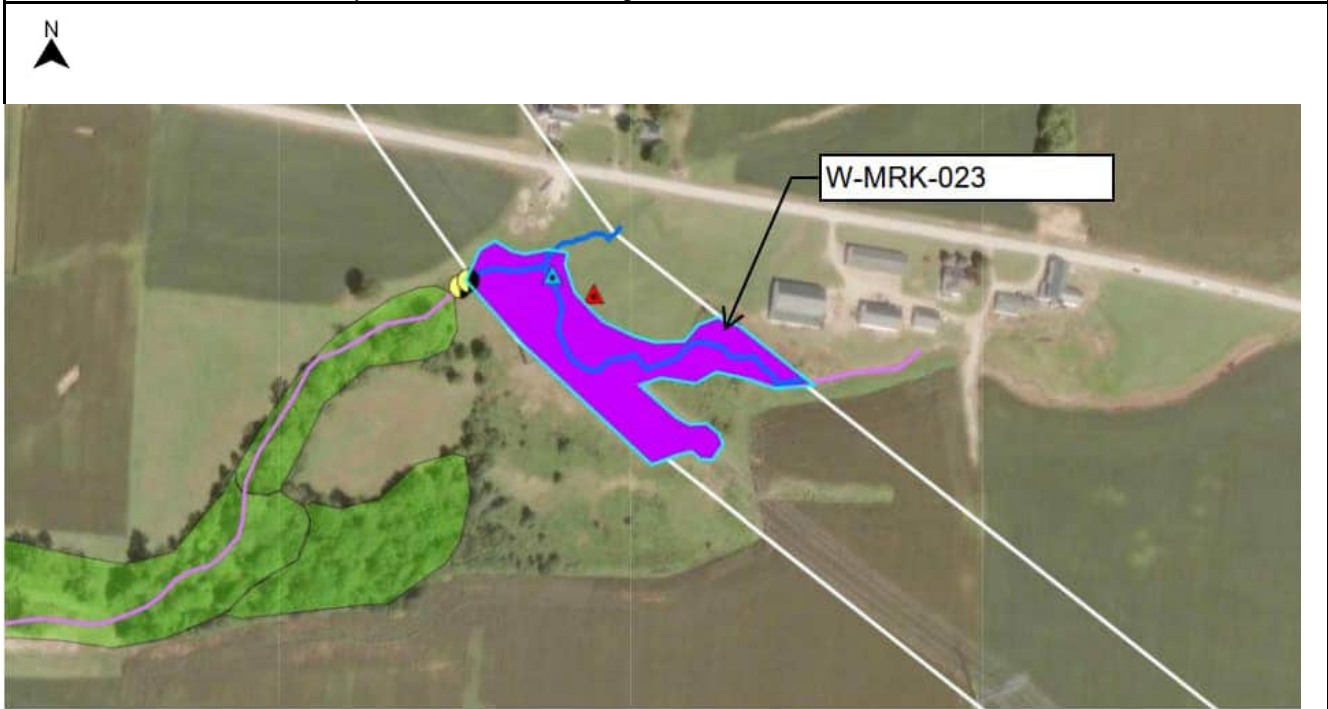
#### Final Category

Choose one	Category 1	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-023		
Wetland Size (delineated acres):	2.70	Wetland Size (Estimated total acres):	15.00

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located within a hillside depression that is collecting surface runoff and flow from an intermittent watercourse that loses its banks at certain areas of the wetland. The wetland boundary follows edge of depression.

Final score:	23	Category:	1
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**Wetland ID:** W-MRK-023

### Narrative Rating

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

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

**Wetland ID:** W-MRK-023

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatis spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-023

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/11/2023

26.0 subtotal this page

Field ID: W-MRK-023 PEM

0.0 26.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-3.0 23.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

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) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
0 Coarse woody debris >15cm (6in)
0 Standing dead >25cm (10in) dbh
0 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

23.0 TOTAL (Max 100 pts)
1 Category

<b>Wetland ID:</b>	<b>W-MRK-023</b>
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### Wetland Categorization Worksheet

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

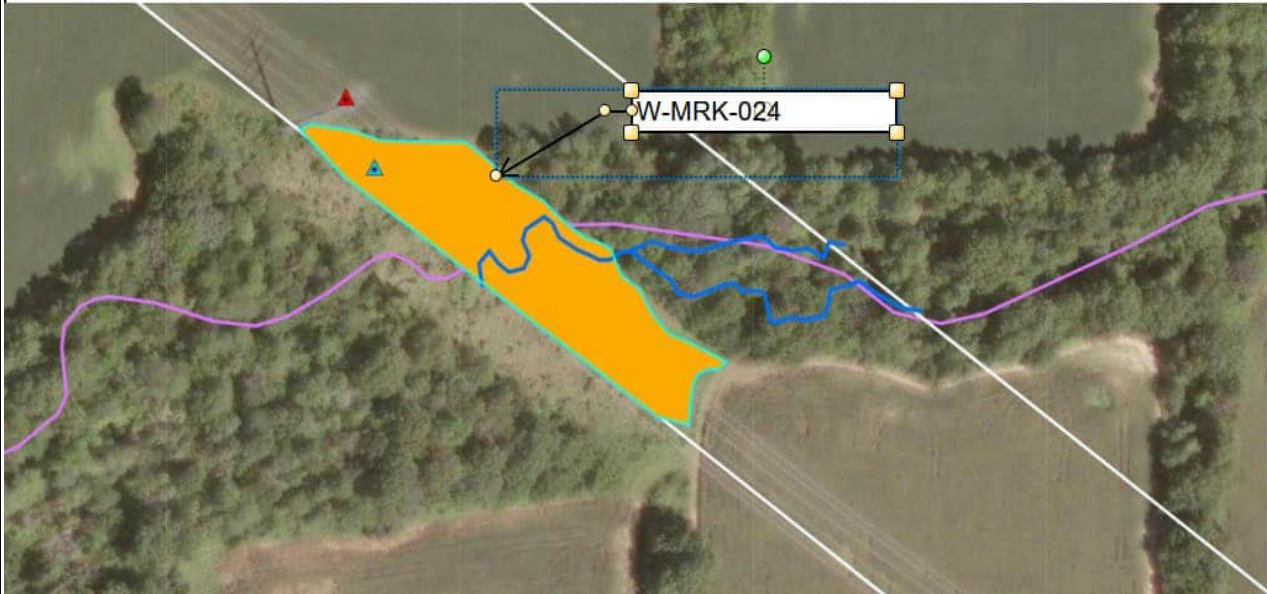
#### Final Category

Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-024		
Wetland Size (delineated acres):	1.40	Wetland Size (Estimated total acres):	1.90

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



Comments, Narrative Discussion, Justification of Category Changes:

This PSS wetland is located in a depression on the existing transmission line right-of-way. Depression is collecting surface runoff and is also seasonally flooded by an intermittent watercourse that flows through the wetland.

Final score:	16	Category:	1
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**Wetland ID:** W-MRK-024

### Narrative Rating

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

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

**Wetland ID: W-MRK-024**

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatis spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-024

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/12/2023

17.0 subtotal this page

Field ID: W-MRK-024 PEM

0.0 17.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-1.0 16.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
1 Emergent
1 Shrub
Forest
Mudflats
Open water
Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
0 Coarse woody debris >15cm (6in)
0 Standing dead >25cm (10in) dbh
0 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

16.0 TOTAL (Max 100 pts)
1 Category

<b>Wetland ID:</b>	<b>W-MRK-024</b>
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### Wetland Categorization Worksheet

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

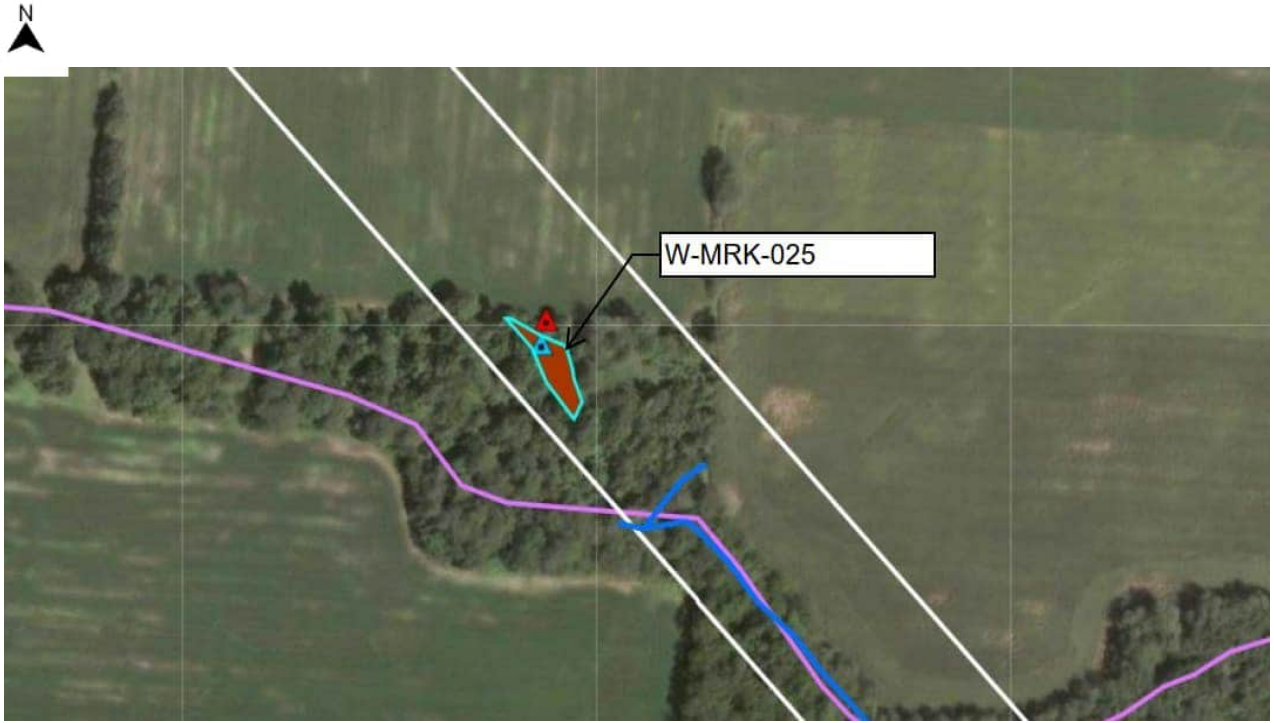
#### Final Category

Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-025		
Wetland Size (delineated acres):	0.16	Wetland Size (Estimated total acres):	0.16

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



Comments, Narrative Discussion, Justification of Category Changes:

This PFO wetland is located in a depression. Depression is seasonally flooded. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by *Quercus palustris*.

Final score:	30	Category:	1 or 2 Gray Zone
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**Wetland ID:** W-MRK-025

### Narrative Rating

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

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

**Wetland ID: W-MRK-025**

**Table 1. Characteristic plant species.**

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

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

**Wetland ID:** W-MRK-025

**Site:** Vassell-Green Chapel **Rater(s):** MRK, KRS **Date:** 9/12/2023

**25.0**  
subtotal this page

**Field ID:**  
W-MRK-025 PFO

**0.0** **25.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**  
Check all that apply and score as indicated.

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

**5.0** **30.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other

**6b. horizontal (plan view) Interspersion.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussocks
- 0 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 0 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**30.0** **TOTAL (Max 100 pts)**  
**1 or 2 Gray Zone** Category

<b>Wetland ID:</b>	<b>W-MRK-025</b>
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### Wetland Categorization Worksheet

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

#### Final Category

Choose one	Category 1	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-027		
Wetland Size (delineated acres):	0.30	Wetland Size (Estimated total acres):	0.50

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression adjacent to an agricultural field. Depression is inundated and heavy siltation is present from agricultural runoff. The wetland boundary follows depression and surface water edge.

Final score:	21	Category:	1
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**Wetland ID:** W-MRK-027

### Narrative Rating

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

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

**Wetland ID: W-MRK-027**

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

**Wetland ID:** W-MRK-027

**Site:** Vassell-Green Chapel **Rater(s):** MRK, KRS **Date:** 9/13/2023

**20.0**  
subtotal this page

**Field ID:**  
W-MRK-027 PEM

**0.0** **20.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

**1.0** **21.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**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 (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- x Low (1)
- None (0)

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 2 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species  
 Native spp are dominant component of the vegetation, mod 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 to  
 A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**21.0** TOTAL (Max 100 pts)  
**1** Category

<b>Wetland ID:</b>	<b>W-MRK-027</b>
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### Wetland Categorization Worksheet

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

#### Final Category

Choose one	*Category 1	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-028, W-MRK-029		
Wetland Size (delineated acres):	2.60	Wetland Size (Estimated total acres):	>3 acres

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



Comments, Narrative Discussion, Justification of Category Changes:

These are PFO wetlands located within a large forested depression that is collecting surface runoff from the surrounding area. Wetlands are seasonally inundated, which was observed based on water stained leaves in the depression.

Final score:	42	Category:	Modified 2
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**Wetland ID:** W-MRK-028, W-MRK-029

### Narrative Rating

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

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

**Wetland ID: W-MRK-028, W-MRK-029**

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinaratum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatis spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-028, W-MRK-029

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/13/2023

33.0 subtotal this page

Field ID: W-MRK-028 PFO, W-MRK-029 PFO

0.0 33.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

9.0 42.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
Emergent
Shrub
2 Forest
Mudflats
Open water
Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
2 Coarse woody debris >15cm (6in)
1 Standing dead >25cm (10in) dbh
2 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

42.0 TOTAL (Max 100 pts) Modified 2 Category

**Wetland ID:** W-MRK-028, W-MRK-029

### Wetland Categorization Worksheet

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

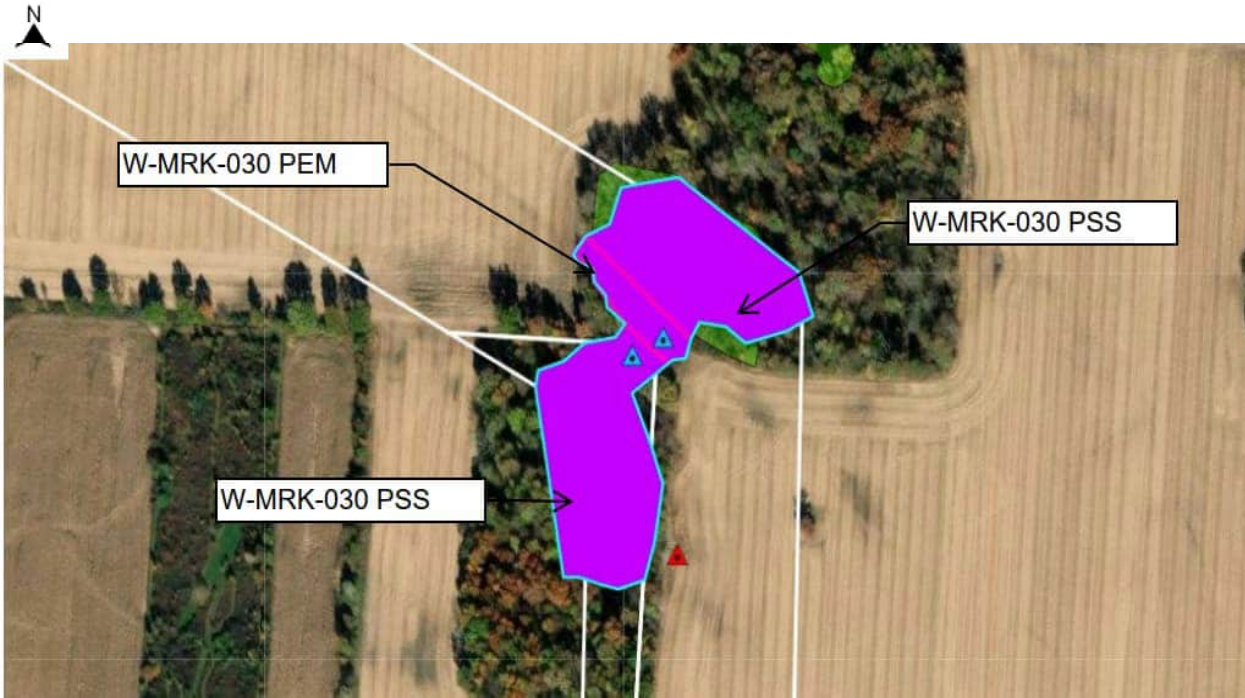
**Final Category**

Choose one	Category 1	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-030		
Wetland Size (delineated acres):	4.90	Wetland Size (Estimated total acres):	<10 acres

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



Comments, Narrative Discussion, Justification of Category Changes:

This PFO section of a PEM/PFO wetland complex is located in a depression surrounding a PEM section. Surface runoff drains out of the PFO section to the south, flows into the PEM, and flows north into another PFO section.

Final score:	45	Category:	2
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**Wetland ID:** W-MRK-030

### Narrative Rating

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

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

**Wetland ID: W-MRK-030**

Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatis spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-030

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/13/2023

33.0 subtotal this page

Field ID: W-MRK-030 PEM/PFO

0.0 33.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

12.0 45.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
1 Emergent
Shrub
2 Forest
Mudflats
Open water
Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
2 Coarse woody debris >15cm (6in)
1 Standing dead >25cm (10in) dbh
2 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

45.0 TOTAL (Max 100 pts)
2 Category

<b>Wetland ID:</b>	<b>W-MRK-030</b>
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### Wetland Categorization Worksheet

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

#### Final Category

Choose one	Category 1	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-031		
Wetland Size (delineated acres):	0.08	Wetland Size (Estimated total acres):	0.08

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



Comments, Narrative Discussion, Justification of Category Changes:

This PFO wetland is located within a forested area surrounded by agriculture. The wetland is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression and water stained leaves.

Final score:	30	Category:	1 or 2 Gray Zone
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**Wetland ID:** W-MRK-031

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-031</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-031

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/14/2023

26.0 subtotal this page

Field ID: W-MRK-031 PFO

0.0 26.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4.0 30.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
Emergent
Shrub
1 Forest
Mudflats
Open water
Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

30.0 TOTAL (Max 100 pts)
1 or 2 Gray Zone Category

<b>Wetland ID:</b>	<b>W-MRK-031</b>
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## Wetland Categorization Worksheet

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

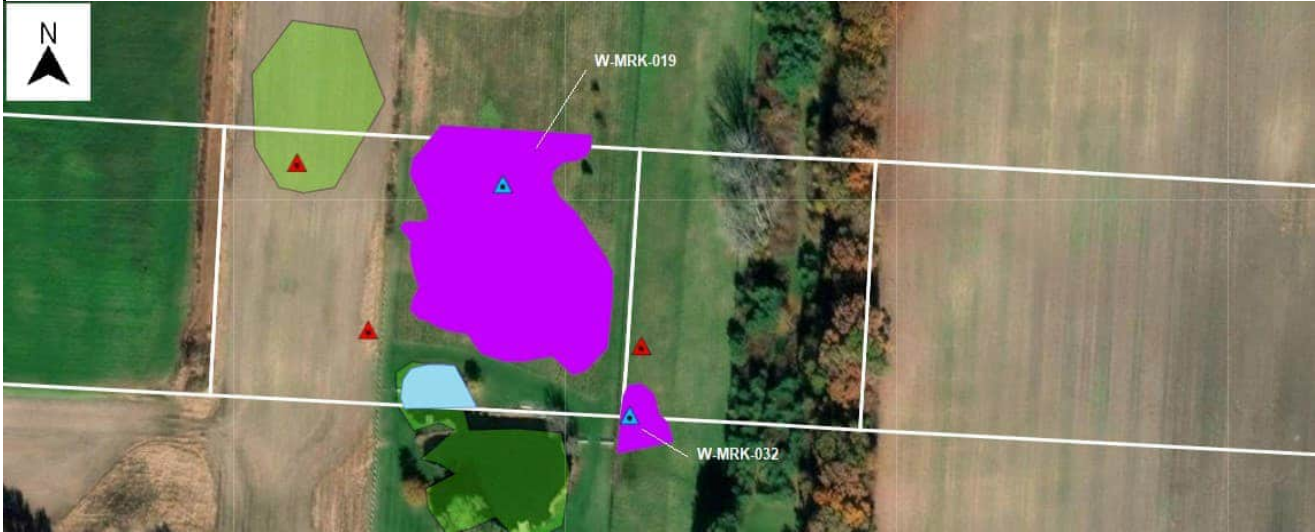
### Final Category

Choose one	Category 1	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-032		
Wetland Size (delineated acres):	0.07	Wetland Size (Estimated total acres):	0.07

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression within a pasture. The depression is collecting surface runoff and overflow from an adjacent pond. The wetland boundary follows the edge of depression.

Final score:	14	Category:	1
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**Wetland ID:** W-MRK-032

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-032</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-032

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/14/2023

14.0 subtotal this page

Field ID: W-MRK-032 PEM

0.0 14.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0.0 14.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

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) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
0 Coarse woody debris >15cm (6in)
0 Standing dead >25cm (10in) dbh
0 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

14.0 TOTAL (Max 100 pts)
1 Category

<b>Wetland ID:</b>	<b>W-MRK-032</b>
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### Wetland Categorization Worksheet

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

#### Final Category

Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

Name of Wetland:	W-MRK-033		
Wetland Size (delineated acres):	0.01	Wetland Size (Estimated total acres):	0.01

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



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression and begins at a hillside sping seep. Water follows the depression and drains down the slope to stream S-MRK-030. The wetland boundary follows edge of depression.

Final score:	19	Category:	1
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**Wetland ID:** W-MRK-033

### Narrative Rating

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

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

**Wetland ID:** W-MRK-033

<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-033

Site: Vassell-Green Chapel Rater(s): MRK, KRS Date: 9/14/2023

22.0 subtotal this page

Field ID: W-MRK-033 PEM

0.0 22.0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-3.0 19.0 max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

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) Interspersions.

Select only one.

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
0 Coarse woody debris >15cm (6in)
0 Standing dead >25cm (10in) dbh
0 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod 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 to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

19.0 TOTAL (Max 100 pts)
1 Category

<b>Wetland ID:</b>	<b>W-MRK-033</b>
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### Wetland Categorization Worksheet

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

#### Final Category

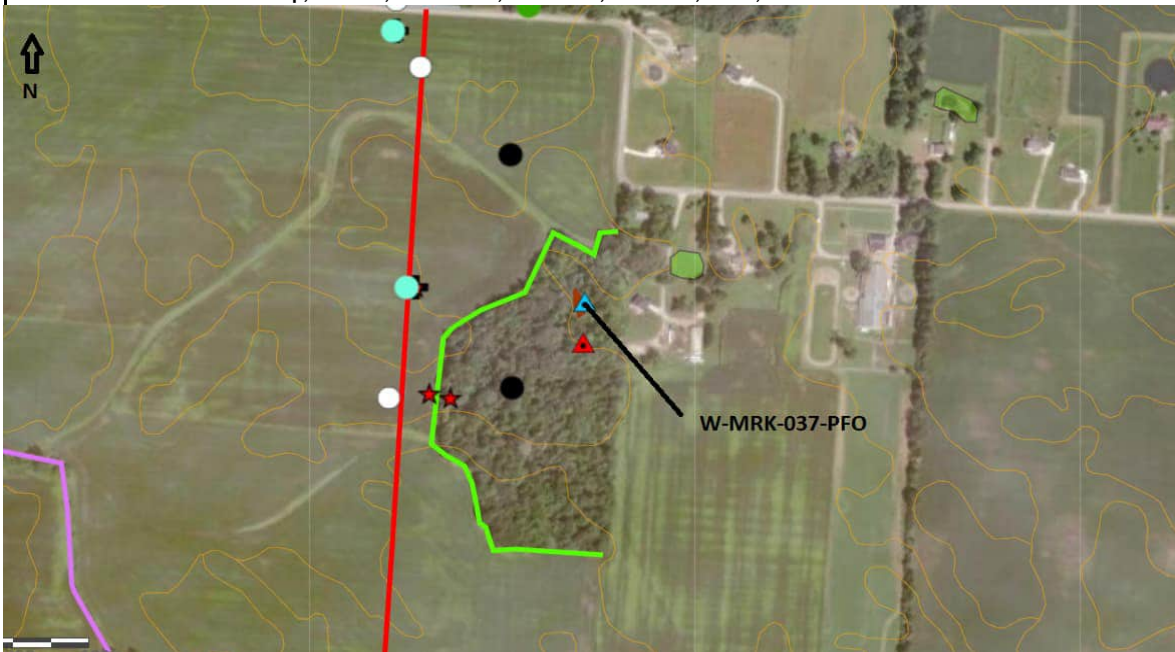
Choose one	<b>*Category 1</b>	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Background Information

Name:	Matt Kline, Rick Lipinski
Date:	10/18/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	(814) 516-1130
e-mail address:	<a href="mailto:matthew.kline@aecom.com">matthew.kline@aecom.com</a>
Name of Wetland:	W-MRK-037
Vegetation Communit(ies):	PFO
HGM Class(es):	Mineral soil flats

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.182489, -82.794527
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Harlem
Section and Subsection:	T3N R16W
Hydrologic Unit Code:	050600011308 - Hoover Reservoir-Big Walnut Creek
Site Visit:	10/18/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

<b>Wetland ID:</b>	<b>W-MRK-037</b>
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### Scoring Boundary Worksheet

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

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

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

**Wetland ID:** W-MRK-037

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

Wetland ID: W-MRK-037

Site: AEP Vassell-Green Chapel Rater(s): Matt Kline, Rick Lipinski Date: 10/18/2023

1.0 1.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
>50 acres (>20.2ha) (6 pts)
25 to <50 acres (10.1 to <20.2ha) (5 pts)
10 to <25 acres (4 to <10.1ha) (4 pts)
3 to <10 acres (1.2 to <4ha) (3 pts)
0.3 to <3 acres (0.12 to <1.2ha) (2pts)
x 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
<0.1 acres (0.04ha) (0 pts)

Field ID:

W-MRK-037

Table with 2 columns: Delineated acres, Total acres. Values: 0.12, 0.12

4.0 5.0
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 50m (164ft) or more around wetland perimeter (7)
MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
x NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

11.0 16.0
max 30 pts. subtotal

Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

11.0 27.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

27.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>W-MRK-037</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>1</b>		
	Metric 2. Buffers and surrounding land use	<b>4</b>		
	Metric 3. Hydrology	<b>11</b>		
	Metric 4. Habitat	<b>11</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersed, microtopography	<b>4</b>		
	TOTAL SCORE	<b>31</b>		Category based on score breakpoints <b>1 or 2 Gray Zone</b>

**Complete Wetland Categorization Worksheet.**

<b>Version 5.0</b>	<b>Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization</b>
	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;"> <p><b>Background Information Scoring</b></p> <p><b>Boundary Worksheet Narrative Rating</b></p> <p><b>Field Form Quantitative Rating</b></p> <p><b>ORAM Summary Worksheet</b></p> <p><b>Wetland Categorization Worksheet</b></p> </div> <div style="width: 25%; text-align: right; vertical-align: top;"> <p>Ohio EPA, Division of Surface Water Final: February 1, 2001</p> </div> </div>

**Instructions**

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

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

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

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

Name of Wetland:	W-MRK-038		
Wetland Size (delineated acres):	0.78	Wetland Size (Estimated total acres):	0.78

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



Comments, Narrative Discussion, Justification of Category Changes:

This PFO wetland is located within a forested depression that is collecting surface runoff. Water draining from an agricultural field flows west into the forest and dissipates into another agricultural field to the west.

Final score:	27	Category:	1
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**Wetland ID:** W-MRK-038

### Narrative Rating

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

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

<b>Wetland ID:</b>	<b>W-MRK-038</b>
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<b>Table 1. Characteristic plant species.</b>				
<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>oak opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans var. glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica var. capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis spp.</i>	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum spp.</i>		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

**Wetland ID:** W-MRK-038

**Site:** Vassell-Green Chapel **Rater(s):** MRK, KRS **Date:** 12/6/2023

**24.0**  
subtotal this page

**Field ID:**  
W-MRK-038 PFO

**0.0** **24.0**  
max 10 pts. subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

**3.0** **27.0**  
max 20pts. subtotal

**Metric 6. Plant communities, interspersions, microtopography.**

**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- 1 Shrub
- 1 Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

**6b. horizontal (plan view) Interspersion.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

Table 1 ORAM long form for list. Add or deduct points for coverage

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 1 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 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 1 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 2 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 3 vegetation and is of high quality

**Narrative Description of Vegetation Quality**

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species  
 Native spp are dominant component of the vegetation, mod 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 to  
 A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

**27.0** TOTAL (Max 100 pts)  
**1** Category

<b>Wetland ID:</b>	<b>W-MRK-038</b>
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### Wetland Categorization Worksheet

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

#### Final Category

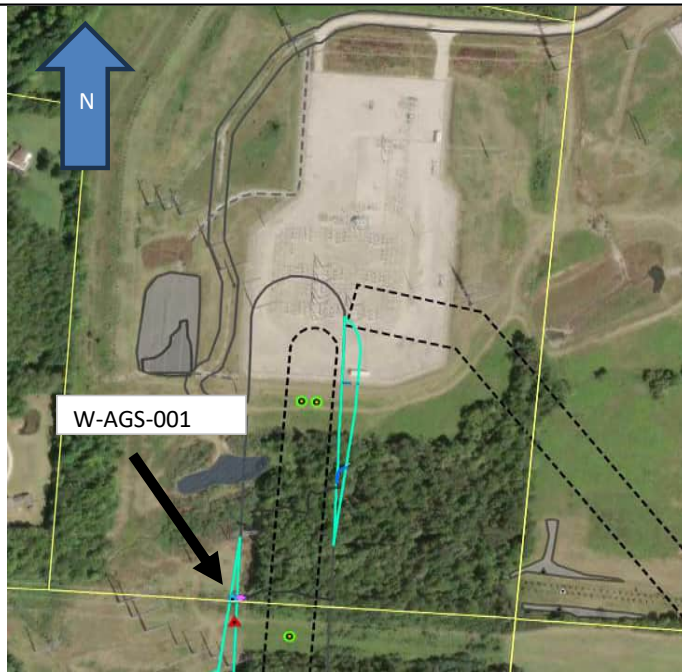
Choose one	*Category 1	Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Background Information

<b>Name:</b>	AGS, TJK
<b>Date:</b>	1/28/2025
<b>Affiliation:</b>	AECOM
<b>Address:</b>	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
<b>Phone Number:</b>	412-523-2423
<b>e-mail address:</b>	<a href="mailto:austin.sigge@aecom.com">austin.sigge@aecom.com</a>
<b>Name of Wetland:</b>	W-AGS-001
<b>Vegetation Communit(ies):</b>	PEM
<b>HGM Class(es):</b>	Depressional/Riverine

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**



<b>Lat/Long or UTM Coordinate:</b>	40.225168, -82.854171
<b>USGS Quad Name:</b>	Sunbury
<b>County:</b>	Delaware
<b>Township:</b>	T4N
<b>Section and Subsection:</b>	N/A
<b>Hydrologic Unit Code:</b>	HUC12 050600011306 Prairie Run-Big Walnut Creek
<b>Site Visit:</b>	1/28/2025
<b>National Wetland Inventory Map:</b>	See Figure 2
<b>Ohio Wetland Inventory Map:</b>	See Figure 2
<b>Soil Survey:</b>	See Figure 2
<b>Delineation report/map:</b>	See Figure 3

<b>Wetland ID:</b>	<b>W-AGS-001</b>
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### Scoring Boundary Worksheet

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

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

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

<b>Wetland ID:</b>	<b>W-AGS-001</b>
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<p><b>8b Mature forested wetlands.</b> Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?</p>	<p>YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a</p>	<p><b>*NO</b> Go to Question 9a</p>
<p><b>9a Lake Erie coastal and tributary wetlands.</b> Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?</p>	<p>YES Go to Question 9b</p>	<p><b>*NO</b> Go to Question 10</p>
<p><b>9b</b> Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 9c</p>
<p><b>9c</b> Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.</p>	<p>YES Go to Question 9d</p>	<p>NO Go to Question 10</p>
<p><b>9d</b> Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?</p>	<p>YES Wetland is a Category 3 wetland Go to Question 10</p>	<p>NO Go to Question 9e</p>
<p><b>9e</b> Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 10</p>
<p><b>10 Lake Plain Sand Prairies (Oak Openings)</b> Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.</p>	<p>YES Wetland is a Category 3 wetland. Go to Question 11</p>	<p><b>*NO</b> Go to Question 11</p>
<p><b>11 Relict Wet Prairies.</b> Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).</p>	<p>YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating</p>	<p><b>*NO</b> Complete Quantitative Rating</p>

Wetland ID: W-AGS-001

Site: Vassel Green Chapel Curley Rater(s): AGS, TJK Date: 1/28/2025

0.0 0.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
>50 acres (>20.2ha) (6 pts)
25 to <50 acres (10.1 to <20.2ha) (5 pts)
10 to <25 acres (4 to <10.1ha) (4 pts)
3 to <10 acres (1.2 to <4ha) (3 pts)
0.3 to <3 acres (0.12 to <1.2ha) (2pts)
0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
x <0.1 acres (0.04ha) (0 pts)

Field ID: W-AGS-001 PEM

Table with 2 columns: Delineated acres: 0.02, Total acres: 0.07

3.0 3.0
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 50m (164ft) or more around wetland perimeter (7)
MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
x VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
2b. Intensity of surrounding land use. Select one or double check and average.
VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
LOW. Old field (>10 years), shrubland, young second growth forest. (5)
x MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9.0 12.0
max 30 pts subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
High pH groundwater (5)
Other groundwater (3)
x Precipitation (1)
x Seasonal/Intermittent surface water (3)
Perennial surface water (lake or stream) (5)
3c. Maximum water depth. Select one.
>0.7 (27.6in) (3)
0.4 to 0.7m (15.7 to 27.6in) (2)
x <0.4m (<15.7in) (1)
3e. Modifications to natural hydrologic regime. Score one or double check and average.
None or none apparent (12)
Recovered (7)
x Recovering (3)
x Recent or no recovery (1)

- 3b. Connectivity. Score all that apply.
100 year floodplain (1)
Between stream/lake and other human use (1)
Part of wetland/upland (e.g. forest), complex (1)
x Part of riparian or upland corridor (1)
3d. Duration inundation/saturation. Score one or dbl check.
Semi- to permanently inundated/saturated (4)
Regularly inundated/saturated (3)
Seasonally inundated (2)
x Seasonally saturated in upper 30cm (12in) (1)
Check all disturbances observed
ditch
tile
dike
weir
stormwater input
point source (nonstormwater)
filling/grading
x road bed/RR track
dredging
Other: ROW work

5.5 17.5
max 20 pts subtotal

Metric 4. Habitat Alteration and Development.

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

- Check all disturbances observed
x mowing
grazing
x clearcutting
selective cutting
woody debris removal
toxic pollutants
shrub/sapling removal
herbaceous/aquatic bed removal
sedimentation
dredging
farming
nutrient enrichment

17.5
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>W-AGS-001</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	<b>0</b>		
	Metric 2. Buffers and surrounding land use	<b>3</b>		
	Metric 3. Hydrology	<b>9</b>		
	Metric 4. Habitat	<b>5.5</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersion, microtopography	<b>4</b>		
	TOTAL SCORE	<b>21.5</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-004</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> PFO Facing North



<b>W-MRK-004</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> PFO Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-004</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> PFO Facing Soil



<b>W-MRK-009</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> PFO Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-009</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> PFO Facing West



<b>W-MRK-009</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> PFO Facing Soil



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-010</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  PEM  Facing East



<b>W-MRK-010</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  PEM  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-017</b>
<b>Date:</b> June 27, 2023
<b>Description:</b>  PFO  Facing South



<b>W-MRK-017</b>
<b>Date:</b> June 27, 2023
<b>Description:</b>  PFO  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-018</b>
<b>Date:</b> June 27, 2023
<b>Description:</b>  PFO  Facing North



<b>W-MRK-018</b>
<b>Date:</b> June 27, 2023
<b>Description:</b>  PFO  Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-018</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> PFO Facing Soil



<b>W-MRK-019</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> PEM Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-019</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> PEM Facing West



<b>W-MRK-019</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> PEM Facing Soil



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-021</b>
<b>Date:</b> January 29, 2025
<b>Description:</b>  PFO  Facing East



<b>W-MRK-021</b>
<b>Date:</b> January 29, 2025
<b>Description:</b>  PFO  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-021</b>
<b>Date:</b> January 29, 2025
<b>Description:</b> PEM Facing South



<b>W-MRK-021</b>
<b>Date:</b> January 29, 2025
<b>Description:</b> PEM Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-023</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> PEM Facing North



<b>W-MRK-023</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> PEM Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-023</b>
<b>Date:</b> September 11, 2023
<b>Description:</b>  PEM  Facing Soil



<b>W-MRK-024</b>
<b>Date:</b> September 12, 2023
<b>Description:</b>  PSS  Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-024</b>
<b>Date:</b> September 12, 2023
<b>Description:</b>  PSS  Facing West



<b>W-MRK-024</b>
<b>Date:</b> September 12, 2023
<b>Description:</b>  PSS  Facing Soil



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**W-MRK-025**

**Date:**  
September 12, 2023

**Description:**  
PFO  
Facing East



**W-MRK-025**

**Date:**  
September 12, 2023

**Description:**  
PFO  
Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-027</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PEM  Facing South



<b>W-MRK-027</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PEM  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-028</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PFO  Facing North



<b>W-MRK-028</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PFO  Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-028</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> PFO Facing Soil



<b>W-MRK-029</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> PFO Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-029</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> PFO Facing West



<b>W-MRK-029</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> PFO Facing Soil



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**W-MRK-030**

**Date:**  
September 13, 2023

**Description:**  
PEM  
Facing East



**W-MRK-030**

**Date:**  
September 13, 2023

**Description:**  
PEM  
Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-030</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PFO  Facing South



<b>W-MRK-030</b>
<b>Date:</b> September 13, 2023
<b>Description:</b>  PFO  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-031</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> PFO Facing North



<b>W-MRK-031</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> PFO Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**W-MRK-031**

**Date:**  
September 11, 2023

**Description:**  
PEM  
Facing Soil



**W-MRK-032**

**Date:**  
September 14, 2023

**Description:**  
PEM  
Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**W-MRK-032**

**Date:**  
September 14, 2023

**Description:**  
PEM  
Facing West



**W-MRK-032**

**Date:**  
September 14, 2023

**Description:**  
PEM  
Facing Soil



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-033</b>
<b>Date:</b> September 14, 2023
<b>Description:</b>  PEM  Facing East



<b>W-MRK-033</b>
<b>Date:</b> September 14, 2023
<b>Description:</b>  PEM  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>W-MRK-037</b>
<b>Date:</b> October 18, 2023
<b>Description:</b>  PFO  Facing South



<b>W-MRK-037</b>
<b>Date:</b> October 18, 2023
<b>Description:</b>  PFO  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-MRK-038</b>
<b>Date:</b> December 06, 2023
<b>Description:</b> PFO Facing North



<b>W-MRK-038</b>
<b>Date:</b> December 06, 2023
<b>Description:</b> PFO Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**W-MRK-038**

**Date:**  
December 06, 2023

**Description:**  
PFO  
Facing Soil



**W-AGS-001**

**Date:**  
January 28, 2025

**Description:**  
PEM  
Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>W-AGS-001</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> PEM Facing West



<b>W-AGS-001</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> PEM Facing Soil





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 44

Stream & Location: UNT to Duncan Run

RM: \_\_\_ Date: 6-15-23

AEP Vassell-Green Chapel

Scorers Full Name & Affiliation: MRK, AJH/AECOM

River Code: - STORET #: Lat./ Long.: 40.152913, -82.748472 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

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. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH > RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. 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: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8.

6] GRADIENT ( 15.2 ft/mi) DRAINAGE AREA ( 1.34 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: 100 %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10.



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

**47**

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) **0.18**

LENGTH OF STREAM REACH (ft) **250** LAT. **40.12305** LONG. **-82.76132** RIVER CODE **NA** RIVER MILE **NA**

DATE **06/21/23** SCORER **MRK, RBL** COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**Channelized within an agricultural field**

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<b>0</b>	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<b>65</b>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<b>0</b>	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<b>0</b>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<b>0</b>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<b>0</b>
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<b>0</b>	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<b>0</b>
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<b>10</b>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<b>0</b>
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<b>25</b>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<b>0</b>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** (A) Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9** **TOTAL NUMBER OF SUBSTRATE TYPES: 3**

---

**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 3.00**

---

**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS \_\_\_\_\_ **AVERAGE BANKFULL WIDTH (Feet): 7.00**

**HHEI Metric Points**

Substrate Max = 40

**12**

A + B

---

Pool Depth Max = 30

**15**

---

Bankfull Width Max=30

**20**

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> (Per Bank) Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> (Most Predominant per Bank) Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input checked="" type="checkbox"/> Residential, Park, New Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Conservation Tillage
		<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
		<input type="checkbox"/>	<input type="checkbox"/> Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS **Bordered by agricultural fields to the north and south**

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 42

Stream & Location: UNT to Big Walnut Creek

RM: \_\_\_ Date: 6-22-23

AEP Vassell-Green Chapel

Scorers Full Name & Affiliation: MRK, RBL, AECOM

River Code: - STORET #: Lat./ Long.: 40.202097, -82.823271

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment table with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc. and a score of 8.

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

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment table with categories: UNDERCAT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score of 6.

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

Channel Morphology assessment table with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE and a score of 13.

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

Bank Erosion and Riparian Zone assessment table with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes checkboxes for NONE, MODERATE, HEAVY, etc. and a score of 3.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Recreation Potential Primary Contact Secondary Contact

Pool/Glide and Riffle/Run Quality assessment table with checkboxes for depth, width, and velocity. Includes a score of 2.

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/Run Quality assessment table with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score of 2.

6] GRADIENT ( 12.3 ft/mi) DRAINAGE AREA ( 1.57 mi^2)

%POOL: %GLIDE: %RUN: 90 %RIFFLE: 10 Gradient Maximum 10



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 47.5

Stream & Location: UNT to Big Walnut Creek

RM: \_\_\_ Date: 6-22-23

AEP Vassell-Green Chapel

Scorers Full Name & Affiliation: MRK, RBL, AECOM

River Code: - STORET #: Lat./ Long.: 40.189335, -82.796647

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment table with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

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

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment table with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

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

Channel Morphology assessment table with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE.

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

Bank Erosion and Riparian Zone assessment table with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Recreation Potential Primary Contact Secondary Contact

Pool / Glide and Riffle / Run Quality assessment table with checkboxes for depth, width, and velocity. Includes a recreation potential box.

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 / Run Quality assessment table with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS.

6] GRADIENT ( 25.2 ft/mi) DRAINAGE AREA ( 1.08 mi^2)

%POOL: %GLIDE: %RUN: 90 %RIFFLE: 10 Gradient Maximum 10



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

56

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) **0.65**

LENGTH OF STREAM REACH (ft) **250** LAT. **40.17352** LONG. **-82.77655** RIVER CODE **NA** RIVER MILE **NA**

DATE **06/22/23** SCORER **MRK, RBL** COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**Channelized swale**

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="text" value="90"/>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9**      **TOTAL NUMBER OF SUBSTRATE TYPES: 2**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 3.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS \_\_\_\_\_ **AVERAGE BANKFULL WIDTH (Feet): 16.00**

HHEI Metric Points

Substrate Max = 40

11

A + B

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Pool Depth Max = 30

15

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Bankfull Width Max=30

30

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Narrow <5m		Residential, Park, New Field	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture	
		Open Pasture, Row Crop	
		Mining or Construction	

COMMENTS **Agricultural runoff**

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)     Flat to Moderate     Moderate (2 ft/100 ft)     Moderate to Severe     Severe (10 ft/100 ft)



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

49

Stream & Location: Duncan Run, Licking Co., OH

RM: \_ \_ \_ Date: 6-27-23

Scorers Full Name & Affiliation: MRK, TW/AECOM

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: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1]. NUMBER OF BEST TYPES: 4 or more [2] sludge from point-sources, 3 or less [0]. Comments. Substrate Maximum 20. Score: 8.

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. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], POOLS > 70cm [2], OXBOWS, BACKWATERS [1], OVERHANGING VEGETATION [1], ROOTWADS [1], AQUATIC MACROPHYTES [1], SHALLOWS (IN SLOW WATER) [1], BOULDERS [1], LOGS OR WOODY DEBRIS [1], ROOTMATS [1]. Comments. Cover Maximum 20. Score: 9.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1]. Comments. Channel Maximum 20. Score: 14.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0]. Comments. Riparian Maximum 10. Score: 2.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Comments. Pool / Current Maximum 12. Score: 4.

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: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Comments. Riffle / Run Maximum 8. Score: 2.

6] GRADIENT (ft/mi) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. DRAINAGE AREA (44 mi²). %POOL: 10, %GLIDE: 0, %RUN: 70, %RIFFLE: 20. Comments. Gradient Maximum 10. Score: 6.



# Headwater Habitat Evaluation Index Field Form

## HHEI Score (sum of metrics 1+2+3)

**60**

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.64**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.22405** LONG. **-82.85362** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/11/23** SCORER **MRK, KRS** COMMENTS **Perennial stream in forested area.**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> <input type="checkbox"/> 10
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 0
<input checked="" type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> <input type="checkbox"/> 60	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> <input type="checkbox"/> 0
<input type="checkbox"/> <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> <input type="checkbox"/> 20	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> <input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> <input type="checkbox"/> 10	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **60** (A) Substrate Percentage Check **100** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **21** TOTAL NUMBER OF SUBSTRATE TYPES: **4**

**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (Inches): **1.00**

**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input checked="" type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 14'w x 4'd** AVERAGE BANKFULL WIDTH (Feet): **14.00**

**HHEI Metric Points**

Substrate Max = 40

**25**

A + B

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Pool Depth Max = 30

**5**

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Bankfull Width Max=30

**30**

This information must also be completed

### RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

#### RIPARIAN WIDTH

#### FLOODPLAIN QUALITY

L	R	(Per Bank)	L	R	(Most Predominant per Bank)	L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS \_\_\_\_\_

#### FLOW REGIME (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input checked="" type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

#### SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input type="checkbox"/>	0.5	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>3

#### STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

## HHEI Score (sum of metrics 1+2+3)

**24**

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.05**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.22522** LONG. **-82.85353** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/11/23** SCORER **MRK, KRS** COMMENTS **Ephemeral stream within forested area.**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> <input type="checkbox"/> 20
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 20
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> <input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> <input type="checkbox"/> 10	<input checked="" type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> <input type="checkbox"/> 30
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> <input type="checkbox"/> 10	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> <input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> <input type="checkbox"/> 10	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> <input type="checkbox"/> 0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **10** (A) Substrate Percentage Check **100** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3** TOTAL NUMBER OF SUBSTRATE TYPES: **6**

**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (Inches): **0.00**

**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 3.5'w x 1.5'd** AVERAGE BANKFULL WIDTH (Feet): **3.50**

**HHEI Metric Points**

Substrate Max = 40

**9**

A + B

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Pool Depth Max = 30

**0**

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Bankfull Width Max=30

**15**

This information must also be completed

### RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m		Conservation Tillage	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial	<input type="checkbox"/>
None		Open Pasture, Row Crop	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction	<input type="checkbox"/>

COMMENTS \_\_\_\_\_

### FLOW REGIME (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

### SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/>	None	<input checked="" type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input type="checkbox"/>	0.5	<input type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>3

### STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

42

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.32**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.22605** LONG. **-82.85353** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/11/23** SCORER **MRK, KRS** COMMENTS **Perennial stream within forested area.**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0	<input checked="" type="checkbox"/> SILT [3 pt]	25
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	15
<input type="checkbox"/> BEDROCK [16 pt]	0	<input type="checkbox"/> FINE DETRITUS [3 pts]	0
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	15	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	30	<input type="checkbox"/> MUCK [0 pts]	0
<input type="checkbox"/> SAND (<2 mm) [6 pts]	15	<input type="checkbox"/> ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **15** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12**      **TOTAL NUMBER OF SUBSTRATE TYPES: 5**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 3.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 9'w x 3.25'd** **AVERAGE BANKFULL WIDTH (Feet): 9.00**

HHEI Metric Points

Substrate Max = 40

17

A + B

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Pool Depth Max = 30

5

---

Bankfull Width Max=30

20

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY**      ✧NOTE: River Left (L) and Right (R) as looking downstream ✧

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Conservation Tillage	
		Urban or Industrial	
		Open Pasture, Row Crop	
		Mining or Construction	

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input checked="" type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)     Flat to Moderate     Moderate (2 ft/100 ft)     Moderate to Severe     Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

28

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.41**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.21734** LONG. **-82.84854** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/11/23** SCORER **MRK, KRS** COMMENTS **Intermittent Stream**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="25"/>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="5"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="30"/>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10"/>
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **15** (A) Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6** **TOTAL NUMBER OF SUBSTRATE TYPES: 7**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 0.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 3.5'w x 1.5'd** **AVERAGE BANKFULL WIDTH (Feet): 3.50**

HHEI Metric Points

Substrate Max = 40

13

A + B

---

Pool Depth Max = 30

0

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Bankfull Width Max=30

15

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>
Narrow <5m		Fenced Pasture	<input type="checkbox"/>
None			<input type="checkbox"/>

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/>	Stream Flowing	<input checked="" type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input checked="" type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input type="checkbox"/>	0.5	<input type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

41

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.41**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.21680** LONG. **-82.84787** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/11/23** SCORER **MRK, KRS** COMMENTS **Intermittent Stream**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**Drains through wetland W-MRK-024.**

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="20"/>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="10"/>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input checked="" type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="40"/>	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **50** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15**      **TOTAL NUMBER OF SUBSTRATE TYPES: 6**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 1.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 7'w x 3'd** **AVERAGE BANKFULL WIDTH (Feet): 7.00**

HHEI Metric Points

Substrate Max = 40

21

A + B

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Pool Depth Max = 30

0

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Bankfull Width Max=30

20

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m			<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>
None			<input type="checkbox"/>

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input checked="" type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)     Flat to Moderate     Moderate (2 ft/100 ft)     Moderate to Severe     Severe (10 ft/100 ft)



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 54.00

Stream & Location: S-MRK-026 / AEP Vassell-Green Chapel RM: 3.0 Date: 9 / 12 / 23

UNT to Big Walnut Creek (Hoover Reservoir) Scorers Full Name & Affiliation: Matt Kline AECOM

River Code: - STORET #: Lat./ Long.: 40.21255, -82.84012 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. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, HARDPAN, DETRITUS, MUCK, SILT, ARTIFICIAL, LIMESTONE, TILLS, WETLANDS, SANDSTONE, RIP/RAP, LACUSTURINE, SHALE, COAL FINES, HEAVY, MODERATE, NORMAL, EXTENSIVE, NONE.

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. AMOUNT. Includes checkboxes for UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS, EXTENSIVE >75%, MODERATE 25-75%, SPARSE 5-<25%, NEARLY ABSENT <5%.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE, EXCELLENT, GOOD, FAIR, POOR, NONE, RECOVERED, RECOVERING, RECENT OR NO RECOVERY, HIGH, MODERATE, LOW.

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. Includes checkboxes for NONE/LITTLE, MODERATE, HEAVY/SEVERE, WIDE > 50m, MODERATE 10-50m, NARROW 5-10m, VERY NARROW < 5m, NONE, FOREST, SWAMP, SHRUB OR OLD FIELD, RESIDENTIAL, PARK, NEW FIELD, FENCED PASTURE, OPEN PASTURE, ROWCROP, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes checkboxes for > 1m, 0.7-<1m, 0.4-<0.7m, 0.2-<0.4m, < 0.2m, POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH, TORRENTIAL, VERY FAST, FAST, MODERATE, INTERSTITIAL, INTERMITTENT, EDDIES, SLOW. Recreation Potential Primary Contact, Secondary Contact.

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. Includes checkboxes for BEST AREAS > 10cm, 5-10cm, < 5cm, MAXIMUM > 50cm, < 50cm, STABLE, MOD. STABLE, UNSTABLE, NONE, LOW, MODERATE, EXTENSIVE.

6] GRADIENT ( 18.60 ft/mi) DRAINAGE AREA ( 1.29 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: 25.00, %GLIDE: 0.00, %RUN: 0.00, %RIFFLE: 75.00. Gradient Maximum 10.



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

28

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>)

LENGTH OF STREAM REACH (ft) **200** LAT. **40.21230** LONG. **-82.83951** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/12/23** SCORER **MRK, KRS** COMMENTS **Eph stream flows into S-MRK-026**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	0	<input type="checkbox"/> <input checked="" type="checkbox"/> SILT [3 pt]	30
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	0	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	0
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	0	<input checked="" type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	40
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	10	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	0
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	10	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3**      **TOTAL NUMBER OF SUBSTRATE TYPES: 5**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS       **MAXIMUM POOL DEPTH (Inches): 0.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BF = 5'w x 1.5'd**      **AVERAGE BANKFULL WIDTH (Feet): 5.00**

HHEI Metric Points

Substrate Max = 40

8

A + B

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Pool Depth Max = 30

0

---

Bankfull Width Max=30

20

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m		Conservation Tillage	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial	<input type="checkbox"/>
None		Open Pasture, Row Crop	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction	<input type="checkbox"/>

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input type="checkbox"/>	0.5	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)     Flat to Moderate     Moderate (2 ft/100 ft)     Moderate to Severe     Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

## HHEI Score (sum of metrics 1+2+3)



SITE NAME/LOCATION \_\_\_\_\_  
 \_\_\_\_\_ SITE NUMBER \_\_\_\_\_ RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) \_\_\_\_\_  
 LENGTH OF STREAM REACH (ft) \_\_\_\_\_ LAT. \_\_\_\_\_ LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
 DATE \_\_\_\_\_ SCORER \_\_\_\_\_ COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions**

### STREAM CHANNEL MODIFICATIONS:

NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.**

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	_____
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	_____	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	_____
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	_____

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock \_\_\_\_\_

(A)

Substrate Percentage Check

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

### HHEI Metric Points

Substrate Max = 40

A + B

**2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):**

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (Inches):

Pool Depth Max = 30

**3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):**

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS \_\_\_\_\_ AVERAGE BANKFULL WIDTH (Feet):

Bankfull Width Max=30

### This information must also be completed

#### RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

##### RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS \_\_\_\_\_

##### FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

#### FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

#### SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

#### STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

56

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.86**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.19606** LONG. **-82.81613** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/12/23** SCORER **MRK, KRS** COMMENTS **Intermittent Stream**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="text" value="10"/>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="10"/>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input checked="" type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="50"/>	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0"/>
<input type="checkbox"/> <input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="20"/>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10"/>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **50** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21**      **TOTAL NUMBER OF SUBSTRATE TYPES: 5**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts] <input type="checkbox"/> > 22.5 - 30 cm [30 pts] <input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts] <input checked="" type="checkbox"/> < 5 cm [5 pts] <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]
--	--

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 2.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts] <input checked="" type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] <input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
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COMMENTS **BF = 13'w x 4'd** **AVERAGE BANKFULL WIDTH (Feet): 13.00**

HHEI Metric Points

Substrate Max = 40

26

A + B

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Pool Depth Max = 30

5

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Bankfull Width Max=30

25

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L R	(Per Bank)	L R	(Most Predominant per Bank)
<input type="checkbox"/> <input type="checkbox"/>	Wide >10m	<input type="checkbox"/> <input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/> <input type="checkbox"/>	Narrow <5m	<input type="checkbox"/> <input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/> <input type="checkbox"/>	None	<input type="checkbox"/> <input type="checkbox"/>	Fenced Pasture
<input type="checkbox"/> <input type="checkbox"/>		<input type="checkbox"/> <input type="checkbox"/>	Conservation Tillage
		<input type="checkbox"/> <input type="checkbox"/>	Urban or Industrial
		<input type="checkbox"/> <input type="checkbox"/>	Open Pasture, Row Crop
		<input type="checkbox"/> <input type="checkbox"/>	Mining or Construction

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/> Stream Flowing <input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent) <input type="checkbox"/> Dry channel, no water (Ephemeral)
--	---

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None <input type="checkbox"/> 0.5	<input type="checkbox"/> 1.0 <input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.0 <input type="checkbox"/> 2.5	<input type="checkbox"/> 3.0 <input type="checkbox"/> >3
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**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)     Flat to Moderate     Moderate (2 ft/100 ft)     Moderate to Severe     Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

52

SITE NAME/LOCATION **Vassell-Green Chapel**

SITE NUMBER **NA** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>) **0.18**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.12302** LONG. **-82.76198** RIVER CODE **NA** RIVER MILE **NA**

DATE **09/14/23** SCORER **MRK, KRS** COMMENTS **Intermittent Stream.**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

*Stream begins a road culvert where agricultural swale, wetland, and drain pipe converge at culvert outlet.*

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 15
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 15	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0
<input checked="" type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 35	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 10	<input type="checkbox"/> <input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 25

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **15** (A)      Substrate Percentage Check **100** (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12**      **TOTAL NUMBER OF SUBSTRATE TYPES: 5**

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**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts] <input type="checkbox"/> > 22.5 - 30 cm [30 pts] <input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts] <input type="checkbox"/> < 5 cm [5 pts] <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]
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COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (Inches): 3.00**

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**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts] <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] <input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
---	---

COMMENTS **BF = 7'w x 5'd** **AVERAGE BANKFULL WIDTH (Feet): 7.00**

HHEI Metric Points

Substrate Max = 40

17

A + B

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Pool Depth Max = 30

15

---

Bankfull Width Max=30

20

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

<u>RIPARIAN WIDTH</u>		<u>FLOODPLAIN QUALITY</u>	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/> Stream Flowing <input checked="" type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent) <input type="checkbox"/> Dry channel, no water (Ephemeral)
---	--

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input checked="" type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
---	--	---	---	--



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

22

SITE NAME/LOCATION **AEP Vassell-Green Chapel**

SITE NUMBER **S-MRK-032** RIVER BASIN **050600011308** DRAINAGE AREA (mi<sup>2</sup>) **0.86**

LENGTH OF STREAM REACH (ft) **82** LAT. **40.19669** LONG. **-82.81747** RIVER CODE **NA** RIVER MILE **NA**

DATE **12/05/23** SCORER **MRK, KRS** COMMENTS \_\_\_\_\_

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	<input type="text" value="30"/>
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="20"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="30"/>
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="20"/>	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **20** (A) Substrate Percentage Check **100** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3** TOTAL NUMBER OF SUBSTRATE TYPES: **4**

**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (Inches): **0.00**

**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS \_\_\_\_\_ AVERAGE BANKFULL WIDTH (Feet): **3.50**

**HHEI Metric Points**

Substrate Max = 40

7

A + B

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Pool Depth Max = 30

0

---

Bankfull Width Max=30

15

This information must also be completed

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	<input checked="" type="checkbox"/>
Narrow <5m		Residential, Park, New Field	<input type="checkbox"/>
None		Fenced Pasture	<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/100 ft)



# Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3)

54

SITE NAME/LOCATION **Vassell-Green Chapel**  
 SITE NUMBER **S-MRK-033** RIVER BASIN **Scioto** DRAINAGE AREA (mi<sup>2</sup>)  
 LENGTH OF STREAM REACH (ft) **200** LAT. **40.19761** LONG. **-82.81884** RIVER CODE **NA** RIVER MILE **NA**  
 DATE **01/31/24** SCORER **MRK, KAY** COMMENTS **Intermittent Stream**

**NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions**

**STREAM CHANNEL MODIFICATIONS:**  NONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECOVERY

**1. SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.)

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="45"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="35"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="10"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **35** (A) Substrate Percentage Check **100** (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** TOTAL NUMBER OF SUBSTRATE TYPES: **4**

**2. Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS \_\_\_\_\_ MAXIMUM POOL DEPTH (Inches): **2.00**

**3. BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS \_\_\_\_\_ AVERAGE BANKFULL WIDTH (Feet): **6.00**

**HHEI Metric Points**

Substrate Max = 40

**19**

A + B

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Pool Depth Max = 30

**15**

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Bankfull Width Max=30

**20**

This information must also be completed

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m		Conservation Tillage	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial	<input type="checkbox"/>
None		Open Pasture, Row Crop	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction	<input type="checkbox"/>

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input checked="" type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
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Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 27.00

Stream & Location: S-AGS-001-PER / Delaware County, Ohio UNT to Big Walnut Creek

RM: 4.2 Date: 7 / 15 / 24

Scorers Full Name & Affiliation: Austin Sige, AECOM

River Code: - STORET #: - Lat./ Long.: 40.211646, -82.825281 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

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

AMOUNT Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

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

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE.

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

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes checkboxes for > 1m, 0.7-1m, 0.4-0.7m, 0.2-0.4m, < 0.2m.

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 / Run Quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes for BEST AREAS > 10cm, 5-10cm, < 5cm.

6] GRADIENT (15.60 ft/mi) DRAINAGE AREA (1.04 mi^2) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6] %POOL: 20.00 %GLIDE: 0.00 %RUN: 80.00 %RIFFLE: 0.00

<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-MRK-005</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Perennial Stream Facing Upstream



<b>S-MRK-005</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Perennial Stream Facing Downstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-010</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Perennial Stream Facing Downstream



<b>S-MRK-010</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Perennial Stream Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-MRK-011</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Perennial Stream Facing Substrate



<b>S-MRK-012</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Perennial Stream Facing Upstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-MRK-013</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Perennial Stream Facing Upstream



<b>S-MRK-013</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Perennial Stream Facing Downstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-MRK-018</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Perennial Stream Facing Downstream



<b>S-MRK-018</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Perennial Stream Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-020</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Perennial Stream Facing Substrate



<b>S-MRK-021</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Ephemeral Stream Facing Upstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**S-MRK-022**

**Date:**  
September 11, 2023

**Description:**  
Perennial Stream  
Facing Upstream



**S-MRK-022**

**Date:**  
September 11, 2023

**Description:**  
Perennial Stream  
Facing Downstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-024</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Intermittent Stream Facing Downstream



<b>S-MRK-024</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Intermittent Stream Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-025</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Intermittent Stream Facing Substrate



<b>S-MRK-026</b>
<b>Date:</b> September 12, 2023
<b>Description:</b> Intermittent Stream Facing Upstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-027</b>
<b>Date:</b> September 12, 2023
<b>Description:</b> Ephemeral Stream Facing Upstream



<b>S-MRK-027</b>
<b>Date:</b> September 12, 2023
<b>Description:</b> Ephemeral Stream Facing Downstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**S-MRK-028**

**Date:**  
September 12, 2023

**Description:**  
Intermittent Stream  
Facing Downstream



**S-MRK-028**

**Date:**  
September 12, 2023

**Description:**  
Intermittent Stream  
Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-029</b>
<b>Date:</b> September 12, 2023
<b>Description:</b> Intermittent Stream Facing Substrate



<b>S-MRK-030</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> Intermittent Stream Facing Upstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>S-MRK-032</b>
<b>Date:</b> December 05, 2023
<b>Description:</b> Intermittent Stream Facing Upstream



<b>S-MRK-032</b>
<b>Date:</b> December 05, 2023
<b>Description:</b> Intermittent Stream Facing Downstream



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-MRK-033</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> Intermittent Stream Facing Downstream



<b>S-MRK-033</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> Intermittent Stream Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>S-AGS-001</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> Ephemeral Stream Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>Pond-MRK-001</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Pond Facing South



<b>Pond-MRK-002</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Pond Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-004</b>	
<b>Date:</b> June 15, 2023	
<b>Description:</b>  Upland Drainage Feature  Facing East	

<b>UDF-MRK-004</b>	
<b>Date:</b> June 15, 2023	
<b>Description:</b>  Upland Drainage Feature  Facing West	

<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-005</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Upland Drainage Feature Facing West



<b>UDF-MRK-005</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Upland Drainage Feature Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-006</b>
<b>Date:</b> June 15, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Substrate



<b>UDF-MRK-007</b>
<b>Date:</b> June 15, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Northwest



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-012</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Upland Drainage Feature  Facing East



<b>UDF-MRK-012</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Upland Drainage Feature  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-013</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing South



<b>UDF-MRK-013</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-014</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Substrate



<b>UDF-MRK-015</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-016</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing East



<b>UDF-MRK-016</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-017</b>
<b>Date:</b> June 22, 2023
<b>Description:</b>  Upland Drainage Feature  Facing South



<b>UDF-MRK-017</b>
<b>Date:</b> December 01, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Substrate



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-MRK-031</b>
<b>Date:</b> December 01, 2023
<b>Description:</b>  Upland Drainage Feature  Facing Substrate



<b>UDF-MRK-032</b>
<b>Date:</b> December 01, 2023
<b>Description:</b>  Upland Drainage Feature  Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>UDF-AGS-001</b>
<b>Date:</b> January 28, 2025
<b>Description:</b>  Upland Drainage Feature  Facing West



<b>UDF-AGS-001</b>
<b>Date:</b> January 28, 2025
<b>Description:</b>  Upland Drainage Feature  Facing East



**APPENDIX E**

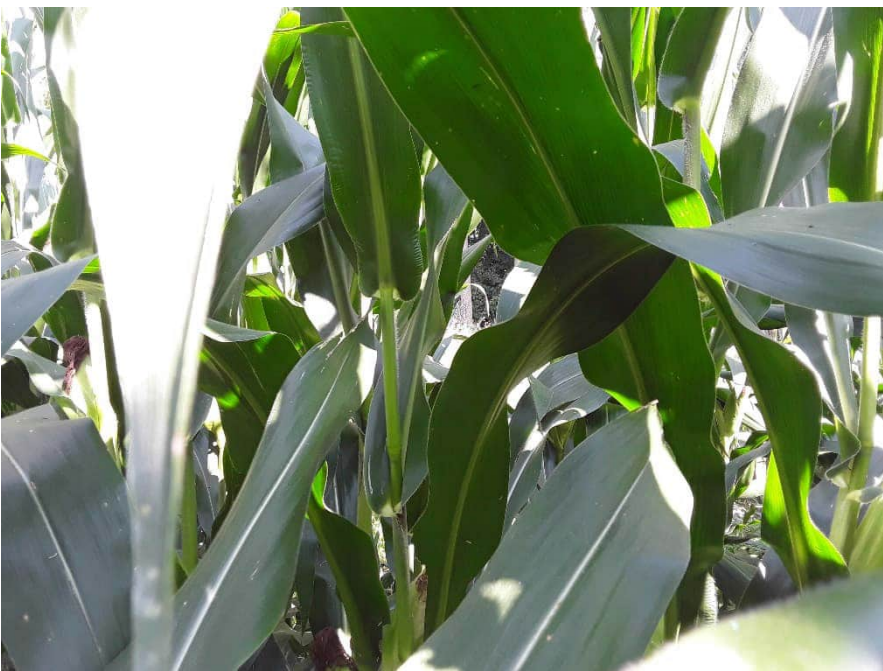
**Habitat Photographic Record**

<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-3</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Hayfield Facing East



<b>PH-4</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**PH-7**

**Date:**  
September 11, 2023

**Description:**  
Hayfield  
Facing East



**PH-8**

**Date:**  
September 12, 2023

**Description:**  
Wetland  
Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-11</b>
<b>Date:</b> September 12, 2023
<b>Description:</b>  Wetland  Facing East



<b>PH-12</b>
<b>Date:</b> September 12, 2023
<b>Description:</b>  Woodland-Deciduous  Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-15</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Agriculture Row-Crop Facing West



<b>PH-16</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-19</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>PH-20</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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**PH-23**

**Date:**  
September 12, 2023

**Description:**  
Agriculture  
Facing East



**PH-24**

**Date:**  
September 12, 2023

**Description:**  
Woodland - Deciduous  
Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-27</b>
<b>Date:</b> September 11, 2023
<b>Description:</b> Agriculture Facing South



<b>PH-28</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Pasture Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-31</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Woodlands/ Facing East



<b>PH-32</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Wetland Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-35</b>
<b>Date:</b> December 05, 2023
<b>Description:</b> Agriculture Facing East



<b>PH-36</b>
<b>Date:</b> October 18, 2023
<b>Description:</b> Agriculture Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-39</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>PH-40</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> Old Field Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-43</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> Agriculture Facing East



<b>PH-44</b>
<b>Date:</b> June 22, 2023
<b>Description:</b> Agriculture Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**PH-47**

**Date:**  
September 12, 2023

**Description:**  
Woodland – Deciduous  
Facing East



**PH-48**

**Date:**  
December 06, 2023

**Description:**  
Agriculture  
Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-51</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Agriculture Row-Crop Facing West



<b>PH-52</b>
<b>Date:</b> June 15, 2023
<b>Description:</b> Agriculture Row-Crop Facing East



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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**PH-55**

**Date:**  
June 27, 2023

**Description:**  
Agriculture Row-Crop  
Facing West



**PH-56**

**Date:**  
June 27, 2023

**Description:**  
Woodland – Deciduous  
Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-59</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Agriculture Row-Crop Facing South



<b>PH-60</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Woodlands and Agriculture Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-63</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> Pasture and Woodland Facing East



<b>PH-64</b>
<b>Date:</b> June 27, 2023
<b>Description:</b> Wetland Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-67</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> Pasture/Hay Field Facing South



<b>PH-68</b>
<b>Date:</b> September 13, 2023
<b>Description:</b> Pasture/Hay Field Facing South



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-71</b>
<b>Date:</b> September 14, 2023
<b>Description:</b> Agriculture Facing North



<b>PH-72</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Agriculture Row-Crop Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.</b> 60702698
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<b>PH-75</b>
<b>Date:</b> June 21, 2023
<b>Description:</b> Agriculture Row-Crop Facing South



<b>PH-76</b>
<b>Date:</b> September 12, 2023
<b>Description:</b> Agriculture Row-Crop Facing North



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-99</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> Landscaped Facing East



<b>PH-100</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> Old Field Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-103</b>
<b>Date:</b> January 28, 2025
<b>Description:</b> Woodland Facing South



<b>PH-104</b>
<b>Date:</b> January 29, 2025
<b>Description:</b> Old Field Facing West



<b>Client Name:</b> AEP	<b>Site Location:</b> Vassell – Curleys 345 kV Transmission Line Project	<b>Project No.:</b> 60702698
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<b>PH-107</b>
<b>Date:</b> January 29, 2025
<b>Description:</b> Woodland Facing North



<b>PH-108</b>
<b>Date:</b> January 29, 2025
<b>Description:</b> Agriculture Row-Crop Facing West





# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

**Office of Real Estate**  
*Tara Paciorek, Chief*  
2045 Morse Road – Bldg. E-2  
Columbus, OH 43229  
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October 13, 2023

Anna Findish  
AECOM  
707 Grant Street  
Pittsburgh, Pennsylvania 15219

**Re:** 23-1067; Vassell - Green Chapel South Enhancement

**Project:** The proposed project involves the implementation of improvements between the existing Vassell Station and a proposed station (approximately 12.9 miles).

**Location:** The proposed project is located in Berkshire, Trenton, and Harlem townships, Delaware County, Plain Township, Franklin County, and Monroe and Jersey townships, Licking County, Ohio.

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

**Natural Heritage Database:** 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 portion of the project south of Duncan Plains Road is within the vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute

stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the [Ohio Mussel Survey Protocol](#). If there is no in-water work proposed, impacts to mussels are not likely.

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 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, this project is not likely to impact this species.

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

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

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew  
Environmental Services Administrator

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

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

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

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

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

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

**APPENDIX G**  
**2024 Joint Guidance**

acres) of project area, or four net nights per kilometer for linear projects. Presence/probable absence net surveys for Indiana bats shall incorporate six net nights per square 0.5 kilometer (123 acres) of project area, or two net nights per kilometer for linear projects. If a project area is eligible for a presence/probable absence survey for both Indiana bats and northern long-eared bats or tricolored bat, following the northern long-eared/tricolored bat level of effort will qualify as a presence/ probable absence survey for the three species. However, if a project area is eligible for a presence/absence survey for the three species, following the Indiana bat level of effort will not qualify the survey for a northern long-eared bat or tricolored bat presence/probable absence survey. Please note that the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2024) requires that a minimum of two (2) biologists (e.g., one permitted and one technician) must be on-site for every four (4) net-sets being operated. Exceptions to on-site minimum staffing levels may be allowed under extenuating circumstances, provided written justification is included in the proposed survey study plan and subsequently approved by the OHFO and ODNR-DOW.

Due to the reclassification of the northern long-eared bat to federally endangered on March 31, 2023, the northern long-eared bat 4(d) rule has been nullified. There is a new online tool in the USFWS's Information for Planning and Consultation (IPaC) website that allows project proponents to utilize the optional Northern Long-eared Bat Rangewide Determination Key (Dkey). **The Dkey cannot be used to replace consultation with ODNR-DOW.** Project proponents should coordinate directly with the ODNR-DOW for project technical assistance for all federally listed species, including the Indiana bat and northern long-eared bat. **OHFO discourages the use of the Dkey for Ohio projects.** Contacting OHFO directly ([ohio@fws.gov](mailto:ohio@fws.gov)) for technical assistance for both the northern long-eared bat and Indiana bat is the more efficient process.

The tricolored bat is listed as endangered by ODNR-DOW and has been officially proposed for federal listing as endangered. The USFWS is scheduled to publish a final rule on the tricolored bat's status by the end of September 2024. Therefore, in addition to coordinating with ODNR-DOW regarding the tricolored bat, we recommend that project proponents also coordinate with the OHFO. The USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2024) allows presence/absence surveys for the tricolored bat that use the northern long-eared bat level of effort.

**Exception for Ohio mist-net surveys:** All presence/absence surveys conducted for state listed bat species (Indiana, northern long-eared, little brown, tricolored) should follow the highest minimum net nights set forth in the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.

### **Ohio Acoustic Surveys:**

Acoustic bat surveys for presence/absence will be accepted by ODNR-DOW for the 2024 season. Surveys should follow guidelines laid out in the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2024) with the following exceptions:

- Ohio survey dates are June 1 – August 15
- After conducting automated analyses using one or more of the currently available 'approved' acoustic bat ID programs<sup>1</sup>, qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species (*M. sodalis*, *M. septentrionalis*<sup>2</sup>, *M. lucifugus*<sup>2</sup>, and *P. subflavus*<sup>2</sup>) must be completed.
- **All presence/absence acoustic surveys conducted for state listed bat species (Indiana, northern long-eared, little brown, tricolored) should follow the highest minimum acoustic nights set forth in the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.**

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<sup>1</sup> <https://www.fws.gov/media/indiana-bat-summer-survey-guidance>

<sup>2</sup> State listing as endangered effective July 1, 2020

above within 48 hours via email. If a little brown bat is captured, notify the ODNR-DOW Bat Survey Coordinator only within 48 hours via email. Reports of listed bat captures should include specific information such as spatial location of capture, band information, radio-transmitter frequency information, sex, reproductive status, and age of individual.

- For presence/absence surveys, ODNR-DOW requires all female and juvenile state endangered and threatened bat species (Indiana, northern long-eared, little brown, and tricolored bat) be radio-tracked if caught, in accordance with methods outlined in Appendix D of USFWS 2024 Range-wide Indiana Bat Summer Survey Guidelines.

If you are taking any biological samples (tissue, fur, blood, etc.), this must be specifically authorized in your state and federal permits and noted in your survey proposal.

### **After Field Season:**

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

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

**Step 1:** Coordinate with Ohio Division of Wildlife regarding existing records for state-listed endangered bat summer and/or winter occurrence information. Potential hibernacula found during a habitat assessment must address possible suitability for Indiana bats, northern long-eared bats, tricolored bats, and little brown bats.

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

- Both the DOW and USFWS should be contacted for guidance on projects occurring:
  - Within 5 miles of known or potential Indiana bat and/or northern long-eared bat hibernacula.
  - Within 3 miles of known or potential tricolored bat hibernacula
- Only ODNR-DOW should be contacted if a project occurs within 5 miles of known or potential little brown bat hibernacula.

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

- Conduct a desktop habitat assessment of the project area. Tools such as the [ODNR Mines of Ohio Viewer](#), [Karst Interactive Map](#), topographic maps, aerial photos, historical records, etc. should be used to determine if there are any potential caves, mines, karst features, rock ledges, or other features that may serve as potential hibernacula.
- If no such features are found, proceed to **Step 2**.
- If potential hibernacula are found during the desktop assessment:
  - Assume bats are using these hibernacula and refrain from clearing trees from March 15 - Nov 15

**OR**

- Conduct a field habitat assessment to determine if a potential hibernaculum(a) is present within the action area. We encourage impacts to ledges and rock outcroppings be avoided. If impacts cannot be avoided, features should be evaluated for potential roosting characteristics such as recesses, overhangs, and crevices.

## **FREQUENTLY ASKED QUESTIONS**

### **When does the ODNR-DOW Bat Survey protocol have to be used?**

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio.

### **How many detector nights are required for presence/probable absence acoustic surveys?**

As described in the current USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines:

Level of effort for all state-listed endangered bat species: follow highest minimum detector nights as outlined in the federal guidance for northern long-eared bat and tricolored bat.

#### Northern Long-eared Bat and Tricolored Bat Level of Effort:

Linear projects: a minimum of 4 detector nights per km (0.6 miles) of suitable summer habitat

Non-linear projects: a minimum of 10 detector nights per 123 acres (0.5 km<sup>2</sup>) of suitable summer habitat.

At least 2 detector locations per 123 acre "site" shall be sampled until at least 10 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 5 detectors for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 5 nights each (can sample the same location or move within the site)
- 1 detector for 10 nights (must sample at least 2 locations and move within the site – we recommend evenly distributing LOE among locations)

#### Indiana Bat Level of Effort:

Linear projects: a minimum of 2 detector nights per km (0.6 miles) of suitable summer habitat

Non-linear projects: a minimum of 6 detector nights per 123 acres (0.5 km<sup>2</sup>) of suitable summer habitat.

At least 2 detector locations per 123 acre "site" shall be sampled until at least 6 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 3 detectors for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 3 nights each (can sample the same location or move within the site)
- 1 detector for 6 nights (must sample at least 2 locations and move within the site – we recommend evenly distributing LOE among locations)

### **How many net surveys are required for presence/probable absence?**

Level of effort for all state-listed endangered bat species including Indiana bat and northern long-eared bats: Follow highest minimum net nights as outlined in the federal guidance for the northern long-eared bat and tricolored bat.

Net surveys for northern long-eared bat presence/probable absence shall incorporate, at a minimum, either 10 net nights per square 0.5 kilometer (123 acres) of project area, or four net nights per kilometer for linear projects. For linear projects, there must be at least one net night of survey on two different nights (minimum of two nights). This does not allow for two net nights on a single night for surveys.

Net surveys for Indiana bat presence/probable absence shall incorporate, at a minimum, either six net nights net nights per square 0.5 kilometer (123 acres) of project area, or two net nights per kilometer for linear projects. For