# Construction Notice Marysville-Cadence Solar 345 kV Transmission Line Project



PUCO Case No. 23-0099-EL-BNR

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

Submitted by: Ohio Power Company

#### **Construction Notice**

### Ohio Power Company Marysville-Cadence Solar 345 kV Transmission Line

#### 4906-6-05

Ohio Power Company (the "Company") provides the following information to the Ohio Power Siting Board ("OPSB") pursuant to 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 Notice.

The Company proposes to construct the Marysville-Cadence Solar 345 kV Transmission Line Project (the "Project") in Taylor Township, Union County, Ohio. The purpose of the Project is to provide a 345 kV interconnection between the Cadence Solar facility (OPSB Case Number 20-1677-EL-BGN), an Independent Power Producer (IPP), and the Company's Marysville Station. The Project will require two spans of 345 kV transmission line extending approximately 0.1 mile from the northwest portion of Marysville Station with one new pole located outside of the existing substation fence. The Project will be entirely on property owned by the Company. The IPP plans to construct an electric transmission line from their solar facility substation, located 1.2 miles to the northwest, to the interconnection point. The IPP submitted the proposed 345 kV transmission line to OPSB under separate cover (OPSB Case Number 23-557-EL-BLN), which was approved in August 2023. The location of the Project is shown on Figure 1 and Figure 2 in Appendix A.

The Project meets the requirements for a CN because it is within the types of projects defined by item (1) (d)(i) of Ohio Administrative Code Section 4906-1-01 Appendix A of the 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:

1

- (d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:
  - i. The line is completely on property owned by the specific customer or the applicant.

The Project has been assigned PUCO Case No. 23-0099-EL-BNR.

#### **B(2)** Statement of Need

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

As part of the AD2-093 IPP connection facility, the Company will install two 345 kV spans out of Marysville Substation towards the generating facility's station to act as the point of interconnection. The interconnection facility is a 175 MW (105 MW Capacity) solar generating facility in Union County, Ohio.

This PJM Network Upgrade Project (N7372) is related to the Company's obligation to connect the developer (AD2-093) per the PJM IPP Tariff. The Project is listed in the 2023 Company LTFR document (Form FE-T9, Planned Transmission Lines). Failure to move forward with the proposed Project will result in the Company's inability to serve the customer's generation request, thereby jeopardizing the customer's required in-service date per the FERC approved Interconnection Service Agreement (175 MW nameplate capability). The LTFR page is provided in 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 and proposed transmission lines is shown in Figure 1 of Appendix A.

#### **B(4)** Alternatives Considered

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

The Project is located entirely on Company property and is required in order to connect an IPP's electric transmission line to the Cadence Solar facility. Based on the IPP's approved solar farm, the IPP's approved transmission line, and other existing facilities in the area, the proposed location is the most suitable and least impactful route location for the Project. Other alternatives would require impacting additional neighboring properties, as opposed to remaining entirely on the Company's property, and would add additional transmission length to the Project without any additional benefit. The proposed Project is not anticipated to impact wetlands, streams, or any known cultural resource areas eligible for the National Register of Historic Places (NRHP). Additionally, no residences are located within 1,000 feet of the Project. Therefore, this alternative represents the most suitable location and is the most appropriate solution for meeting the Company and IPP's needs in the area.

#### **B(5) Public Information Program**

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 Project will be located entirely within Company-owned property, with no additional property owners or tenants affected. The Company maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project.

#### **B(6) Construction Schedule**

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

Construction of the Project is planned to begin in March 2024, and the anticipated in-service date is November 2024.

#### 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.

Figure 1 in Appendix A provides the proposed Project area on a map of 1:24,000-scale (1 inch equals 2,000 feet), showing the Project on the United States Geological Survey (USGS) 7.5-minute topographic map of the Peoria, Ohio quadrangle. Figure 2 in Appendix A show the Project Area on recent aerial photography, dated 2020, as provided by ESRI World Imagery at a scale of 1:6,000 scale (1 inch equals 500 feet).

To visit the Project site from Columbus, Ohio, take I-70 West to Exit 93 and head north on I-270. After 9 miles at Exit 17B, take the ramp for U.S. 33/OH-161 West toward Marysville. Take U.S. 33 17 miles to Exit 92 onto OH-31 North toward Kenton/Marion. Go 4.6 miles and turn left onto Wheeler Green Road/County Highway 205. After 2 miles, turn right onto Reed Road/County Highway 198. The entrance to Marysville Station is on the left after 1.1 miles. The Project is near the northwest corner of Marysville Station at the address 22955 Reed Rd, Marysville, OH 43067 (latitude 40.334428 and longitude -83.430022).

#### **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 Project is located on Parcel Number 3000060100000, which is owned by the Company. No property easements, options, or land use agreements are necessary to construct the Project.

#### **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.

Line Asset Name: Marysville-Cadence Solar 345 kV

Ownership: Ohio Power Company

Voltage: 345 kV

Conductors: 954.0 kcmil 54/7 Strands "CARDINAL"

795.0 kcmil 26/7 Strands "DRAKE"

Static Wire: (2) AFL OPGW DNO-9275 S1-36/101/646 0.646 With Up To 96 Fiber

Insulators: Polymer ROW Width: N/A

Structure Type: (2) Single Circuit, self-supporting steel monopole dead-end structures on

concrete pier foundations

#### B(9)(b) Electric and Magnetic Fields

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

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

#### **B(9)(c) Project Cost**

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

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately \$1,766,000 using a Class 4 estimate. However, the Project is reimbursable through the PJM process and the IPP is responsible for all costs associated with the interconnection.

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

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

B(10)(a) Land Use 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.

An aerial photograph of the Project vicinity is provided as Figure 2 in Appendix A. The Project is located in Taylor Township, Union County, Ohio. Land use in the Project area consists of the Marysville Station, existing electric transmission lines, and agricultural fields. No tree clearing is anticipated for the Project.

#### 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 Project extends from Marysville Station to a new transmission structure just outside the station fence and is entirely located on property owned by the Company. No agricultural land will be impacted by the Project. The Union County Auditor indicated that the Project parcel was not identified as Agricultural District Land on October 24, 2023.

#### 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 a Phase I Cultural Resource Management Investigation of the Marysville Station property, which included the Project area, in 2017. No further investigation was considered to be necessary by the consultant. The Ohio Historic Preservation Office ("SHPO") agreed that the Project will not impact any cultural resources eligible for listing on the NRHP and no additional coordination is necessary prior to construction. A copy of the November 22, 2017 concurrence letter from SHPO is provided in Appendix C.

#### 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.

Ground disturbance for the Project will be under one acre. The Company will have a soil and erosion plan for its portion of the Project in order to maintain best management practices to minimize erosion control sediment to protect surface water quality during storm events.

Per field reviews on September 29, 2020 (see Appendix D) and rechecked on January 24, 2023, no streams or wetlands are crossed by or within work areas of the Project. Therefore, the Project will not require a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers or a Section 401 Water Quality Certification from the OEPA.

The FEMA Flood Insurance Rate Map was reviewed to identify any floodplains/flood hazard areas that have been mapped within the Project area (specifically, map number **39159Co250D**). Based on this mapping, no mapped FEMA floodplains are located in the Project area. Therefore, no floodplain permit will be required for this Project.

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

As part of the ecological study completed for the Project, a coordination letter was submitted to the USFWS Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. The December 16, 2022, response letter from the USFWS (see Appendix C) indicated all projects in the State of Ohio lie within range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio, presence of these species is assumed wherever suitable habitat occurs unless a presence/probable absence survey has been performed to document probable absence. The USFWS response letter states that, should the Project site contain trees  $\geq 3$  inches diameter at breast height (dbh), the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, the USFWS recommends that removal of trees  $\geq 3$  inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer

#### Construction Notice for Marysville-Cadence Solar 345 kV Transmission Line Project

presence/probable absence surveys be conducted between June 1 and August 15. Based on current USFWS Ohio Field Office guidance, no hibernaculum or caves were located in the Project area. Also, no tree clearing is anticipated for the Project, therefore the northern long-eared and Indiana bats are not anticipated to be impacted. Additionally, the USFWS states that they do not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the Project type, size, and location.

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 on June 20, 2022 seeking an environmental review of the proposed Project for potential impacts on state-listed and federally-listed threatened or endangered species. Correspondence from ODNR's DOW/OHNP and the ODNR - Office of Real Estate was received on January 10, 2023 (see Appendix C).

The Project is within the range of the Indiana bat, a state and federally endangered species; northern longeared bat, a state endangered and federally threatened species; little brown bat, a state endangered species; and the tricolored bat, a state endangered species. No tree clearing is anticipated for the Project. Therefore, no additional coordination with ODNR is anticipated.

According to ODNR-DOW, the Project is within the range of seven endangered or threatened mussel species. Due to location and no in-water work, ODNR-DOW indicated that the Project is not likely to impact these species.

In addition, the ODNR lists the project in the range of the northern harrier a state endangered bird. The northern harrier nests in large marshes and grasslands and hunts over grasslands. The nesting period is between April 15 and July 31. No potential habitat for this species was observed in the Project area during the site reconnaissance, therefore no impacts to this species are anticipated.

#### B(10)(f) Areas of Ecological Concern

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

No unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, or other protected natural areas were identified within the Project area.

FEMA Flood Insurance Rate Maps were consulted to identify any floodplains/flood hazard areas that have been mapped in the Project Area (specifically, map number **39159Co250D**). Based on these maps, no mapped FEMA floodplains are located in the Project area.

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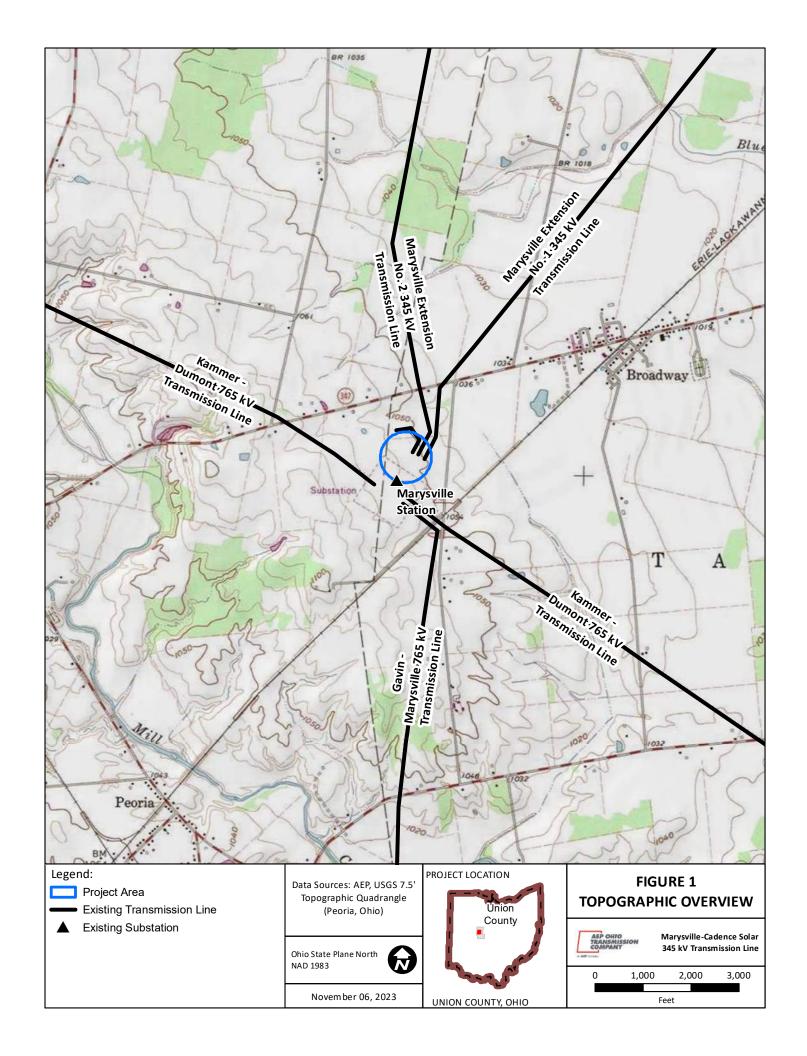
Wetland and stream delineation field surveys were completed within the Project area by the Company's consultant on September 29, 2020 (see Figure 2 in Appendix D) and rechecked on January 24, 2023. No streams or wetlands are crossed by or within work areas of the Project.

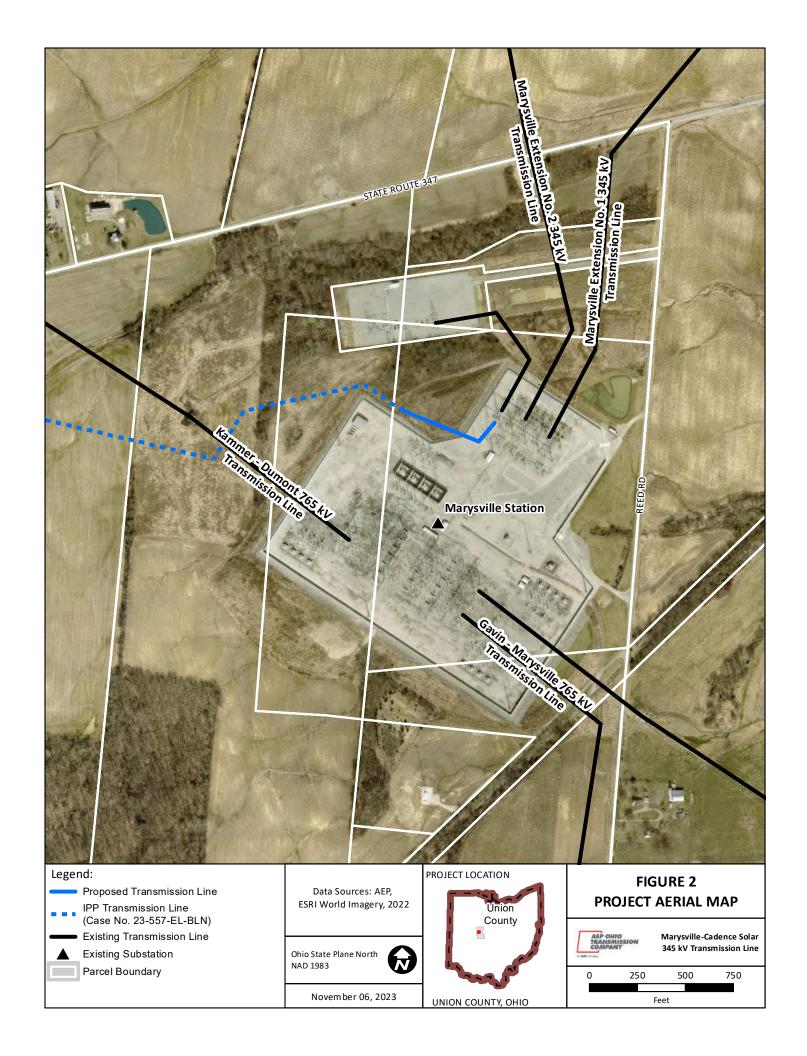
#### **B(10)(g) Unusual Conditions**

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**





Appendix B Long-term Forecast Report

1	LINE NAME AND NUMBER:	Marysville – Union County Solar (IPP) 345kV (AD2-092, AD2-093, & AD2-096 TP2020178)
		Marysville – Union County Solar (IPP)
2	POINTS OF ORIGIN AND TERMINATION	INTERMEDIATE STATIONS - N/A
	RIGHTS-OF-WAY: LENGTH / WIDTH /	
3	CIRCUITS	0.15 mi / 150 ft / 1 circuit
4	VOLTAGE: DESIGN / OPERATE	345 kV /345 kV
5	APPLICATION FOR CERTIFICATE:	2023
6	CONSTRUCTION:	2023
7	CAPITAL INVESTMENT:	\$1.43 mi (reimbursable)
8	PLANNED SUBSTATION:	N/A
9	SUPPORTING STRUCTURES:	Steel
10	PARTICIPATION WITH OTHER UTILITIES	N/A
11	PURPOSE OF THE PLANNED TRANSMISSION LINE	Connect and serve new generation customer
	CONSEQUENCES OF LINE	
	CONSTRUCTION DEFERMENT OR	Generation deliverability limitation
	TERMINATION	
13	MISCELLANEOUS:	

### **Appendix C Agency Coordination**



In reply refer to 2017-UNI-40321

November 22, 2017

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

RE: Marysville 765 kV Station Fence Project, Liberty and Taylor Townships, Union County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on October 27, 2017 regarding the proposed Marysville 765kV Station Fence Project in Liberty and Taylor Townships, Union 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). 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 (16 U.S.C.470 [36 CFR 800]).

The following comments pertain to the Phase I Archaeological Investigations for the American Electric Power 84.6 ha (209 ac) Marysville 765kV Station Fence Project in Liberty and Taylor Townships, Union County, Ohio by Weller & Associates, Inc. (2017).

A literature review, visual inspection, surface collection, shovel probe, and shovel test unit excavation was completed as part of the investigations. No previously inventoried Ohio Archaeological Inventory (OAI) site is located within the project area. Five (5) Ohio Archaeological Inventory (OAI) sites were identified as part of this survey. OAI#33UN0540 is a historic period artifact scatter identified during shovel test unit excavation. OAI#33UN0541, 33UN0543, and 33UN0544 are prehistoric isolated finds identified during surface collection. OAI#33UN0542 is a prehistoric period artifact scatter identified during surface collection. None of the sites are recommended as eligible for listing in the National Register of Historic Places (NRHP). Based on the information provided, we agree the archaeological sites are not eligible for listing in the NRHP and no further archaeological work is necessary.

Please complete your associated site inventory as soon as possible. Project associated inventory should be completed and submitted concurrent with submission of your survey documentation for our comments. Following IForm submission procedure, please send a notification to the survey manager (archsurvey@ohiohistory.org, or directly at beberhard@ohiohistory.org) so that the manager is aware your inventory is prepared, complete, and ready for review.

The following comments pertain to the History/Architecture Investigations for the American Electric Power 84.6 ha (209 ac) Marysville 765kV Station Fence Project in Liberty and Taylor Townships, Union County, Ohio by Weller & Associates, Inc. (2017).

The investigations consisted of a systematic survey of all properties fifty years of age of older that are situated within 1,000' of the proposed project site. A total of six individual properties of fifty years of age or older were identified within the APE.

RPR Serial No: 1071068, 1071069

Mr. Ryan J. Weller Page 2 November 22, 2017

It is Weller's recommendation that none of these properties are eligible for inclusion in the NRHP due to a lack of associative significance, a loss of integrity, or a lack of character defining features. Our office agrees with Weller's recommendations regarding eligibility.

The results of the architectural investigation identified no historic properties located within the APE that exhibit potential significance for inclusion in the NRHP. Therefore, we agree that the project as proposed will have no effect on historic properties.

Based on the information provided, we agree the project will not affect historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at <a href="mailto:khorrocks@ohiohistory.org">khorrocks@ohiohistory.org</a>. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)



## Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Fax: (614) 267-4764

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

January 10, 2023

Daniel Godec Stantec Consulting Services Inc. 11687 Lebanon Road Cincinnati, OH 45241

Re: 22-1237; Marysville-Union County Solar Generation Tie Line Project

**Project:** The proposed project involves facilitating the interconnection of the Cadence Solar generating facility and storage facility into AEP's existing Marysville 345 kV Station facility.

Location: The proposed project is located in Taylor and Liberty Townships, Union 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 entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

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

Federally Endangered

snuffbox (*Epioblasma triquetra*)

clubshell (*Pleurobema clava*)

Northern riffleshell (*Epioblasma torulosa rangiana*)

rayed bean (Villosa fabalis)

#### Federally Threatened

rabbitsfoot (Quadrula cylindrica cylindrica)

#### State Endangered

elephant-ear (Elliptio crassidens crassidens)

#### State Threatened

pondhorn (*Uniomerus tetralasmus*)

Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

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

Due to the potential 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 <u>local floodplain administrator</u> 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 <a href="mike.pettegrew@dnr.ohio.gov">mike.pettegrew@dnr.ohio.gov</a> if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator

### **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



December 16, 2022

Project Code: 2023-0021802

Reference: Marysville-Union County Solar Generation Tie Line project

Dear Mr./Ms,

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

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees  $\geq 3$  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.

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. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see https://ecos.fws.gov/ecp/species/9045), incidental take of Indiana bats is still prohibited without

a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

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

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

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

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

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

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

Sincerely,

Patrice Ashfield Field Office Supervisor

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

### **Appendix D Ecological Survey Reports**



Marysville Station Expansion Project, Union County, Ohio

**Ecological Resources Inventory Report** 

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

Prepared by: Stantec Consulting Services Inc. 11687 Lebanon Road Cincinnati, Ohio 45241

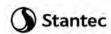
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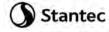
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Introduction September 29, 2020

#### 1.0 Introduction

AEP Ohio Transmission Company, Inc. (AEP) is proposing to expand the existing Marysville 765 kV substation (Marysville Station) and to possibly relocate and/or construct new associated transmission lines in Union County, Ohio (Figure 1, Appendix A). The Project Area includes the existing station pad and adjacent areas where substation expansion, fence installation, and/or transmission line relocation/construction work may occur. The Project Area was surveyed for wetlands, waterbodies, open water features, upland drainage features, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on August 29 and 30, 2017, September 6, 2017, and again on September 24, 2020. The approximate locations of features located up to 50 feet outside of the Project Area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project Area. These features are shown on the Figure 2 maps in Appendix A as "approximate" wetlands, streams (waterways), and upland drainage features.



Methods September 29, 2020

#### 2.0 Methods

#### 2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project Area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey mapping, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region - Version 2.0 (USACE 2010). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

#### 2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project Area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project Area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2012) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline of each waterway was identified and surveyed using a handheld sub-meter accuracy global positioning system (GPS) unit and mapped with geographic information system (GIS) software. Additionally, the locations of ponds/open water features and upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project Area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

#### 2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project Area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project Area, collected information on existing habitats within the Project Area, and assessed the potential for these habitats to be used by these species.



Results September 29, 2020

#### 3.0 Results

#### 3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project Area on August 29 and 30, 2017, September 6, 2017, and again on September 24, 2020 for wetlands, waterbodies, and threatened and endangered species or their habitats. Figure 2 (Appendix A) shows the wetlands and waterbodies identified by Stantec within the Project Area, as well as the locations of open waters and upland drainage features identified within the Project Area. Figure 3 (Appendix A) shows the locations of habitats and land uses identified within the Project Area, including the locations of any identified rare, threatened or endangered species habitats observed within the Project Area. Representative photographs of the wetlands, streams, upland drainage features, and other habitats identified within the Project Area are included in Appendix C of this report (photo locations are shown on Figures 2 and 3, Appendix A).

Table 1. Vegetation Communities and Land Cover Found within the Marysville Station Expansion Project Area, Union County, Ohio

Vegetation Communities and Land Cover Types within Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Agricultural Field	Extreme Disturbance/Ruderal Community (dominated by planted non-native row crop species, opportunistic invaders, and/or native highly tolerant taxa). Common plant species observed included soybeans (Glycine max).	No	89.68
Mixed Early Successional/Second Growth Deciduous Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species observed included red maple (Acer rubrum), sugar maple (Acer saccharum), wingstem (Verbesina alternifolia), American elm (Ulmus americana), Canada goldenrod (Solidago canadensis), giant ironweed (Vernonia gigantea), Amur honeysuckle (Lonicera maackii), and Japanese honeysuckle (Lonicera japonica).	No	2.87
Early Successional Deciduous Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species	No	4.21



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Vegetation Communities and Land Cover Types within Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
	and/or opportunistic invaders). Common plant species observed included Amur honeysuckle, multiflora rose (Rosa multiflora), Allegheny blackberry (Rubus allegheniensis), red maple, and eastern cottonwood (Populus deltoides).		
Mixed Early Successional/Second Growth Riparian Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species observed included American sycamore (Platanus occidentalis), boxelder (Acer negundo), green ash (Fraxinus pennsylvanica), wingstem, eastern poison ivy (Toxicodendron radicans), stinging nettle (Urtica dioica), jewelweed (Impatiens capensis), and riverbank grape (Vitis riparia).	No	15.03
Old Field	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders and/or native highly tolerant taxa). Common plant species observed included Canada goldenrod, crownvetch (Securigera varia), Canada thistle (Cirsium arvense), broomsedge bluestem (Andropogon virginicus), yellow foxtail (Setaria pumila), multiflora rose, Allegheny blackberry, Queen Anne's lace (Daucus carota), common milkweed (Asclepias syriaca), giant ironweed, annual ragweed (Ambrosia artemisiifolia), and red clover (Trifolium pratense).	No	28.82
New Field	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders and/or native highly tolerant taxa). Common plant species observed included tall fescue (Schedonorus arundinaceus), Japanese foxtail (Setaria faberi) and Kentucky bluegrass (Poa pratensis)	No	0.63
Manicured Lawn	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non- native species, and/or native highly tolerant taxa). Common plant species	No	3.71



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Vegetation Communities and Land Cover Types within Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
	observed included tall fescue perennial ryegrass (Lolium perenne), Kentucky bluegrass, narrowleaf plantain (Plantago lanceolata), common dandelion (Taraxacum officinale), white clover (Trifolium repens), and Bermudagrass (Cynodon dactylon).		
Gravel Road	Extreme Disturbance/existing gravel and/or paved road. Little to no vegetation was observed in these areas.	No	1.13
Railroad	Extreme Disturbance/existing railroad. Little to no vegetation was observed in these areas.	No	1.15
Industrial	Extreme Disturbance/Ruderal Community (free of vegetation and/or dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Common plant species observed included common dandelion, common plantain ( <i>Plantago major</i> ), giant ragweed ( <i>Ambrosia trifida</i> ), birdsfoot trefoil ( <i>Lotus corniculatus</i> ), common wormwood ( <i>Artemisia vulgaris</i> ), crabgrass ( <i>Digitaria</i> sp.), and suckling clover ( <i>Trifolium dubium</i> ).	No	48.07
Second Growth Deciduous Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species observed included white oak (Quercus alba), multiflora rose, common hackberry (Celtis occidentalis), red maple, American elm, sugar maple, northern red oak (Quercus rubra), Virginia creeper (Parthenocissus quinquefolia), and northern spicebush (Lindera benzoin).	No	13.89
Palustrine Emergent Wetland	Moderate Disturbance/Natural Community (dominated by native herbaceous species and/or opportunistic invaders). Common plant species observed included reed canarygrass (Phalaris arundinacea),	No	1.64



Results September 29, 2020

Vegetation Communities and Land Cover Types within Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
	jewelweed, giant goldenrod (Solidago gigantea), Canadian clearweed (Pilea pumila), cattail (Typha latifolia), and barnyardgrass (Echinochloa crusgalli).		
Palustrine Scrub-Shrub Wetland	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species observed included sandbar willow (Salix interior), eastern cottonwood, Indianhemp (Apocynum cannabinum), American horehound (Lycopus americana), and fox sedge (Carex vulpinoidea).	No	0.04
Palustrine Forested Wetland	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species observed included eastern cottonwood, black willow (Salix nigra), switchgrass (Panicum virgatum), swamp smartweed (Persicaria hydropiperoides), American water plantain (Alisma subcordatum), green ash, boxelder, jewelweed, reed canarygrass, white panicle aster (Symphyotrichum lanceolatum), American elm, bur oak (Quercus macrocarpa), pin oak (Quercus palustris), sweet woodreed (Cinna arundinacea), fowl mannagrass (Glyceria striata) and calamus (Acorus calamus).	No	1.34
Palustrine Unconsolidated Bottom Wetland	Moderate Disturbance/Natural Community (dominated by native herbaceous species and/or opportunistic invaders). Common plant species observed included pin oak, American elm, and green ash.	No	0.02
		TOTAL	212.23



Results September 29, 2020

#### 3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project Area on August 29 and 30, 2017, September 6, 2017, and again on September 24, 2020. Figure 2 (Appendix A) shows the wetlands identified by Stantec within the Project Area. Representative wetland photographs are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed wetland determination and ORAM data forms are included in Appendix D. Information regarding the Cowardin classification and ORAM categories of wetlands identified within the Project Area is provided in Table 2.

Table 2. Summary of Wetland Resources Found within the Marysville Station Expansion Project Area, Union County, Ohio

Wetland Name	Photo Location Number <sup>1</sup>	Isolated?	Wetland Classification <sup>2</sup>	ORAM Score <sup>7</sup>	ORAM Category <sup>7</sup>	Delineated Area (acres) within Project Area
Wetland 1	1, 2	No	PFO <sup>4</sup>	41.5	2	0.19
Wetland 2	3	No	PEM <sup>3</sup>	21	1	0.02
Wetland 3	4	No	PEM <sup>3</sup>	31	2	0.45
Wetland 4	5	No	PEM <sup>3</sup>	27.5	1	0.04
Wetland 5	6, 7, 8	No	PFO <sup>4</sup>	56	2	1.15
Wetland 6	9	No	PUB <sup>6</sup>	43.5	2	0.02
Wetland 7	10	Yes	PSS <sup>5</sup>	32.5	2	0.04
Wetland 8	11	No	PEM <sup>36</sup>	20	1	1.13
	•				TOTAL	3.04

<sup>&</sup>lt;sup>1</sup> Appendix C - Representative Photographs



<sup>&</sup>lt;sup>2</sup> Wetland classification is based on Cowardin et al. (1979).

<sup>&</sup>lt;sup>3</sup> PEM = Palustrine Emergent Wetland

<sup>&</sup>lt;sup>4</sup> PFO = Palustrine Forested Wetland

<sup>&</sup>lt;sup>5</sup> PSS = Palustrine Scrub-Shrub Wetland

<sup>&</sup>lt;sup>6</sup> PUB = Palustrine Unconsolidated Bottom Wetland

<sup>&</sup>lt;sup>7</sup> ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetlands v. 5.0 (Mack 2001).

Results September 29, 2020

#### 3.3 STREAMS

Stantec completed field surveys for waterbodies within the Project Area on August 29 and 30, 2017, September 6, 2017, and again on September 24, 2020. Figure 2 (Appendix A) shows the waterbodies (streams) identified by Stantec within the Project Area, as well as the locations of non-jurisdictional upland drainage features identified within the Project Area. Representative photographs of the streams and upland drainage features are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed HHEI data forms are included in Appendix D. Information regarding the streams identified within the Project Area is provided in Table 3. No open waters/ponds were identified within the Project Area.

Table 3. Summary of Stream Resources Found within the Marysville Station Expansion Project Area, Union County, Ohio

Stream Name	Photo Location Number <sup>1</sup>	Receiving Waters	Stream Flow Regime <sup>2</sup>	Stream Evaluation Method	Stream Evaluation Score	OHWM <sup>3</sup> Width (feet)	Delineated Length (feet) within Project Area
Stream 1	12	Blues	Intermittent	HHEI	34	3.6	2,212
Stream i	13	Creek	memmem	HHEI	30	3	2,212
Stream 2	14	Blues Creek	Ephemeral	HHEI	27	3	417
Stream 3	15	Mill Creek	Ephemeral	HHEI	24	3.4	27
Stream 4	16	Mill Creek	Intermittent	HHEI	50	4	296
						TOTAL	2,952

<sup>&</sup>lt;sup>1</sup>Appendix C - Representative Photographs as shown on Figure 2 (Appendix A)



<sup>&</sup>lt;sup>2</sup> Stream classification is based on Federal Register/Vol. 67, No. 10 (USACE 2002)

<sup>&</sup>lt;sup>3</sup> OHWM = Ordinary High Water Mark

Results September 29, 2020

### 3.4 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Ohio State-Listed Species within the Marysville Station Expansion Project Area, Union County, Ohio

Common Name	Scientific Name	State Listing <sup>1</sup>	Known to Occur Within Union County?2	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations	
	Birds								
American Bittern	Botaurus Ientiginosus	E	Yes	No	Nesting American bitterns are very secretive and prefer large undisturbed wetlands that have scattered small pools amongst the dense vegetation. They occasionally occupy bogs, large wet meadows, and dense, shrubby swamps (ODNR 2020b).	No	No potentially suitable nesting habitat for this species (large areas of undisturbed wetland) was observed within the Project Area. Therefore, no impacts are anticipated.	No comments received.	
Lark Sparrow	Chondestes grammacus	E	Yes	No	Breeding habitat includes various open situations with scattered bushes and trees, including shortgrass, mixed-grass, and tallgrass prairie with a shrub component and sparse litter; parkland; sandhills; barrens; old fields; cultivated fields; shrub thickets; shrub steppe (native and altered); woodland edges; shelterbelts; orchards, parks; riparian areas; brushy pastures; overgrazed pastures; and savanna. Ground nests may be located in areas of sparse ground cover such as those areas associated with burning, moderate to heavy grazing, or poor or eroded soils, or in idle fields, lawns, and cemeteries. Nonbreeding habitats include agricultural areas, suburban gardens, oak woodlands, chaparral, and mesquite/acacia grassland (NatureServe 2020).	Yes	Potentially suitable nesting habitat for this species (old field) was observed within portions of the Project Area. However, those habitats are not extensive within the Project Area or adjacent to it and it is anticipated that vegetation clearing will take place outside of the lark sparrow's nesting season. Therefore, no impacts are anticipated.	No comments received.	
Northern Harrier	Circus cyaneus	E	Yes	No	This bird hunts low over grassland and marshes and breeds in large marshes and grasslands (ODNR 2020b). Breeding Northern harriers are most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation (The Cornell Lab of Ornithology 2017).	No	No suitable nesting habitat (large areas of marshes and/or grasslands) was observed within the Project Area. Therefore, no impacts are anticipated.	If suitable habitat will be impacted, constructions should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.	
Loggerhead Shrike	Lanius Iudovicianus	E	Yes	No	The loggerhead shrike nests in hedgerows, thickets, and fencerows. They hunt over hayfields, pastures, and other grasslands (ODNR 2020b). Large areas of open country, such as grasslands, orchards, and open grassy woodlands, with scattered trees and shrubs are required to be suitable as loggerhead shrike nesting habitat. The average territory sizes in studies conducted in Missouri and New York was approximately 11 acres and 18.5 acres, respectively (Bull and Farrand 1977; NatureServe 2020; Yosef 1996).	Yes	Potentially suitable habitat for this species (old field) was observed within portions of the Project Area. However, those habitats are not extensive within the Project Area or adjacent to it. Therefore, no impacts are anticipated.	If thickets or other types of dense shrubbery habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.	
King Rail	Rallus elegans	E	No	No	Habitat includes freshwater marshes, upland-wetland marsh edges, ricefields or similar flooded farmlands, and shrub swamps (NatureServe 2020). Nests for this species are deep bowls constructed out of grass and usually very well hidden in marsh vegetation (ODNR 2020b). Large areas of palustrine emergent wetland and/or palustrine scrub-shrub wetland	No	No potentially suitable nesting habitat for this species (large areas of palustrine emergent wetland and/or palustrine scrub-shrub wetland habitats) was observed within the Project	If suitable habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the	



Results

September 29, 2020

Common Name	Scientific Name	State Listing <sup>1</sup>	Known to Occur Within Union County?2	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
					habitats (≥ ~20 acres) that include areas of open water are required to be suitable as king rail nesting habitat (Bull and Farrand 1977; McCormac and Kennedy 2004; NatureServe 2020; Pickens and Meanley 2015).		Area. Therefore, no impacts are anticipated.	project is not likely to impact this species.
Least Bittern	lxobrychus exilis	Т	Yes	No	Habitats vary throughout North America, but nesting usually occurs among dense, tall growths of emergent wetland vegetation, particularly cattails, sedges, bulrush, or common reed interspersed with some woody vegetation and open, fresh water (NatureServe 2020).	Yes	Potentially suitable nesting habitat for this species (Wetland 8) was observed within the Project Area. However, Wetland 8 is a low quality wetland with no woody vegetation, making it marginal habitat. Therefore, no impacts are anticipated.	No comments received.
Barn Owl	Tyto alba	T	Yes	No	Fields of dense grass. Open and partly open country such as grassland, marsh, lightly grazed pasture, and hayfields in a wide variety of situations, often around human habitation.  Nests in buildings (church steeples, attics, platforms in silos and barns, wooden water tanks, duckblinds), caves, crevices on cliffs, burrows, and hollow trees, rarely in trees with dense foliage (NatureServe 2020).	Yes	Potentially suitable habitat for this species (old field; deciduous forest; riparian forest) was observed within portions of the Project Area. However, those habitats are not extensive within the Project Area or adjacent to it and no large trees with hollows, or other potentially suitable nesting structures were observed within the Project Area. Therefore, no impacts are anticipated.	No comments received.
					Fishes			
Scioto Madtom	Noturus trautmani	E	No	No	Only 18 individuals of the Scioto madtom have ever been found. Of those, 14 were found in the fall of 1957 and none have been seen since. No other fish has been searched for more persistently by researchers in Ohio than this species. This fish has never been found outside of Ohio and all 18 individuals were found in a small area of Big Darby Creek. They were found in the tail end of riffles over a sand and gravel substrate. Since all of the individuals were found in the fall it has been speculated that they may spend the remainder of the year further upstream. They likely feed on various aquatic invertebrates like most other madtom species (ODNR 2020b).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Tippecanoe Darter	Etheostoma tippecanoe	Т	No	No	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR 2020b).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.



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Common Name	Scientific Name	State Listing <sup>1</sup>	Known to Occur Within Union County?2	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
							Therefore, no impacts are anticipated.	
			<u>l</u>		Invertebrates			
Northern Riffleshell	Epioblasma torulosa rangiana	E	Yes	No	This species inhabits riffles in small to large streams with swift current and a substrate of firmly packed fine gravel and sand (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Snuffbox	Epioblasma triquetra	E	Yes	No	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Clubshell	Pleurobema clava	E	Yes	No	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra and Goforth (2001) found the clubshell in gravel/sand substrate, in runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Rabbitsfoot	Quadrula cylindrica cylindrica	E	Yes	No	Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current.  Rabbitsfoot are also found in medium to large rivers in sand and gravel (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Rayed Bean	Villosa fabalis	E	Yes	No	Habitat includes gravel or sandy substrates, especially in areas of thick roots of aquatic plants, increase substrate stability (NatureServe 2020; Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
Pondhorn	Uniomerus tetralasmus	Т	Yes	No	This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is tolerant of poor water conditions and can be found well buried in a substrate of fine silt and/or	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.



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Common Name	Scientific Name	State Listing <sup>1</sup>	Known to Occur Within Union County?2	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
					mud. It has been known to survive for extended periods of time when a pond or slough has temporarily dried up by burying itself deep into the substrate (NatureServe 2020).		proposed by AEP. Therefore, no impacts are anticipated.	
Elephant-Ear	Elliptio crassidens crassidens	E	No	No	This species is an inhabitant of channels in large creeks to rivers with moderate to swift currents, primarily on sand and limestone or rock substrates (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.
		•	1		Mammals	1		
Indiana bat	Myotis sodalis	E	Yes	No	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2017). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.	The project is within the range of the Indiana bat. If suitable habitat occurs within the Project area, ODNR recommends trees be conserved. If suitable habitat occurs within the Project area and trees must be cut, ODNR recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, ODNR recommends a net survey be conducted between June 1 and August 15, prior to any cutting.
Northern Long- eared Bat	Myotis septentrionalis	E	Yes	No	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing	No comments received.



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Common Name	Scientific Name	State Listing <sup>1</sup>	Known to Occur Within Union County?2	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
							suitable roost habitat and will proceed accordingly.	
Little Brown Bat	Myotis lucifugus	E	Yes	No	The little brown bat is found throughout Ohio. This species seems to prefer to forage over water but also forages among trees in rather open areas (Harvey et al. 1999). During summer, it typically inhabits buildings, attics, church belfries, barns and outbuildings, and occasionally more natural habitats such as sloughing bark of a dead tree. During summer, two types of roosts are utilized: day roosts and night roosts. Day roosts are the maternity colony roost, while little brown bats often roost in other areas where they rest and congregate to digest their food in between foraging bouts. In Ohio, this species typically utilizes caves and mines as hibernacula, although at least one hibernaculum was found to be located in an attic of an old building (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.	No comments received.
Tri-colored Bat  1 E=Endangered; T=T	Perimyotis subflavus	E	No	No	The tricolored bat is found throughout Ohio. This species has been found to forage above and within a variety of habitats, including woodlands, agricultural fields, grassy areas, and over streamside vegetation (Sparks et al. 2011). Maternity colonies have often been found within clusters of dead leaves, hanging in trees. Maternity colonies have also been found in or on buildings. Little is known of male tri-colored bats in summer, but it is thought that they are probably solitary and spend their days in similar situations, as well as crevices, caves and mines (Brack et a.l 2010). In Ohio, this species typically utilizes caves and mines as hibernacula, utilizing a variety of situations, including very cold areas near cave entrances to deeper passages that seem to be too warm for other species of bats (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.	No comments received.



<sup>&</sup>lt;sup>1</sup> E=Endangered; T=Threatened <sup>2</sup> According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR 2020a). <sup>3</sup> According to Ohio Natural Heritage Program (Appendix B).

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Table 5. Summary of Potential Federally Listed Species within the Marysville Station Expansion Project Area, Union County, Ohio

Common Name	Scientific Name	Federal Listing <sup>1</sup>	Known to Occur Within Union County? <sup>2</sup>	Potential Habitat Preference Observed in Project Area?		Impact Assessment	USFWS Comments/Recommendations
Indiana Bat	Myotis sodalis	E	Yes	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2017). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.	All projects in the State of Ohio lie within the range of the Indiana bat. The USFWS stated that should the project site contain trees ≥3 inches dbh, USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 to avoid adverse effects to this species. If implementation of seasonal tree clearing is not possible, USFWS recommends summer presence/absence surveys be conducted between June 1 and August 15. If seasonal tree clearing is implemented, the USFWS does not anticipate adverse effects to this species.
Northern Long-eared Bat	Myotis septentrionalis	T	Yes	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. However, potentially suitable summer foraging habitat (deciduous forest; riparian forest; streamside habitats) and potential roost trees were observed. AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.	All projects in the State of Ohio lie within the range of the northern long-eared bat. The USFWS stated that should the project site contain trees ≥3 inches dbh, USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 to avoid adverse effects to this species. If seasonal tree clearing is implemented, the USFWS does not anticipate adverse effects to this species. Incidental take of northern longered bats from most tree clearing is exempted by a 4(d) rule.
	1	<del></del>		Fishes	T		
Scioto Madtom	Noturus trautmani	E	Yes	Only 18 individuals of the Scioto madtom have ever been found. Of those, 14 were found in the fall of 1957 and none have been seen since. No other fish has been searched for more persistently by researchers in Ohio than this species. This fish has never been found outside of Ohio and all 18 individuals were found in a small area of Big Darby Creek. They were found in the tail end of riffles over a sand and gravel substrate. Since all of the individuals were found in the fall it has been speculated that they may spend the remainder of the year further upstream. They likely feed on various aquatic invertebrates like most other madtom species (ODNR 2020b).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
	1	I		Mussels	1	1	



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Common Scientific Name Name	Federal Listing <sup>1</sup>	Known to Occur Within Union County? <sup>2</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/Recommendations
Rayed Bean Villosa fabal	alis E	Yes	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
Northern Riffleshell  Rangiana	E	Yes	This species inhabits riffles in small to large streams with swift current and a substrate of firmly packed fine gravel and sand (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
Snuffbox Epioblasma triquetra	L -	Yes	Occurs in medium-sized streams to large rivers, generally on mud, rocky, gravel, or sand substrates in flowing water. This species is often deeply buried in substrate and overlooked by collectors (NatureServe 2020). It is found in a wide range of particle sized substrates. However, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998; Watters et al. 2009).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
Clubshell Pleurobema clava	na E	Yes	This is a species of small to medium-sized rivers and streams. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle, and cannot tolerate mud or slack water conditions (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
Quadrula Rabbitsfoot cylindrica cylindrica	a T	Yes	Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Rabbitsfoot are also found in medium to large rivers in sand and gravel (NatureServe 2020).	No	No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.
Clubshell Pleurobema clava  Rabbitsfoot Cylindrica	na E a T a med	Yes	gravel, or sand substrates in flowing water. This species is often deeply buried in substrate and overlooked by collectors (NatureServe 2020). It is found in a wide range of particle sized substrates. However, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998; Watters et al. 2009).  This is a species of small to medium-sized rivers and streams. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle, and cannot tolerate mud or slack water conditions (NatureServe 2020).  Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Rabbitsfoot are also found in medium to large	No	within the Project Area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, no impacts are anticipated.  No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts are anticipated.  No suitable habitat was observed within the Project Area. Additionally, no in-water work is proposed by AEP.	not anticipate adver endangered, threat  Due to the project typ not anticipate adver endangered, threat  Due to the project typ not anticipate adver

<sup>&</sup>lt;sup>2</sup> According to USFWS (2018).



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#### 4.0 Conclusions and Recommendations

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species within the Project Area on August 29 and 30, 2017, September 6, 2017, and again on September 24, 2020. During the collective field surveys, four palustrine emergent (PEM) wetlands totaling approximately 1.64 acres, one palustrine scrub-shrub (PSS) wetland totaling approximately 0.04 acres, two palustrine forested (PFO) wetlands totaling approximately 1.34 acres, and one palustrine unconsolidated bottom (PUB) wetland totaling approximately 0.02 acres were identified within the Project Area. Additionally, two ephemeral streams totaling approximately 444 linear feet in length and two intermittent streams totaling approximately 2,508 linear feet in length were also delineated within the Project Area. See Table 2 for more information regarding the wetland classifications and ORAM categories and Table 3 for more information regarding the streams identified within the Project Area. The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project Area at the time of the field work. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

Table 4 provides summary information for all state-listed threatened and endangered species known to occur, or with potential to occur, within Union County, as well as additional state-listed species mentioned by the ODNR in their environmental review response letter. An environmental review request letter was sent to the ODNR Office of Real Estate. The ODNR Office of Real Estate response letter (Appendix B) indicated that the Project Area is located within the range of the following state-listed endangered and/or threatened species: Indiana bat, Scioto madtom, Tippecanoe darter, king rail, loggerhead shrike, northern harrier, and 7 mussel species.

If suitable Indiana bat roost habitat occurs within the Project Area, the ODNR recommends trees be conserved. If suitable Indiana bat roost habitat occurs in the Project Area and trees must be cut, the ODNR recommends cutting occur between October 1 and March 31. If suitable trees must be cut during summer months, the ODNR recommends a net survey be conducted between June 1 and August 15, prior to any cutting. If no tree removal is proposed, this project is not likely to impact this species. According to the ODNR, the little brown bat (state-listed endangered), northern long-eared bat (state-listed endangered), and tri-colored bat (state-listed endangered) occur statewide in Ohio. These species also roost in trees during the summer months and the little brown bat and tri-colored bat also roost in buildings. Any tree clearing that is necessary for the Project is planned to take place between October 1 and March 31 during the allotted winter tree clearing window. Additionally, no buildings will be removed as part of the Project. Therefore, no impacts to the Indiana bat, northern long-eared bat, little brown bat, and tri-colored bat are anticipated.



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According to the ODNR, due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact the Scioto madtom, Tippecanoe darter, or the 7-mussel species. No suitable habitat for these state-listed fish and mussel species was observed within the Project Area and no in-water work in a perennial stream will be required. Therefore, no impacts to these species are anticipated.

According to the ODNR, the loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. The ODNR stated that, if thickets or other types of dense shrubbery habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to August 1. Potentially suitable nesting habitat for the loggerhead shrike (old field habitat with scattered trees and shrubs) was observed in the Project area. It is anticipated that AEP will avoid construction in potentially suitable loggerhead shrike nesting habitat between April 1 and August 1 or pre-construction nest surveys for this species will be conducted. Therefore, the Project is not likely to impact this species. No suitable habitat was observed in the Project area for the northern harrier or king rail. Therefore, no impacts to those species are anticipated.

Potential habitat was also observed for the lark sparrow, least bittern, and barn owl within the Project area. Old field habitat within the Project area is limited but could be considered potential nesting habitat for the lark sparrow and potential foraging habitat for the barn owl. However, those habitats are not extensive within the Project Area or adjacent to it. Additionally, it is anticipated that AEP will clear vegetation outside of the lark sparrow's nesting season. Therefore, no impacts to the lark sparrow are anticipated. Potentially suitable barn owl nesting habitat was also observed within the Project Area (deciduous forest; riparian forest). However, those habitats are not extensive within the Project Area or adjacent to it, and no large trees with hollows or other potentially suitable barn owl nesting structures were observed within the Project Area. Therefore, no impacts to the barn owl are anticipated. Wetland 8 provides potentially suitable habitat for the least bittern. However, Wetland 8 is a relatively small and low quality wetland with no woody vegetation, making it marginal habitat. Therefore, no impacts to the least bittern are anticipated.

The Ohio Natural Heritage Database (ONHD) review determined that there are no records of state endangered or threatened plants or animals within the Project Area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally-listed species within a one mile radius of the Project Area. Also, the OHND is unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the Project Area.

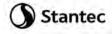
The Project Area includes suitable foraging habitat and potentially suitable roosting habitat for the following federally listed threatened and endangered species: Indiana bat and northern long-eared bat. A technical assistance letter was submitted to the USFWS. The USFWS response letter (Appendix B) stated that should the project site contain trees ≥3 inches dbh, the USFWS



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recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 to avoid adverse effects to these species. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/absence surveys be conducted for the Indiana bat between June 1 and August 15. If seasonal tree clearing is implemented, the USFWS does not anticipate adverse effects to these species or any other federally endangered, threatened, proposed or candidate species due to the project type, size, and location (Appendix B). AEP intends to clear trees within the Project Area between October 1 and March 31. Therefore, no adverse effects to the Indiana bat or northern long-eared bat are anticipated.

Additionally, the USFWS indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project area (Appendix B). The USFWS recommended that impacts to wetlands and other water resources be avoided or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.



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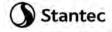
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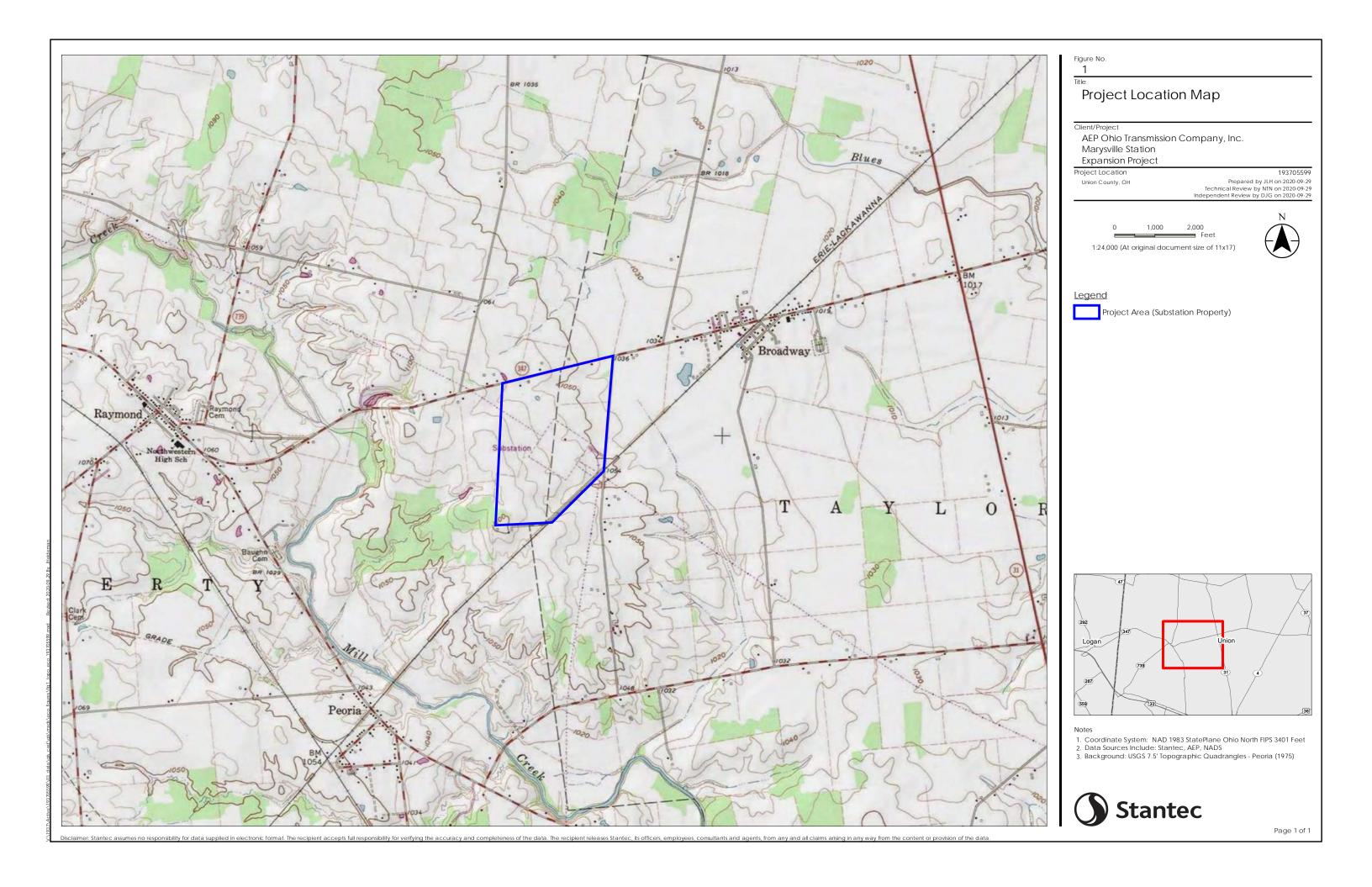
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# **Appendix A** Figures

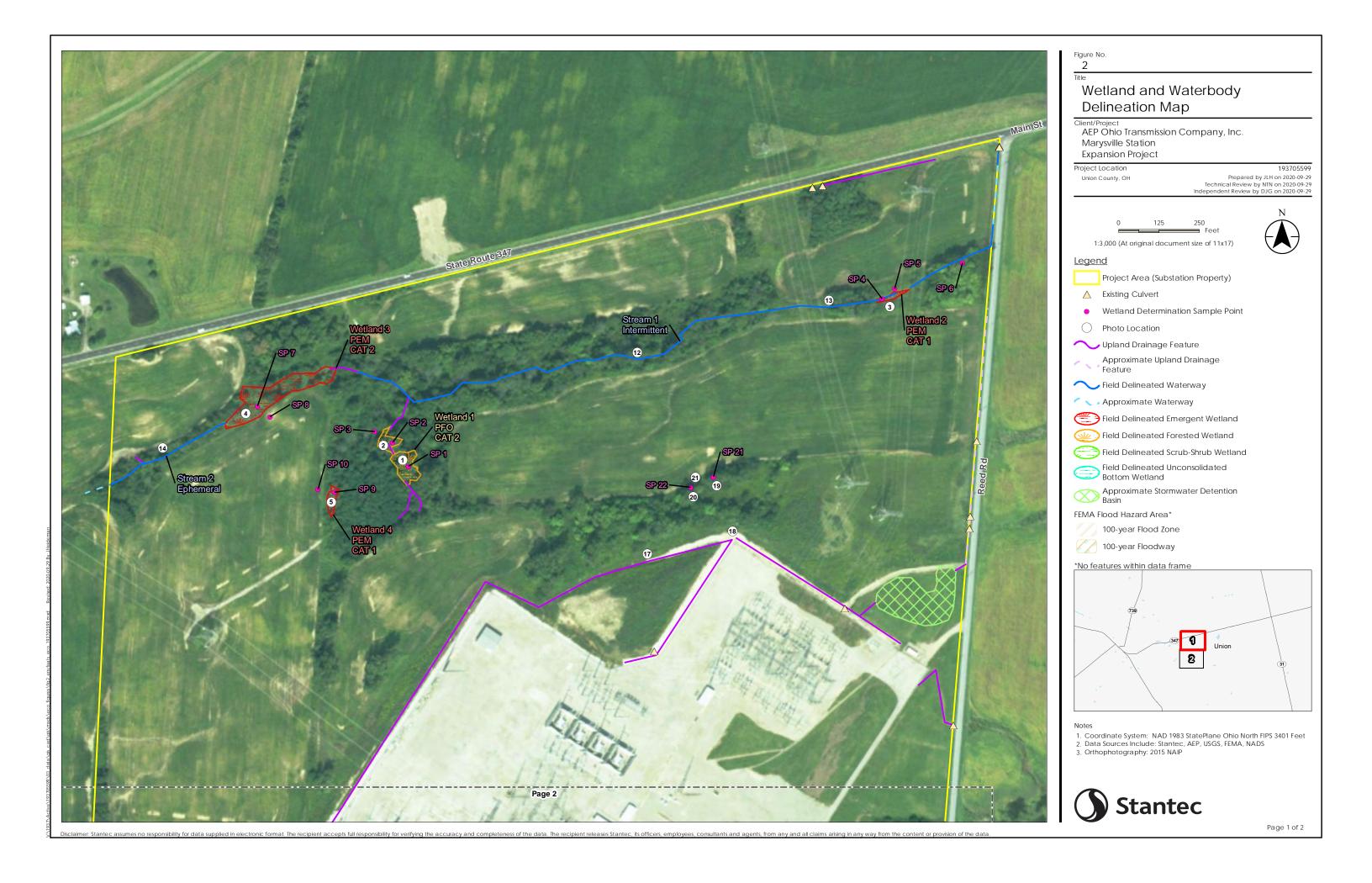
A.1 FIGURE 1 – PROJECT LOCATION MAP

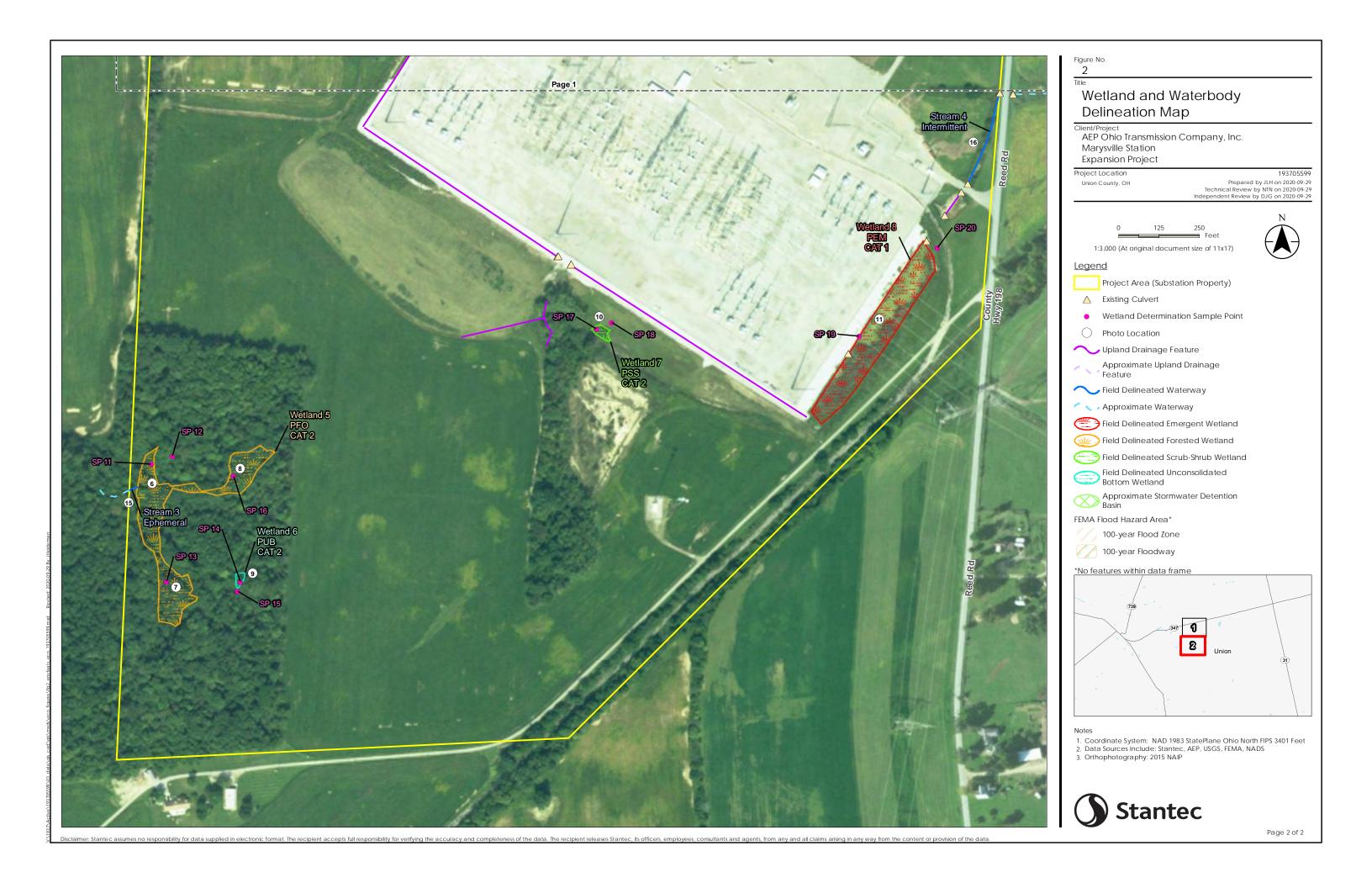




A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP







A.3 FIGURE 3 – HABITAT ASSESSMENT MAP







# Appendix B Agency Correspondence



Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

November 13, 2017

Dan Godec Stantec 1500 Lake Shore Drive Suite 100 Columbus OH 43204-3800

Re: 17-671; Request for Environmental Review, Marysville Station Expansion Project

**Project:** The proposed project involves the expansion of the existing Marysville 765 substation (Marysville Station).

**Location:** The proposed project is in Liberty and Taylor Townships, Union County, Ohio.

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

**Natural Heritage Database:** The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

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

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

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

The project is within the range of the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: shagbark hickory (Carya ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraxinus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Quercus imbricaria), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of for the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federal candidate mussel, the elephant-ear (*Elliptio crassidens crassidens*), a state endangered mussel, and the pondhorn (*Uniomerus tetralasmus*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the Scioto madtom (*Noturus trautmani*), a state endangered and federally endangered fish, and the Tippecanoe darter (*Etheostoma Tippecanoe*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the king rail (*Rallus elegans*), a state endangered bird. Nests for this species are deep bowls constructed out of grass and usually hidden very well in marsh vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species'

nesting period of May 15 to August 1. If this habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the loggerhead shrike (*Lanius ludovicianus*), a state endangered bird. The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. If thickets or other types of dense shrubbery habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to August 1. 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 U.S. 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. Your local floodplain administrator contact information can be found at the website below.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\_8\_16.pdf$ 

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler ODNR Office of Real Estate 2045 Morse Road, Building E-2 Columbus, Ohio 43229-6693 John.Kessler@dnr.state.oh.us From: <u>susan\_zimmermann@fws.gov</u> on behalf of <u>Ohio, FW3</u>

To: Godec, Daniel

Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us

Subject: AEP Marysville Station Expansion Project, Union Co. OH

Date: Wednesday, September 06, 2017 11:34:48 AM

Attachments: Capture of Dan.PNG



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230

(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2017-TA-1832

Dear Mr. Godec,

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

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered Indiana bat (Myotis sodalis) and the federally threatened northern long-eared bat (Myotis septentrionalis). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags =3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the

characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see

http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern longeared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

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

These comments have been prepared under the authority of the Fish and Wildlife

Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at <a href="mailto:john.kessler@dnr.state.oh.us">john.kessler@dnr.state.oh.us</a>.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or <a href="mailto:ohio@fws.gov">ohio@fws.gov</a>.

Sincerely,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

## **Appendix C** Representative Photographs

C.1 WETLAND AND WATERBODY PHOTOGRAPHS







Photo Location 1. View of Wetland 1. Photograph taken facing north.



Photo Location 1. View of Wetland 1. Photograph taken facing west.





Photo Location 1. View of Wetland 1. Photograph taken facing south.



Photo Location 1. View of Wetland 1. Photograph taken facing east.





Photo Location 2. View of Wetland 1. Photograph taken facing north.



Photo Location 2. View of Wetland 1. Photograph taken facing west.





Photo Location 2. View of Wetland 1. Photograph taken facing east.



Photo Location 2. View of Wetland 1. Photograph taken facing south.





Photo Location 3. View of Wetland 2. Photograph taken facing east.



Photo Location 3. View of Wetland 2. Photograph taken facing northeast.





Photo Location 3. View of Wetland 2. Photograph taken facing southwest.



Photo Location 3. View of Wetland 2. Photograph taken facing west.





Photo Location 4. View of Wetland 3. Photograph taken facing west.



Photo Location 4. View of Wetland 3. Photograph taken facing east.





Photo Location 4. View of Wetland 3. Photograph taken facing south.



Photo Location 4. View of Wetland 3. Photograph taken facing north.





Photo Location 5. View of Wetland 4. Photograph taken facing south.



Photo Location 5. View of Wetland 4. Photograph taken facing west.





Photo Location 5. View of Wetland 4. Photograph taken facing north.



Photo Location 5. View of Wetland 4. Photograph taken facing east.





Photo Location 6. View of Wetland 5. Photograph taken facing north.



Photo Location 6. View of Wetland 5. Photograph taken facing east.





Photo Location 6. View of Wetland 5. Photograph taken facing west.



Photo Location 6. View of Wetland 5. Photograph taken facing south.





Photo Location 7. View of Wetland 5. Photograph taken facing west.



Photo Location 7. View of Wetland 5. Photograph taken facing north.





Photo Location 7. View of Wetland 5. Photograph taken facing east.



Photo Location 7. View of Wetland 5. Photograph taken facing south.





Photo Location 8. View of Wetland 5. Photograph taken facing north.



Photo Location 8. View of Wetland 5. Photograph taken facing south.





Photo Location 8. View of Wetland 5. Photograph taken facing east.



Photo Location 8. View of Wetland 5. Photograph taken facing west.





Photo Location 9. View of Wetland 6. Photograph taken facing north.



Photo Location 9. View of Wetland 6. Photograph taken facing west.





Photo Location 9. View of Wetland 6. Photograph taken facing east.



Photo Location 9. View of Wetland 6. Photograph taken facing south.





Photo Location 10. View of Wetland 7. Photograph taken facing west.



Photo Location 10. View of Wetland 7. Photograph taken facing south.





Photo Location 10. View of Wetland 7. Photograph taken facing north.



Photo Location 10. View of Wetland 7. Photograph taken facing east.





Photo Location 11. View of Wetland 8. Photograph taken facing south.



Photo Location 11. View of Wetland 8. Photograph taken facing southeast.





Photo Location 11. View of Wetland 8. Photograph taken facing northeast.



Photo Location 11. View of Wetland 8. Photograph taken facing southwest.





Photo Location 12. View of Stream 1. Photograph taken facing upstream/west.



Photo Location 12. View of Stream 1. Photograph taken facing downstream/east.





Photo Location 13. View of Stream 1. Photograph taken facing upstream/west.



Photo Location 13. View of Stream 1. Photograph taken facing downstream/east.





Photo Location 14. View of Stream 2. Photograph taken facing upstream/west.



Photo Location 14. View of Stream 2. Photo taken facing downstream/east.





Photo Location 15. View of Stream 3. Photo taken facing upstream/northeast.



Photo Location 15. View of Stream 3. Photograph taken facing downstream/southwest.





Photo Location 16. View of Stream 4. Photograph taken facing upstream/southwest.



Photo Location 16. View of Stream 4. Photograph taken facing downstream/northeast.





Photo Location 17. Representative view of vegetated upland drainage feature. Photograph taken facing west.



Photo Location 18. Representative view of graveled upland drainage feature. Photograph taken facing northwest.





Photo Location 19. View of non-jurisdictional wetland determination sample point 21. Photograph taken facing west.



Photo Location 19. View of non-jurisdictional wetland determination sample point 21. Photograph taken facing south.





Photo Location 19. View of non-jurisdictional wetland determination sample point 21.

Photograph taken facing east.



Photo Location 19. View of non-jurisdictional wetland determination sample point 21.

Photograph taken facing north.





Photo Location 20. View of non-jurisdictional wetland determination sample point 22. Photograph taken facing south.



Photo Location 20. View of non-jurisdictional wetland determination sample point 22. Photograph taken facing west.





Photo Location 20. View of non-jurisdictional wetland determination sample point 22. Photograph taken facing north.



Photo Location 20. View of non-jurisdictional wetland determination sample point 22.

Photograph taken facing east.





Photo Location 21. View of early successional deciduous forest at wetland determination sample points 21 and 22. Photograph taken facing east.



Photo Location 21. View of early successional deciduous forest at wetland determination sample points 21 and 22. Photograph taken facing west.

ECOLOGICAL RESOURCES INVENTORY REPORT, MARYSVILLE STATION EXPANSION PROJECT, UNION COUNTY, OHIO

### C.2 HABITAT PHOTOGRAPHS







Photo Location 1. Representative view of old field habitat. Photograph taken facing northeast.



Photo Location 2. Representative view of manicured lawn habitat. Photograph taken facing northwest.





Photo Location 3. Representative view of mixed early successional/second growth deciduous forest habitat. Photograph taken facing north.



Photo Location 4. Representative view of second growth deciduous forest habitat. Photograph taken facing south.





Photo Location 5. Representative view of mixed early successional/second growth riparian forest habitat. Photograph taken facing east.



Photo Location 6. Representative view of early successional deciduous forest habitat.

Photograph taken facing north.





Photo Location 7. Representative view of industrial habitat. Photograph taken facing southeast.



Photo Location 8. Representative view of agricultural habitat. Photograph taken facing southwest.





Photo Location 9. Representative view of existing gravel road. Photograph taken facing northeast.

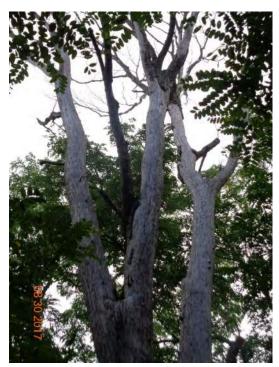


Photo Location 10. Representative view of potential bat roost tree. Photograph taken facing northeast.





Photo Location 11. Representative view of recently constructed stormwater detention basin and new field habitat area. Photograph taken facing south.



Photo Location 12. View of concrete outfall within the recently constructed stormwater detention basin. Photograph taken facing north.

ECOLOGICAL RESOURCES INVENTORY REPORT, MARYSVILLE STATION EXPANSION PROJECT, UNION COUNTY, OHIO

## **Appendix D** Data Forms

D.1 WETLAND DETERMINATION DATA FORMS





## WETLAND DETERMINATION DATA FORM Midwest Region

Are Vegetation	AEP Ohio Nate Nolar Wetzel silty clay Depression 0% drologic cond , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	Latitude: Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat sent?	oical for	Investi Loc L this time disturb	ed? ic? □ No	Concav	IWI/WWI Classification:	Datum:  ☑ Yes □ nces present? N□ Hydric Soils	No Present?	County: State: Wetland ID: Sample Point: Community ID: Section: Township:	PFO      Dir:  ✓ Yes □ No
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water M B2 - Sedimen B3 - Drift Dep B4 - Algal Ma B5 - Iron Dep B7 - Inundation	ater Table on larks ot Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydr C3 - Oxid C4 - Pres	er-Stained latic Fauna le Aquatic logen Sulfic logen Sulfic logen Sulfic logen Stain logen	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seasor C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants c Position
Field Observate Surface Water Water Table Pro Saturation Pres Describe Record Remarks:  SOILS	Present? esent? ent?	☑ Yes □ No □ Yes ☑ No ☑ Yes □ No eam gauge, monitori	Depth: Depth: Depth:	0-7	(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? ☑	Yes □ No
Map Unit Name	) <u>.</u>	Wetzel silty clay loa	am								
Profile Descrip	otion (Describe to	the depth needed to document the inc	licator or confire	m the absence o	of indicators.) (Ty	pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra	ins; Location: PL=F	ore Lining, M=Matrix)	
Тор	Bottom			Matrix				ox Features			Texture
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	16		10YR	4/1	60	7.5YR	4/6	20	С	M	silty clay
0	16		10YR	4/2	20						silty clay
Restrictive Layer (If Observed)	A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	stic en Sulfide d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat		Depth:	S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple	y Gleyed I y Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Bleyed Matrix □ A16 - Coast Prairie Redox  Redox □ S7 - Dark Surface □ F12 - Iron-Manganese Masses  Muck Mineral □ TF12 - Very Shallow Dark Surface  Bleyed Matrix □ Other (Explain in Remarks)				
Remarks:	old farm po	ond									



# WETLAND DETERMINATION DATA FORM Midwest Region

Wetland ID: Wetland 1 Project/Site: Marysville Station Expansion Project Sample Point: SP 1 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) Species Name **Dominance Test Worksheet** % Cover Dominant Ind.Status Populus deltoides 55 Υ FAC 1. 2. Salix nigra 15 Number of Dominant Species that are OBL, FACW, or FAC: 5 (A) OBL 3. 4. Total Number of Dominant Species Across All Strata: (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. x 1 = 10. FACW spp. 0 Total Cover = 70 x 2 =FAC spp. 85 x 3 =FACU spp. 0
UPL spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =5 1. Salix nigra **OBL** x = 52. 3. --Total 130 (A) (B) 4. --5. Prevalence Index = B/A = 2.308 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 5 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Panicum virgatum 30 FAC 1. \* Indicators of hydric soil and wetland hydrology must be 2. Persicaria hydropiperoides 20 Υ **OBL** present, unless disturbed or problematic. 3. Alisma subcordatum **OBL Definitions of Vegetation Strata:** 4. --5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 55 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



## WETLAND DETERMINATION DATA FORM Midwest Region

Drainat/Citar										г		
Project/Site:		Station Expansion F					Stantec Project #:	193705599		Date:	08/29/17	
Applicant:		Transmission Comp	any, Inc							County: State:	Union	
Investigator #1:	<u>nd</u>		Investigator #2: Kate Bomar							Ohio		
Soil Unit:	/ loam		NWI/WWI Classification: NONE							Wetland 1		
Landform:	Depression				cal Relief:			_		Sample Point:		
Slope (%):	2%	<u>Latitude:</u>			.ongitude:				NAD83	Community ID:	PFO	
		ditions on the site ty	•			(If no, expl		☑ Yes □	No	Section:		
•		or Hydrology □ sig	•				Are normal circumsta	•	)	Township:		
		or Hydrology □ nat	turally pr	oblemat	ic?		Yes	NŪ		Range:	Dir:	
SUMMARY OF												
Hydrophytic Ve	_			Yes				Hydric Soils				
Wetland Hydro	logy Present	:?		✓ Yes	s 🗆 No			Is This Samp	oling Point	Within A Wetla	and? <b>□ Yes ■ No</b>	
Remarks:												
HYDROLOGY												
Wetland Hydr	ology Indic	ators (Check here i	f indicate	ors are r	not preser	nt□ ):						
Primary	•	(			•	,			Secondary:			
			B9 - Wate	er-Stained	Leaves		B6 - Surface Soil Cracks					
	A2 - High Wa				B13 - Aqu			□ B10 - Drainage Patterns				
	A3 - Saturation			<ul><li>□ B14 - True Aquatic Plants</li><li>□ C1 - Hydrogen Sulfide Odor</li><li>□ C3 - Oxidized Rhizospheres on Living Roots</li></ul>					<ul><li>□ C2 - Dry-Season Water Table</li><li>□ C8 - Crayfish Burrows</li></ul>			
	B2 - Sedimer									•	Visible on Aerial Imagery	
	B3 - Drift De	•					educed Iron				Stressed Plants	
	B4 - Algal Ma			□ C6 - Recent Iron Reduction in Tilled Soils □								
	B5 - Iron Dep				C7 - Thin				☑	D5 - FAC-Neutr	ral Test	
		on Visible on Aerial Ima	•		D9 - Gau	_						
	B8 - Sparsely	y Vegetated Concave S	surrace	Ц	Other (Ex	piain in Re	emarks)					
Field Observed	·iana.											
Field Observat		- V N.	D (1		(: <sub></sub> \							
Surface Water		□ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pi	resent?	Yes □ No	
Water Table Pr		□ Yes ☑ No	Depth:		(in.)			,	<b></b>			
Saturation Pres	sent?	□ Yes ☑ No	Depth:		(in.)							
Describe Record	ded Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ections), if available:		N/A			
Remarks:												
SOIL S												
SUILS												
SOILS Map Unit Name	9:	Wetzel silty clay loa	am									
Map Unit Name		Wetzel silty clay loa		m the absence	of indicators.) (Tv	pe: C=Concentr	ation. D=Depletion. RM=Reduced Matrix. CS=	:Covered/Coated Sand Gra	ains: Location: PL=F	Pore Lining, M=Matrix)		
Map Unit Name Profile Descrip	otion (Describe to					pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=		ains; Location: PL=F	Pore Lining, M=Matrix)	Texture	
Map Unit Name Profile Descrip Top	Bottom	the depth needed to document the ind	dicator or confirm	Matrix	(	pe: C=Concentra	Redo	ox Features		1	Texture (e.g. clav. sand. loam)	
Map Unit Name Profile Descrip Top Depth	Bottom Depth	the depth needed to document the ind	dicator or confirm	Matrix (Moist)	%		Color (Moist)	ox Features %	Туре	Location	(e.g. clay, sand, loam)	
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth	the depth needed to document the ind  Horizon	Color 10YR	Matrix (Moist) 4/2	% 95	10YR	Color (Moist)  5/8	% Features % 5	Type C	Location PL	(e.g. clay, sand, loam) silty clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	the depth needed to document the ind  Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1	% 95 90	10YR 10YR	Color (Moist)  5/8 6/8	% 5 10	Type C C	Location PL M	(e.g. clay, sand, loam)	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	the depth needed to document the ind Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1	95 90 	10YR 10YR	Color (Moist)  5/8  6/8	% 5 10	Type C C	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 	95 90 	10YR 10YR 	Color (Moist)  5/8  6/8	% 5 10 	Type C C 	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1  	95 90  	10YR 10YR  	Color (Moist)  5/8  6/8	% 5 10  	Type C C 	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 	95 90 	10YR 10YR 	Color (Moist)  5/8  6/8	% 5 10 	Type C C 	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1   	95 90    	10YR 10YR   	Color (Moist)  5/8  6/8	% 5 10    	Type	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1	95 90    	10YR 10YR   	Color (Moist)  5/8  6/8	% 5 10	Type	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1	% 95 90 are not pre	10YR 10YR    	Redo Color (Moist) 5/8 6/8 ):	5 10 Indicators	Type C C for Problem	Location PL M matic Soils 1	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 16 Soil Field Ir	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 icators a	95 90      are not pre	10YR 10YR esent □ dy Gleyed	Redo Color (Moist) 5/8 6/8 ):	5 10 Indicators	Type C C for Problem A16 - Coast	Location PL M matic Soils <sup>1</sup> Prairie Redox	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field In A1- Histosol A2 - Histic Ep	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 icators a	95 90     are not pre S4 - Sand S5 - Sand	10YR 10YR esent □ dy Gleyed dy Redox	Color (Moist)  5/8  6/8	5 10 Indicators	Type C C for Problem A16 - Coast S7 - Dark S	Location PL M patic Soils  Prairie Redox	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 icators a	95 90     are not pre S4 - Sand S5 - Sand S6 - Strip	10YR 10YR esent □ dy Gleyed dy Redox ped Matrix	Color (Moist)  5/8  6/8        Natrix	5 10 Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field In A1- Histosol A2 - Histic Ep	Horizon	Color 10YR 10YR	Matrix (Moist) 4/2 4/1 icators a	95 90     are not pre S4 - Sand S5 - Sand	10YR 10YR esent □ dy Gleyed dy Redox ped Matrix ny Muck M	Color (Moist)  5/8 6/8 ): Matrix	5 10	Type C C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location PL M patic Soils  Prairie Redox	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90      are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple	10YR 10YR	Color (Moist)  5/8  6/8      ): Matrix dineral Matrix	5 10	Type C C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S5 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo	10YR 10YR	Color (Moist)  5/8  6/8        Natrix  ineral Matrix  curface	5 10	Type C C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick I	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	5 10	Type C C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S5 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	5 10	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M	(e.g. clay, sand, loam) silty clay loam clay loam ses urface	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	Sx Features % 5 10 Indicators  Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam es	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	5 10	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam ses urface	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	Sx Features % 5 10 Indicators  Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam es	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	Sx Features % 5 10 Indicators  Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam es	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	Sx Features % 5 10 Indicators  Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam es	
Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/2  4/1     icators a	95 90 S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	10YR 10YR 10YR esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Color (Moist)  5/8  6/8       ): Matrix  Inneral Matrix  Curface Surface Surface	Sx Features % 5 10 Indicators  Indicators	Type C C for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location PL M matic Soils  Prairie Redox urface flanganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) silty clay loam clay loam es	



Wetland ID: Wetland 1 Project/Site: Marysville Station Expansion Project Sample Point: SP 2 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Fraxinus pennsylvanica 20 Υ **FACW** 1. Number of Dominant Species that are OBL, FACW, or FAC: 5 (A) 2. Populus deltoides 30 FAC 3. 4. Total Number of Dominant Species Across All Strata: (B) --5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 50 x 2 =FAC spp. 64 x 3 =192 FACU spp. 3 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =12 UPL spp. 0 3 **FAC** 1. Acer negundo Ν x = 52. 3. --Total 181 (A) (B) 4. --5. Prevalence Index = B/A = 2.210 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 3 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Agrimonia parviflora 10 Ν **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 20 Ν **FACW** Pilea pumila present, unless disturbed or problematic. 3. 25 FAC Symphyotrichum lanceolatum 30 Υ **FACW Definitions of Vegetation Strata:** 4. Impatiens capensis 3 5. Ν FAC Xanthium strumarium 6 3 Ν **FACU** Solidago canadensis Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Acorus calamus 30 **OBL** 2 **FACW** 8. Phalaris arundinacea Ν Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. Ambrosia trifida 3 Ν FAC ft. tall. **OBL** 10. Lycopus americanus Ν 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 128 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** ✓ Yes □ No 4. 5. --Total Cover = 0 Remarks:

Additional Remarks:										



Duna: a at/O:4a.											
Project/Site:	Marysville S	Station Expansion F	Project				Stantec Project #:	193705599		Date:	08/29/17
Applicant:	-	Fransmission Comp	-	) <u>.</u>			•			County:	Union
Investigator #1		•	,		igator #2:	Kata Bo	mar			State:	Ohio
-				IIIVESI	igator #2.			NONE		_	Wetland 1
Soil Unit:	Wetzel silty clay	loam					WI/WWI Classification:	NONE			
Landform:	Side slope				cal Relief:					Sample Point:	
Slope (%):	5%	Latitude:	•	L	ongitude:			Datum:	NAD83	Community ID:	Upland
Are climatic/hyd	drologic cond	ditions on the site ty	pical for	this time	e of year?	(If no, expla	ain in remarks)	☑ Yes □	No	Section:	
•		or Hydrology □ sig	•				Are normal circumstar		>	Township:	
•		, ,,	•	•				•	·	'	
		or Hydrology □ na	turally pr	obiemai	IC?		Yes	NŪ		Range:	Dir:
<b>SUMMARY OF</b>	FINDINGS										
Hydrophytic Ve	egetation Pres	sent?		✓ Yes	□ No			Hydric Soils	Present?		□ Yes ☑ No
Wetland Hydro	•			□ Yes						Within A Wetla	and? ■ Yes <b>© No</b>
Remarks:	negy i recein	•						is ime cam	5g . 5t	· · · · · · · · · · · · · · · · · · ·	
Remarks.											
<b>HYDROLOGY</b>											
		-1(0)									
	•	ators (Check here	it indicate	ors are r	not preser	1t ☑ ):					
<u>Primary</u>									Secondary:		
	A1 - Surface				B9 - Wate	er-Stained	Leaves			B6 - Surface So	oil Cracks
	A2 - High Wa				B13 - Aqu	iatic Fauna	l			B10 - Drainage	Patterns
	A3 - Saturation	on			B14 - True	e Aquatic	Plants			C2 - Dry-Seaso	n Water Table
	B1 - Water M	larks			C1 - Hydr	ogen Sulfi	de Odor			C8 - Crayfish Bu	urrows
	B2 - Sedimer	nt Deposits					spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift Dep	•		_			educed Iron				Stressed Plants
	B4 - Algal Ma			П			duction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep			H	C7 - Thin					D5 - FAC-Neutr	
		on Visible on Aerial Ima	agery		D9 - Gaug				_	DO 1710 Neuti	ai rest
		Vegetated Concave S	-		Other (Ex	•					
	Bo - Sparsery	vegetated Concave t	Surrace	Ц	Other (EX	piaiii iii Ne	marks)				
Field Observa	tions:										
Surface Water	Present?	□ Yes ☑ No	Depth:		(in.)						
			-		` '			Wetland Hy	drology Pı	resent?	Yes ☑ No
Water Table Pr		□ Yes ☑ No	Depth:		(in.)						
Saturation Pres	sent?	□ Yes ☑ No	Depth:		(in.)						
Doscribo Pocore	dod Data (str	eam gauge, monitori	na woll a	orial pho	otoc provis	oue inene	ctions) if available:		N/A		
	aca bata (str	Sam gaage, moniton	rig weii, e	acriai pric	otos, previ	ous mape	ctions), if available.		14// (		
Remarks:											
SOILS											
SOILS		Material cilturales de									
Map Unit Name		Wetzel silty clay loa									
Map Unit Name				m the absence o	of indicators.) (Ty	pe: C=Concentra	tion, D=Depletion, RM=Reduced Matrix, CS=0	Covered/Coated Sand Gra	ains; Location: PL=F	Pore Lining, M=Matrix)	
Map Unit Name Profile Descrip	ption (Describe to					pe: C=Concentra	tion, D=Depletion, RM=Reduced Matrix, CS=0		ains; Location: PL=F	Pore Lining, M=Matrix)	Texture
Map Unit Name Profile Descrip Top	ption (Describe to Bottom	the depth needed to document the in	dicator or confir	Matrix	,	pe: C=Concentra	Redo	<u>x Features</u>	_		Texture
Map Unit Name Profile Descrip Top Depth	Bottom Depth		dicator or confirm	Matrix (Moist)	%		Color (Moist)	x Features %	Туре	Location	(e.g. clay, sand, loam)
Map Unit Name Profile Descrip Top	ption (Describe to Bottom	the depth needed to document the in	dicator or confir	Matrix	,	pe: C=Concentra	Redo	<u>x Features</u>	_		
Map Unit Name Profile Descrip Top Depth	Bottom Depth	the depth needed to document the in	dicator or confirm	Matrix (Moist)	%		Color (Moist)	x Features %	Туре	Location	(e.g. clay, sand, loam)
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 5/2 	% 95 	10YR 	Color (Moist)  5/4	% 5	Type C 	Location M 	(e.g. clay, sand, loam)  clay loam
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 5/2	% 95	10YR	Color (Moist) 5/4	% Features 5	Type C	Location M	(e.g. clay, sand, loam)
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 5/2 	% 95 	10YR 	Color (Moist)  5/4	% 5	Type C 	Location M 	(e.g. clay, sand, loam)  clay loam
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 5/2	% 95 	10YR 	Color (Moist)  5/4	% 5	Type C 	Location M 	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon	Color 10YR	Matrix (Moist)  5/2	% 95  	10YR   	Color (Moist) 5/4	% 5	Type C 	Location M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Ption (Describe to  Bottom Depth 16	Horizon	Color 10YR	Matrix (Moist) 5/2	% 95    	10YR   	Redo Color (Moist)  5/4	5	Type C   	Location M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon	Color 10YR	Matrix (Moist)  5/2	% 95   	10YR   	Color (Moist)  5/4	% 5	Type C 	Location M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Ption (Describe to  Bottom Depth 16	Horizon	Color 10YR	Matrix (Moist) 5/2	% 95    	10YR   	Redo Color (Moist)  5/4	5	Type C   	Location M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Ption (Describe to Bottom Depth 16	Horizon	Color 10YR	Matrix (Moist)  5/2	% 95	10YR	Redo Color (Moist)  5/4	% 5	Type	Location M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist)  5/2	% 95 are not pre	10YR      esent ☑	Redo Color (Moist) 5/4 ):	% 5 Indicators	Type	Location  M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16 Soil Field In	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 are not pre	10YR esent ☑ ly Gleyed	Redo Color (Moist) 5/4 ):	% 5	Type	Location  M	(e.g. clay, sand, loam) clay loam
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 stee not pre	10YR esent ☑ ly Gleyed □	Redo Color (Moist) 5/4	% 5 Indicators	Type C A16 - Coast S7 - Dark S	Location  M	(e.g. clay, sand, loam)  clay loam
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 S4 - Sand S5 - Sand S6 - Strip	10YR esent ☑ ly Gleyed I ly Redox oed Matrix	Redo Color (Moist) 5/4 ): Matrix	% 5 Indicators	Type C sfor Probler A16 - Coast S7 - Dark S F12 - Iron-M	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 S4 - Sand S5 - Sand S6 - Strip	10YR esent ☑ ly Gleyed I ly Redox ped Matrix ny Muck M	Redo Color (Moist) 5/4 ): Matrix	% 5 Indicators	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 S4 - Sand S5 - Sand S6 - Strip	10YR esent ☑ ly Gleyed I ly Redox ped Matrix ny Muck M	Redo Color (Moist) 5/4 ): Matrix	% 5 Indicators	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge	Horizon	Color 10YR	Matrix (Moist)  5/2     icators a	% 95 S4 - Sand S5 - Sand S6 - Strip	10YR	Redo Color (Moist) 5/4 ): Matrix ineral Matrix	5	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95 S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam	10YR	Color (Moist) 5/4 ): Matrix ineral Matrix	5	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR esent ☑ ly Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su	Redo Color (Moist) 5/4 ): Matrix ineral Matrix rface	5	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick D	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	5	Type C	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	%   5	Type C A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) clay loam es urface
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	%   5	Type C A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam)  clay loam          es
Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.
Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	%   5	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	(e.g. clay, sand, loam) clay loam es urface
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.
Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A1- Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  5/2     icators a	% 95	10YR	Color (Moist)  5/4        ): Matrix  ineral Matrix  crface Surface	Sx Features % 5 Indicators  Indicators  Indicators	Type C	Location  M matic Soils  Prairie Redox urface Manganese Mass Shallow Dark Stain in Remarks)	es present, unless disturbed or problematic.



Project/Site: Marysville Station Expansion Project Wetland ID: Wetland 1 Sample Point: SP 3 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Acer rubrum Υ FAC 1. 15 2. ------Number of Dominant Species that are OBL, FACW, or FAC: 3 (A) 3. 4. (B) Total Number of Dominant Species Across All Strata: --5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B) ----7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. \_\_\_\_ Total Cover = 15 x 2 =FAC spp. 35 x 3 =105 FACU spp. 68 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =272 UPL spp. 0 Lonicera morrowii 20 **FACU** 1. x = 5Rosa multiflora 2. 15 **FACU** 3. 3 **FACW** Sambucus nigra Total 181 (A) 533 (B) 4. Ulmus americana 5 **FACW** 5. Prevalence Index = B/A = 2.945 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 43 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Vernonia gigantea 15 Ν FAC 1. \* Indicators of hydric soil and wetland hydrology must be 2. Agrimonia parviflora 50 Υ **FACW** present, unless disturbed or problematic. 3. 20 **FACW** Impatiens capensis Solidago canadensis 20 Υ **FACU Definitions of Vegetation Strata:** 4. 10 5. Parthenocissus quinquefolia Ν **FACU** 5 6 Ν FAC Ambrosia trifida Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Asclepias syriaca 3 Ν **FACU** 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 123 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** ✓ Yes □ No 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Project/Site:	Marysville	Station Expansion F	Project				Stantec Project #:	193705599		Date:	08/29/17
Applicant:	AEP Ohio	Transmission Comp	oany, Inc	•						County:	Union
Investigator #1:		•			igator #2:	Kate Bo	mar			State:	Ohio
Soil Unit:	Wetzel silty clay				9		IWI/WWI Classification:	NONE			Wetland 2
Landform:	Floodplain			Loc	al Relief:		ivi, ivi Olassiiisaasii.			Sample Point:	
	2%	Latitude:	40.0070		ongitude:		£17	Dotum	wgo 94	-	
Slope (%):									wgs 84 No	Community ID:	FLIVI
		ditions on the site ty	•			(If no, expla	·			Section:	
<u> </u>		or Hydrology □ sig	•				Are normal circumsta	•	,	Township:	
		or Hydrology □ nat	turally pr	oblemat	ic?			N₽		Range:	Dir:
<b>SUMMARY OF</b>	<b>FINDINGS</b>										
Hydrophytic Ve	getation Pre	sent?		✓ Yes	□ No			Hydric Soils	Present?		
Wetland Hydrol	•									Within A Wetla	
Remarks:	9, 1, 1000111										
rtemants.											
LIVEROL COV											
HYDROLOGY											
Wetland Hydr	ology Indic	ators (Check here i	if indicate	ors are r	not preser	nt□ ):					
Primary	•	`			•	,			Secondary:		
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves		•	B6 - Surface So	oil Cracks
	A2 - High Wa	ater Table			B13 - Aqu	iatic Fauna	a			B10 - Drainage	Patterns
	A3 - Saturation	on			B14 - True	e Aquatic	Plants			C2 - Dry-Seaso	n Water Table
	B1 - Water M				C1 - Hydr					C8 - Crayfish Bu	
	B2 - Sedime						spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift De <sub>l</sub>						educed Iron				Stressed Plants
	B4 - Algal Ma						eduction in Tilled Soils		✓	D2 - Geomorph	
	B5 - Iron Dep				C7 - Thin				☑	D5 - FAC-Neutr	al Test
		on Visible on Aerial Ima			D9 - Gaug	•					
	B8 - Sparsely	y Vegetated Concave S	Surface		Other (Ex	plain in Re	emarks)				
Field Observat	tions:										
Surface Water	Present?	□ Yes ☑ No	Depth:		(in.)						
Water Table Pr		□ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Pı	resent? □	Yes □ No
			•		`. (						
Saturation Pres	sent?	□ Yes ☑ No	Depth:		(in.)						
Describe Record	led Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ctions), if available:		N/A		
	led Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ctions), if available:		N/A		
Describe Record Remarks:	led Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:	led Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:	·			aerial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks: SOILS Map Unit Name	);	Wetzel silty clay loa	am			•	·				
Remarks: SOILS Map Unit Name	);	Wetzel silty clay loa	am			•	·			Pore Lining, M=Matrix)	
Remarks: SOILS Map Unit Name	);	Wetzel silty clay loa	am		of indicators.) (Typ	•	ation, D=Depletion, RM=Reduced Matrix, CS=			Pore Lining, M=Matrix)	Texture
Remarks:  SOILS  Map Unit Name Profile Descrip	e: otion (Describe to Bottom	Wetzel silty clay loat the depth needed to document the in	am dicator or confirm	m the absence o	of indicators.) (Typ	•	ation, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ains; Location: PL=F		
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth	e: otion (Describe to Bottom Depth	Wetzel silty clay loat the depth needed to document the in Horizon	am dicator or confirm Color	m the absence of Matrix (Moist)	of indicators.) (Type	pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	=Covered/Coated Sand Gra  Ox Features  %	ains; Location: PL=F	Location	(e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	e: otion (Describe to Bottom	Wetzel silty clay loat the depth needed to document the in	am dicator or confirm	m the absence o	of indicators.) (Typ	•	nation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)  4/6	=Covered/Coated Sand Gra	ains; Location: PL=F		
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth	e: otion (Describe to Bottom Depth	Wetzel silty clay loat the depth needed to document the in Horizon	am dicator or confirm Color	m the absence of Matrix (Moist)	of indicators.) (Type	pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	=Covered/Coated Sand Gra  Ox Features  %	ains; Location: PL=F	Location	(e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 16	Wetzel silty clay loo the depth needed to document the in Horizon	am dicator or confirm Color 10YR	m the absence of Matrix (Moist) 4/2	of indicators.) (Type 190)	pe: C=Concentra	nation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)  4/6	=Covered/Coated Sand Gra  Ox Features  %  5	ains; Location: PL=F Type C	Location PL	(e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	e: Dtion (Describe to Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2	of indicators.) (Type 190	pe: C=Concentra	cation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Color (Moist)  4/6	=Covered/Coated Sand Gra  Ox Features  %  5	Type C	Location PL 	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in Horizon	am dicator or confirm  Color 10YR	Matrix (Moist)  4/2	of indicators.) (Type % 90	pe: C=Concentra	cation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)  4/6	=Covered/Coated Sand Gra  Ox Features  %  5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	e: Dtion (Describe to Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in  Horizon	color 10YR	m the absence of Matrix (Moist)  4/2	% 90	10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6	=Covered/Coated Sand Gra OX Features % 5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in Horizon	am dicator or confirm Color 10YR	Matrix (Moist)  4/2	of indicators.) (Type of indicators) (Type of indic	10YR	Color (Moist)  4/6	=Covered/Coated Sand Gra OX Features % 5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	e: Dtion (Describe to Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in  Horizon	color 10YR	m the absence of Matrix (Moist)  4/2	% 90	10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6	=Covered/Coated Sand Gra OX Features % 5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2	90   	10YR	Color (Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0	Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2	90    	10YR	Color (Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5	Type C	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2	% 90 are not pre	10YR esent □	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5       Indicators	Type C for Problen	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0	Bottom Depth 16 Soil Field Ir	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2     icators a	% 90 are not pre	10YR esent □	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5       Indicators	Type C for Problem	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir	Wetzel silty clay loa the depth needed to document the in  Horizon  ndicators (check he	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2	% 90 S4 - Sand	10YR esent □ ly Gleyed □ ly Redox	ation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6         N: Matrix	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C for Problem A16 - Coast S7 - Dark S	Location PL	(e.g. clay, sand, loam) clay loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H	Wetzel silty clay loa the depth needed to document the in  Horizon  ndicators (check he	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2     icators a	% 90 are not pre S4 - Sand S5 - Sand S6 - Stripp	10YR esent □ ly Gleyed □ ly Redox oed Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/6         Natrix	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C for Problen S7 - Dark S F12 - Iron-M	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2     icators a	% 90 ste not pressure stripp F1 - Loam	10YR esent □ ly Gleyed □ ly Redox oed Matrix ny Muck M	Redo Color (Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E  A3 - Black H A4 - Hydroge	Wetzel silty clay loa the depth needed to document the in  Horizon  ndicators (check he pipedon istic en Sulfide d Layers	am dicator or confirm  Color 10YR	m the absence of Matrix (Moist)  4/2     icators a	% 90 are not pre S4 - Sand S5 - Sand S6 - Stripp	10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)  4/6  ): Matrix ineral Matrix	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E  A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N	Wetzel silty clay loa the depth needed to document the in  Horizon  ndicators (check he pipedon istic en Sulfide d Layers	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2     icators a	% 90 S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam	De: C=Concentra  10YR	Redormand Color (Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E  A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2     icators a	% 90 S4 - Sand S5 - Sand S5 - Stripp F1 - Loam F2 - Loam F3 - Deple	10YR	Redormand Color (Moist)  4/6	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2     icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2     icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  Ox Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2      icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5   Indicators   Indicators  Indicators	Type C	Location PL	espresent, unless disturbed or problematic.
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2     icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  Ox Features  %  5  Indicators	Type C	Location PL	(e.g. clay, sand, loam) clay loam es urface
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  Restrictive Layer (If Observed)	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2      icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5   Indicators   Indicators  Indicators	Type C	Location PL	espresent, unless disturbed or problematic.
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2      icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5   Indicators   Indicators  Indicators	Type C	Location PL	espresent, unless disturbed or problematic.
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  Restrictive Layer (If Observed)	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2      icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5   Indicators   Indicators  Indicators	Type C	Location PL	espresent, unless disturbed or problematic.
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric  Restrictive Layer (If Observed)	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	Wetzel silty clay loa the depth needed to document the in  Horizon	am dicator or confirm  Color 10YR ere if indi	m the absence of Matrix (Moist)  4/2      icators a	% 90	Des C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/6	=Covered/Coated Sand Gra  OX Features  %  5   Indicators   Indicators  Indicators	Type C	Location PL	espresent, unless disturbed or problematic.



Project/Site: Wetland ID: Wetland 2 Marysville Station Expansion Project Sample Point: SP 4 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 1. Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: 2 (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. 0 x 1 = 10. FACW spp. 113 Total Cover = 0 x 2 =FAC spp. 0 x 3 =FACU spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 Fraxinus pennsylvanica 5 **FACW** x = 51. 2. 3. (B) --Total 113 (A) 4. --5. Prevalence Index = B/A = 2.000 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. ☐ Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 5 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Phalaris arundinacea 90 **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 4 Ν **FACW** Impatiens capensis present, unless disturbed or problematic. 3. Solidago gigantea **FACW** 10 Pilea pumila 2 Ν **FACW Definitions of Vegetation Strata:** 4. 2 5. Agrimonia parviflora Ν **FACW** 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 108 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation	AEP Ohio Nate Nolar Wetzel silty clay Terrace 2% drologic cond , Soil  , FINDINGS getation Pre	Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat sent?	40.3374 pical for	Investi Loc L this time y disturb	ed? ic? □ No	N Linear -83.427	IWI/WWI Classification: 481	Datum:  ☑ Yes □ nces present? N□ Hydric Soils I	No Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Upland Dir:  □ Yes ☑ No
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater M	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - True C1 - Hydre C3 - Oxidi C4 - Prese	er-Stained latic Fauna le Aquatic logen Sulfic logen Sulfic logen Sulfic logen Stain logen	Plants Plants de Odor espheres on Living Roots educed Iron eduction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seasor C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants c Position
Field Observat Surface Water Water Table Pr Saturation Pres Describe Record Remarks:	Present? esent? ent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No eam gauge, monitori	Depth: Depth: Depth: ng well, a		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? □	Yes ☑ No
Map Unit Name	:	Wetzel silty clay loa	am								
				m the absence o	of indicators.) (Typ	oe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra	ins; Location: PL=F	Pore Lining, M=Matrix)	
Тор	Bottom			Matrix				ox Features			Texture
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	16		10YR	3/2	100						silt loam
		<b></b>					<b></b>				
	Soil Field Ir						\ <u>-</u>	Indicators	for Problem	notic Scile <sup>1</sup>	
nkcs nydric	A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm Ni A11 - Deplete A12 - Thick I S1 - Sandy Ni	istic en Sulfide d Layers fluck ed Below Dark Surface Dark Surface			S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	y Gleyed I y Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	lineral Matrix K urface Surface		S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Prairie Redox urface Manganese Masse Shallow Dark Su ain in Remarks)	
Restrictive Layer				Dontile	NΙΛ					· · ·	
(If Observed)	Type:	NA		Depth:	NA			Hydric Soil I	resent?		Yes ☑ No
Remarks:											



Project/Site: Wetland ID: Wetland 2 Marysville Station Expansion Project Sample Point: SP 5 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. 2. --Number of Dominant Species that are OBL, FACW, or FAC: (A) 3. 4. (B) Total Number of Dominant Species Across All Strata: 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) ----7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 0 x 2 =FAC spp. 15 x 3 =FACU spp. 143 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =Ulmus americana 3 **FACW** UPL spp. 0 1. x = 52. 5 **FACW** Fraxinus pennsylvanica Ν Rubus allegheniensis 3. 50 **FACU** (B) Total 193 (A) Lonicera morrowii 4. 10 **FACU** 5 5. **FACW** Cornus amomum Ν Prevalence Index = B/A = *3.560* 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = 73 Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes Solidago canadensis 45 **FACU** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 15 Ν FAC Ambrosia trifida present, unless disturbed or problematic. 3. 5 **FACW** Agrimonia parviflora 4. Phalaris arundinacea 15 Ν **FACW Definitions of Vegetation Strata:** 2 5. Impatiens capensis Ν **FACW** Rubus allegheniensis 6 35 Υ **FACU** Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. Cirsium arvense 7. 3 Ν **FACU** 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 120 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** □ Yes ☑ No 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation	AEP Ohio Nate Nolar Blount silt loam Terrace 2% drologic cond , Soil  , Soil	end moraine, 2 to 4 percer  Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat	t slopes  40.3376 pical for nificantly	Investi Loc L this time y disturb	ed? ic? □ No	N Linear -83.426	IWI/WWI Classification:	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Non JD Dir:  □ Yes ☑ No	
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - True C1 - Hydre C3 - Oxidi C4 - Prese	er-Stained latic Fauna le Aquatic logen Sulfi logen Sulfi logen Sulfi logen Stain logen St	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
Field Observate Surface Water Water Table Pro Saturation Pres Describe Record Remarks:  SOILS	Present? esent? ent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No eam gauge, monitori	Depth: Depth: Depth:		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? □	Yes ☑ No
Map Unit Name	):	Blount silt loam, en	d morair	ne, 2 to 4	4 percent	slopes					
Profile Descrip	otion (Describe to	the depth needed to document the inc	dicator or confir	m the absence o	of indicators.) (Typ	oe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=	-Covered/Coated Sand Gra	ins; Location: PL=F	Pore Lining, M=Matrix)	
Тор	Bottom			Matrix				ox Features		_	Texture
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	10		10YR	4/2	100						silt loam
										1	
Restrictive Layer	A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	istic en Sulfide d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat			S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	y Gleyed y Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ineral Matrix k Irface Surface	Indicators of hydrophyt	A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	flanganese Masse Shallow Dark Suain in Remarks)	present, unless disturbed or problematic.
(If Observed)	Type:	Rock/Root		Depth:	10"			Hydric Soil I	Present?		Yes ☑ No
Remarks:											



Project/Site: Marysville Station Expansion Project Wetland ID: N/A Sample Point: SP 6 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Acer saccharum 20 Υ **FACU** 1. Catalpa bignonioides 2. 45 Number of Dominant Species that are OBL, FACW, or FAC: (A) **FACU** 5 3. **FACU** Prunus serotina Ν 4. (B) Total Number of Dominant Species Across All Strata: 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 70 x 2 =FAC spp. 5 x 3 =FACU spp. 175 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =700 Lonicera maackii 25 **UPL** UPL spp. 25 1. x = 52. Ribes americanum 10 **FACW** Ν Rosa multiflora 3. 45 **FACU** 870 Total **220** (A) (B) 4. Maclura pomifera 10 **FACU** 5. Prevalence Index = B/A = 3.955 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = 90 Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes Solidago canadensis 10 **FACU** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Parthenocissus quinquefolia 40 Ν **FACU** present, unless disturbed or problematic. 3. 3 **FACW** Elymus virginicus 4. 5 Ν FAC **Definitions of Vegetation Strata:** Carex sp. 2 5. Euthamia graminifolia Ν **FACW** 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 60 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** □ Yes ☑ No 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



										I =	
Project/Site:	-	Station Expansion F	-				Stantec Project #:	193705599		Date:	08/29/17
Applicant:		Fransmission Comp	any, Inc							County:	Union
Investigator #1:	Nate Nolar	d		Invest	igator #2:					State:	Ohio
Soil Unit:	Wetzel silty clay	loam					IWI/WWI Classification:	NONE		Wetland ID:	Wetland 3
Landform:	Floodplain				cal Relief:			_		Sample Point:	
Slope (%):	2%	Latitude:			ongitude:				WGS84	Community ID:	PEM
		ditions on the site ty	•			(If no, expl		☑ Yes □	No	Section:	
		or Hydrology □ sig					Are normal circumstar  ☑ Yes	nces present? NŪ	1	Township:	
		or Hydrology □ nat	urally pr	oblemat	ic?			Range:	Dir:		
SUMMARY OF											
Hydrophytic Ve	•			Yes				Hydric Soils			
Wetland Hydro	logy Present	?		✓ Yes	s □ No			Is This Samp	ling Point	Within A Wetla	and? <b>☑ Yes ■ N</b>
Remarks:											
HYDROLOGY											
Wetland Hydr	ology Indic	ators (Check here i	f indicate	ors are r	not preser	nt□ ):					
Primary	•	(			•	,			Secondary:		
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves			B6 - Surface Sc	oil Cracks
	A2 - High Wa				B13 - Aqu					B10 - Drainage	
	A3 - Saturation				B14 - Tru					C2 - Dry-Seaso C8 - Crayfish B	
	B2 - Sedime				C1 - Hydr C3 - Oxid		ospheres on Living Roots			•	urrows Visible on Aerial Image
l	B3 - Drift De	•					educed Iron				Stressed Plants
	B4 - Algal Ma				C6 - Rece	ent Iron Re	eduction in Tilled Soils		✓	D2 - Geomorph	ic Position
	B5 - Iron Dep				C7 - Thin				✓	D5 - FAC-Neutr	al Test
		on Visible on Aerial Ima	-		D9 - Gau	_					
	B8 - Sparsely	/ Vegetated Concave S	surrace		Other (Ex	piain in Re	emarks)				
Field Observed	410.00										
Field Observat			5 4		(! \						
Surface Water		□ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pr	resent? ☑	Yes □ No
Water Table Pr		□ Yes ☑ No	Depth:		(in.)			<b>,</b>	3,		
Saturation Pres	sent?	□ Yes ☑ No	Depth:		(in.)						
Describe Record	ded Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:											
SOILS											
Map Unit Name	<b>9</b> :	Wetzel silty clay loa	am								
				n the absence	of indicators.) (Tv	pe: C=Concentr	ation, D=Depletion, RM=Reduced Matrix, CS=C	Covered/Coated Sand Gra	ins: Location: PL=F	Pore Lining, M=Matrix)	
Тор	Bottom			Matrix				x Features			Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loa
0	3		10YR	4/2	100						clay loam
3	10		10YR	4/2	95	10YR	5/8	5	С	M	clay loam
10	16		10TR	4/2	85	10TR	5/8	15	C	M	
		<u></u>									clay loam
							·				
1		ndicators (check he	ere if indi	cators a	•		,			natic Soils 1	
	A1- Histosol	ninodon			S4 - Sand		Matrix			Prairie Redox	
	A2 - Histic Ep A3 - Black Hi				S5 - Sand S6 - Strip	•	,		S7 - Dark S	urrace langanese Mass	24
ı	TO DIACK III				F1 - Loan					Shallow Dark S	
	A4 - Hvdroae				F2 - Loan	•				ain in Remarks)	
	A4 - Hydroge A5 - Stratified					-			· '	,	
0		d Layers		V	F3 - Deple	eteu Matri	^				
0	A5 - Stratified A10 - 2 cm M A11 - Deplete	d Layers luck ed Below Dark Surface			F6 - Redo	οx Dark Su	ırface				
	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I	d Layers luck ed Below Dark Surface Dark Surface			F6 - Redo F7 - Deple	ox Dark Su eted Dark	ırface Surface				
	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral			F6 - Redo	ox Dark Su eted Dark	ırface Surface	1 Indicators of text	io vozatalica sa l	cotland budgets	o procent unless disturbed
	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M	d Layers luck ed Below Dark Surface Dark Surface			F6 - Redo F7 - Deple	ox Dark Su eted Dark	ırface Surface				e present, unless disturbed or proble
	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat			F6 - Redo F7 - Deple	ox Dark Su eted Dark	ırface Surface	<sup>1</sup> Indicators of hydrophyl			e present, unless disturbed or proble
Restrictive Layer (If Observed)	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat		<ul><li>☑</li><li>□</li><li>□</li></ul>	F6 - Redo F7 - Deple F8 - Redo	ox Dark Su eted Dark	ırface Surface				·
Restrictive Layer	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat		<ul><li>☑</li><li>□</li><li>□</li></ul>	F6 - Redo F7 - Deple F8 - Redo	ox Dark Su eted Dark	ırface Surface				·
Restrictive Layer (If Observed)	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat		<ul><li>☑</li><li>□</li><li>□</li></ul>	F6 - Redo F7 - Deple F8 - Redo	ox Dark Su eted Dark	ırface Surface				·
Restrictive Layer (If Observed)	A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers fluck ed Below Dark Surface Dark Surface fluck Mineral ucky Peat or Peat		<ul><li>☑</li><li>□</li><li>□</li></ul>	F6 - Redo F7 - Deple F8 - Redo	ox Dark Su eted Dark	ırface Surface				·



Project/Site: Wetland ID: Wetland 3 Sample Point: SP 7 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) Species Name **Dominance Test Worksheet** Ind.Status % Cover Dominant Populus deltoides Υ FAC 1. 10 Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: **3** (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B) 6. --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. \_\_\_\_ x 1 = 10. FACW spp. 115 Total Cover = 10 x 2 =FAC spp. 10 x 3 =FACU spp. 10 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 Rosa multiflora 10 **FACU** 1. x = 52. 3. --Total 138 (A) (B) 4. --5. Prevalence Index = B/A = 2.196 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Phalaris arundinacea 100 **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Typha latifolia 3 Ν **OBL** present, unless disturbed or problematic. 3. **FACW** Impatiens capensis 15 **Definitions of Vegetation Strata:** 4. --5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 118 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



D : 1/0:1											
Project/Site:	Marysville S	Station Expansion F	Project				Stantec Project #:	193705599		Date:	08/29/17
Applicant:	AEP Ohio	Fransmission Comp	oany, Inc	•						County:	Union
Investigator #1		•			igator #2:	Kate Bo	mar			State:	Ohio
Soil Unit:	Wetzel silty clay			1117000	igato: " <u>L</u> .		WI/WWI Classification:	NONE			Wetland 3
		loan		اما	al Daliati		ivvi/vv vvi Classification.	NONL			
Landform:	Side slope	1			al Relief:					Sample Point:	
Slope (%):	2%	Latitude:			ongitude:				WGS84	Community ID:	Upland
Are climatic/hy	drologic cond	ditions on the site ty	pical for	this time	e of year?	(If no, explain	ain in remarks)	☑ Yes □	No	Section:	
Are Vegetation	□ . Soil □ .	or Hydrology □ sig	ınificantly	v disturb	ed?		Are normal circumstar	nces present?	?	Township:	
<u> </u>		or Hydrology □ nat	•	•				NŪ		Range:	Dir:
		or riyarology = ha	tarany pr	obiciliat	10:		163	IAA		rtange.	Dii.
SUMMARY OF											
Hydrophytic Ve	•			□ Yes	s ☑ No			Hydric Soils	Present?		□ Yes ☑ No
Wetland Hydro	logy Present	?		□ Yes	s ☑ No			Is This Samp	oling Point	Within A Wetla	and? ■ Yes ⊠ No
Remarks:									<u> </u>		
HYDROLOGY											
Wetland Hydr	rology Indica	ators (Check here i	if indicate	ors are r	not preser	nt 🖂 🕽 🕶					
Primary	•	ators (Oncor norch	ii iiidicat	ors are r	iot preser	/•			Secondary:		
	<u>v.</u> A1 - Surface	Mator			B9 - Wate	vr_Stainad	Logyos			B6 - Surface So	ail Cracks
	A2 - High Wa										
	A3 - Saturation				B13 - Aqu					B10 - Drainage	
					B14 - True					C2 - Dry-Season	
	B1 - Water M				C1 - Hydr					C8 - Crayfish Bu	
	B2 - Sedimer	•					spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift Dep						educed Iron			D1 - Stunted or	
	B4 - Algal Ma						duction in Tilled Soils			D2 - Geomorphi	
	B5 - Iron Dep	osits			C7 - Thin	Muck Sur	ace			D5 - FAC-Neutr	al Test
	B7 - Inundation	on Visible on Aerial Ima	agery		D9 - Gaug	ge or Well	Data				
	B8 - Sparsely	Vegetated Concave S	Surface		Other (Ex	plain in Re	marks)				
Field Observa	tional										
Surface Water	Present?	□ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Di	rocont2 □	Yes ☑ No
Water Table Pr	resent?	□ Yes ☑ No	Depth:		(in.)			welland ny	urology Fi	esent:	Yes ☑ No
Saturation Pres		□ Yes ☑ No	Depth:		(in.)						
Saturation Fies	36111:	L 163 L 140	Бериі.		(111.)						
Describe Record	ded Data (stre	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ctions), if available:		N/A		
	`	<u> </u>			, ,	<u>'</u>	,,				
Remarks:											
SOILS											
	Θ.	Wetzel silty clay loa	am								
Map Unit Name		Wetzel silty clay loa						2 1/2 1 12 12	5. 5		
Profile Descri	ption (Describe to					pe: C=Concentra	tion, D=Depletion, RM=Reduced Matrix, CS=0		ains; Location: PL=F	Pore Lining, M=Matrix)	
				m the absence o		pe: C=Concentra		Covered/Coated Sand Gra	ains; Location: PL=F	Pore Lining, M=Matrix)	Texture
Profile Descri	ption (Describe to Bottom		dicator or confir	Matrix		pe: C=Concentra	Redo	x Features		_	
Profile Descrip Top Depth	Ption (Describe to Bottom Depth	the depth needed to document the in	color	Matrix (Moist)	%			x Features %	Type	Location	(e.g. clay, sand, loam)
Profile Descri	ption (Describe to Bottom	the depth needed to document the in	dicator or confir	Matrix		pe: C=Concentra	Redo	x Features		_	
Profile Descrip Top Depth	Ption (Describe to Bottom Depth	the depth needed to document the in	color	Matrix (Moist)	%		Redo	x Features %	Type	Location	(e.g. clay, sand, loam)
Top Depth	Bottom Depth 10	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 4/3	% 100		Color (Moist)	x Features % 	Type 	Location 	(e.g. clay, sand, loam)
Top Depth	Ption (Describe to  Bottom  Depth  10	the depth needed to document the in  Horizon	Color 10YR 	Matrix (Moist) 4/3	% 100 		Color (Moist)	x Features %  	Type   	Location  	(e.g. clay, sand, loam) silt loam
Profile Descrip	Bottom Depth 10	Horizon	Color 10YR	Matrix (Moist)  4/3	% 100 		Color (Moist)	% Features	Type   	Location	(e.g. clay, sand, loam) silt loam
Top Depth	Ption (Describe to  Bottom  Depth  10	the depth needed to document the in  Horizon	Color 10YR 	Matrix (Moist) 4/3	% 100 		Color (Moist)	x Features %  	Type   	Location  	(e.g. clay, sand, loam) silt loam
Profile Descrip	Ption (Describe to  Bottom  Depth  10	Horizon	Color 10YR	Matrix (Moist)  4/3	% 100  		Color (Moist)	x Features %	Type   	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip	Ption (Describe to  Bottom Depth 10	Horizon	Color 10YR	Matrix (Moist)  4/3	% 100    	  	Redo	x Features	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descri	Ption (Describe to  Bottom Depth 10	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist)  4/3	% 100    	  	Redo	x Features	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip	Ption (Describe to  Bottom Depth 10	Horizon	Color 10YR	Matrix (Moist)  4/3	% 100    	  	Redo	x Features	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip	ption (Describe to  Bottom Depth 10	the depth needed to document the in	Color 10YR	Matrix (Moist) 4/3	% 100	   	Redo Color (Moist)	x Features	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In	the depth needed to document the in  Horizon	Color 10YR	Matrix (Moist) 4/3	% 100 are not pre	     esent 🗹	Redo Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip	Bottom Depth 10 Soil Field In	Horizon	Color 10YR	Matrix (Moist)  4/3     icators a	% 100 sre not pre	     esent ☑ ly Gleyed	Redo Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep	Horizon	Color 10YR	Matrix (Moist)  4/3     icators a	% 100 sre not pre	     esent ☑ ly Gleyed	Redo Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi	Horizon	Color 10YR	Matrix (Moist)  4/3     icators a	% 100 stre not pre S4 - Sand S5 - Sand S6 - Strip	     esent ☑ ly Gleyed ly Redox oed Matrix	Color (Moist) Natrix	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge	Horizon	Color 10YR	Matrix (Moist)  4/3     icators a	% 100 S4 - Sand S5 - Sand S6 - Stripp F1 - Loam	     esent ☑ ly Gleyed ly Redox ped Matrix ny Muck M	Redo Color (Moist) ): Matrix	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified	Horizon	Color 10YR	Matrix (Moist)  4/3     icators a	% 100 S4 - Sand S5 - Sand S5 - Strip F1 - Loam F2 - Loam	     esent ☑ ly Gleyed ly Redox ped Matrix ny Muck M	Color (Moist) Natrix	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100 S4 - Sand S5 - Sand S5 - Stripp F1 - Loam F2 - Loam F3 - Deple	       ly Gleyed ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix	Color (Moist) Natrix ineral Matrix	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100 S4 - Sand S5 - Sand S5 - Stripp F1 - Loam F2 - Loam F3 - Deple		Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	x Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam es
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	ex Features %	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	ex Features %	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Profile Descri Top Depth  O NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descri Top Depth  0 NRCS Hydric	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descri	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descri	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.
Profile Descri	Bottom Depth 10 Soil Field In A1- Histosol A2 - Histic En A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR ere if ind	Matrix (Moist)  4/3     icators a	% 100		Color (Moist)  ): Matrix ineral Matrix c rface Surface Surface	sx Features % Indicators  Indicators  Indicators of hydrophy	Type	Location	espresent, unless disturbed or problematic.



Project/Site: Wetland ID: Wetland 3 Marysville Station Expansion Project Sample Point: SP 8 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 1. Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: OBL spp. 0 x 1 = 10. FACW spp. 0 Total Cover = 0 x 2 =FAC spp. 0 x 3 =FACU spp. 0
UPL spp. 90 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =x = 51. 2. 3. Total 90 (A) 450 4. 5. Prevalence Index = B/A = *5.000* 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes 90 **UPL** 1. Glycine max \* Indicators of hydric soil and wetland hydrology must be 2. ---present, unless disturbed or problematic. 3. **Definitions of Vegetation Strata:** 4. --5. 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 90 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** □ Yes ☑ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation	AEP Ohio Nate Nolar Blount silt loam Depression 0% drologic cond , Soil  , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	end moraine, 2 to 4 percern Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat	pical for	Investi Loc L this time disturb	ed? ic?	Concave (If no, expla	IWI/WWI Classification: e	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	PEM Dir:  ✓ Yes □ No	
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater M	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydr C3 - Oxid C4 - Pres	er-Stained latic Fauna e Aquatic logen Sulficitized Rhizo ence of Re ent Iron Re Muck Surf ge or Well	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
Remarks:	Present? esent? ent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No eam gauge, monitori	Depth: Depth: Depth: ng well, a		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pi	resent? ☑	Yes □ No
SOILS		Diametralities and		0.15	1						
Map Unit Name		Blount silt loam, en					ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Costed Cond Cro	ing, Lagation, DL F	Dava Lining M. Matrix	
Top	Bottom	the departneeded to document the inc	dicator or comm	Matrix		pe. C=Concentra		ox Features	iiris, Location. r L=r	ore Liming, M-Matrix)	Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
Ö	7		10YR	4/2	90	10YR	3/4	10	Č	M	silt loam
7	16		10YR	5/2	95	10YR	5/6	5	С	M	silt loam
							-				
		-									
NRCS Hydric	A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	istic en Sulfide d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat			S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	ly Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ineral Matrix k Irface Surface	Indicators of hydrophyt	A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Manganese Masse Shallow Dark Suain in Remarks)	e present, unless disturbed or problematic.
(If Observed)	Type:			Depth:				Hydric Soil I	Present?	V	Yes □ No
Remarks:											



Project/Site: Wetland ID: Wetland 4 Marysville Station Expansion Project Sample Point: SP 9 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Populus deltoides Υ FAC 1. 15 Number of Dominant Species that are OBL, FACW, or FAC: 4 (A) 2. Fraxinus pennsylvanica 2 Ν **FACW** 3. 4. Total Number of Dominant Species Across All Strata: (B) --5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. --7. **Prevalence Index Worksheet** 8. 9. Total % Cover of: --Multiply by: --OBL spp. \_\_\_\_ x 1 = 10. FACW spp. 109 Total Cover = 17 x 2 =FAC spp. 15 x 3 =FACU spp. 7 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 3 **OBL** 1. Salix nigra x = 52. 5 **FACW** Ulmus americana Quercus palustris 3. 2 **FACW** (B) Total 134 (A) 4. Rubus allegheniensis 2 Ν **FACU** 5. Prevalence Index = B/A = 2.194 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 12 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Phalaris arundinacea 100 **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 5 Ν **FACU** Solidago canadensis present, unless disturbed or problematic. 3. **Definitions of Vegetation Strata:** 4. ----5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 105 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation <sup>D</sup>	AEP Ohio Nate Nolar Blount silt loam Flat 0% drologic cond , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	end moraine, 2 to 4 percer  Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat sent?	t slopes  40.3357 pical for nificantly	Investi Loc L this time y disturb	ed? ic? □ No	N Linear -83.433	IWI/WWI Classification: 864	Datum:  ☑ Yes □ nces present? N□ Hydric Soils I	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Upland Dir:  □ Yes ☑ No
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater M	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - True C1 - Hydre C3 - Oxidi C4 - Prese	er-Stained latic Fauna e Aquatic ogen Sulfi ized Rhizo ence of Re ent Iron Re Muck Surf ge or Well	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seasor C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants c Position
Remarks:	Present? esent? ent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No eam gauge, monitorii	Depth: Depth: Depth: ng well, a		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? □	Yes ☑ No
SOILS			1	0.1							
Map Unit Name		Blount silt loam, en									
Top	Bottom	the depth needed to document the inc	licator or confirm	Matrix		be: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=0	ox Features	ins; Location: PL=F	Pore Lining, M=Matrix)	Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	10		10YR	4/3	100						silt loam
											-
											-
							-				1
		-					-				1
		-					-				-
Restrictive Layer	A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Me	istic en Sulfide d Layers fluck ed Below Dark Surface Dark Surface		icators a	re not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	ly Gleyed ly Redox ned Matrix ny Muck M ny Gleyed eted Matrix nx Dark Su eted Dark	ineral Matrix k Irface Surface		S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Prairie Redox urface Manganese Masse Shallow Dark Su ain in Remarks)	
(If Observed)	туре.	an into/compaction		Dopuii.	10			Try drie Gon i	1036III :	_	100 - 110
Remarks:											



**Additional Remarks:** 

## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Wetland ID: Wetland 4 Sample Point: SP 10 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 1. Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: -x 1 = 10. OBL spp. 0 FACW spp. 0 Total Cover = 0 x 2 =FAC spp. 0 x 3 =FACU spp. 0
UPL spp. 102 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =x = 51. 2. 3. (B) Total 102 (A) 510 4. 5. Prevalence Index = B/A = *5.000* 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes Glycine max 100 **UPL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 2 Ν **UPL** Conyza canadensis present, unless disturbed or problematic. 3. **Definitions of Vegetation Strata:** 4. --5. 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 102 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** □ Yes ☑ No 3. 4. 5. --Total Cover = 0 Remarks:



Are Vegetation	AEP Ohio Nate Nolar Blount silt loam Flat 1% Irologic cond , Soil  , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	end moraine, 0 to 2 percer  Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat sent?	t slopes  40.3296 pical for nificantly	Investi Loc L this time disturb	ed? ic?	Linear -83.4362 (If no, expla	IWI/WWI Classification: 242	Datum:  ☑ Yes □ nces present? N□ Hydric Soils I	Present?	County: State: Wetland ID: Sample Point: Community ID: Section: Township:	PFO Dir: No
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water M B2 - Sedimen B3 - Drift Dep B4 - Algal Ma B5 - Iron Dep B7 - Inundation	ater Table on larks ot Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - Truc C1 - Hydr C3 - Oxidi C4 - Pres	er-Stained latic Fauna e Aquatic logen Sulficitized Rhizo ence of Re ent Iron Re Muck Surf ge or Well	Plants Plants de Odor espheres on Living Roots educed Iron eduction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seasor C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants c Position
Field Observat Surface Water Water Table Pre Saturation Pres Describe Record Remarks:	Present? esent? ent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No eam gauge, monitori	Depth: Depth: Depth: ng well, a		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? ☑	Yes □ No
SOILS											
Map Unit Name	:	Blount silt loam, en	d morair	ne, 0 to 2	2 percent	slopes					
Profile Descrip	tion (Describe to	the depth needed to document the inc	dicator or confirm	n the absence o	of indicators.) (Ty	pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ins; Location: PL=P	ore Lining, M=Matrix)	
Тор	Bottom			Matrix	1			ox Features			Texture
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	4		10YR	4/2	90	10YR	4/6	10	C	M	silt loam
7	7		10YR	5/2	90	10YR	4/6	10	<u>C</u>	M	silty clay loam
	16		10YR	5/1	90	10YR	5/8	10	С	M	silty clay
		<del></del>									
		<del></del>									
NRCS Hvdric	Soil Field Ir	ndicators (check he	re if ind	icators a	re not pre	esent □	):	Indicators	for Problen	natic Soils <sup>1</sup>	
	A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	pipedon stic en Sulfide d Layers fuck ed Below Dark Surface Dark Surface			S4 - Sand S5 - Sand S6 - Strip F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	ly Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	lineral Matrix x urface Surface		A16 - Coast S7 - Dark S F12 - Iron-W TF12 - Very Other (Expla	Prairie Redox urface langanese Masse Shallow Dark Su ain in Remarks)	
Restrictive Layer	Type:			Depth:				Hydric Soil I	-	· · · · · ·	Yes □ No
(If Observed)	туре.							yano oon i	. 556/101	_	
Remarks:											



Project/Site: Wetland ID: Wetland 5 Marysville Station Expansion Project Sample Point: SP 11 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Acer rubrum Υ FAC 1. 65 2. 30 Number of Dominant Species that are OBL, FACW, or FAC: 6 (A) Ulmus americana **FACW** 3. 4. (B) Total Number of Dominant Species Across All Strata: --5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B) ----7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 95 x 2 =FAC spp. 75 x 3 =225 FACU spp. 8 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =32 UPL spp. 40 Ulmus americana 15 **FACW** 1. x = 5200 2. Fraxinus pennsylvanica 10 **FACW** 3. 5 Rosa carolina **FACU** Total 215 (A) 606 (B) 4. --5. Prevalence Index = B/A = --2.819 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. --Yes □ No Dominance Test is > 50% Total Cover = 30 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Boehmeria cylindrica 20 **UPL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Cinna arundinacea 20 Υ **UPL** present, unless disturbed or problematic. 3. 5 **FAC** Toxicodendron radicans Ν 4. 5 Ν **OBL Definitions of Vegetation Strata:** Carex squarrosa 5 5. Ν FAC Symphyotrichum lanceolatum Υ 6 15 OBL Glyceria striata Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Carex stricta 15 **OBL** Agrimonia parviflora 2 **FACW** 8. Ν Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. 3 Ν **FACU** Rosa carolina ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 90 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** ✓ Yes □ No 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation	AEP Ohio Nate Nolar Blount silt loam Side slope 2% Irologic cond , Soil  , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	end moraine, 0 to 2 percer Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat sent?	t slopes  40.3297 pical for nificantly	Invest Loc L this time disturb	ed? ic? s ☑ No	Convex -83.4360 (If no, expla	IWI/WWI Classification:	Datum:  ☑ Yes □ nces present? N□ Hydric Soils	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Upland Dir:  □ Yes ☑ No
HYDROLOGY Wetland Hydro	A1 - Surface		f indicato	ors are r	B9 - Wate	er-Stained			Secondary:	B6 - Surface So	
0 0 0 0 0 0		on farks nt Deposits posits at or Crust	0 ,		C4 - Pres	e Aquatic logen Sulficited Rhizo ence of Reent Iron Reent Iron Reent Gurd	Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu C9 - Saturation D1 - Stunted or D2 - Geomorph D5 - FAC-Neutr	n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
Field Observater Surface Water Water Table Pro Saturation Pres	Present? esent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No	Depth: Depth: Depth:		(in.) (in.) (in.)			Wetland Hyd	drology Pr	resent? □	Yes ☑ No
	ed Data (str	eam gauge, monitorii	ng well, a	erial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:											
SOILS											
Map Unit Name		Blount silt loam, en		•			office D. Doubelles DM Deduced Marks 00 of	0	in a Landina DL 5	News Hele of M. Martels	
Top	Bottom	the depth needed to document the inc	dicator or comm	Matrix		pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=0	ox Features	lins; Location: PL=P	rore Lining, M=Matrix)	Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	4		10YR	5/3	100						silty clay loam
4	10		10YR	5/2	50						clay loam
			10YR	5/4	50						clay loam
10	16		10YR	6/3	95	10YR	6/8	5	С	M	silty clay
NRCS Hydric	A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N	istic en Sulfide d Layers fluck ed Below Dark Surface Dark Surface		cators a	S4 - Sand S5 - Sand	dy Gleyed I dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	Matrix ineral Matrix c rface Surface		A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	langanese Mass Shallow Dark Stain in Remarks)	
Restrictive Layer	Type:			Depth:				Hydric Soil	Present?		Yes ☑ No
(If Observed)	. , , , ,			- opon				,			
Remarks:											



Remarks:

## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Wetland ID: Wetland 5 Sample Point: SP 12 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Acer saccharum 90 Υ **FACU** 1. 2. Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) ------3. --4. (B) Total Number of Dominant Species Across All Strata: 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 90 x 2 =FAC spp. 31 x 3 =FACU spp. 180 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =720 Ulmus americana 25 **FACW** UPL spp. 0 1. x = 52. Acer saccharum 45 **FACU** Rosa multiflora 3. 5 **FACU** Total 246 (A) 883 (B) 4. 5. Prevalence Index = B/A = 3.589 --6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = 75 Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes Rubus allegheniensis 20 **FACU** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 15 Υ FAC Viola sororia present, unless disturbed or problematic. 3. 10 **FACW** Agrimonia parviflora Persicaria virginiana 3 Ν **FAC Definitions of Vegetation Strata:** 4. 5. Toxicodendron radicans 10 Ν FAC 6 20 Υ **FACU** Parthenocissus quinquefolia Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Symphyotrichum sp 3 Ν FAC 8. --Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 81 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** □ Yes ☑ No 4. 5. --Total Cover = 0

Additional Remarks:	
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Project/Site: Applicant:	-	Station Expansion F Fransmission Comp	-				Stantec Project #:	193705599		Date: County:	08/30/17 Union
Investigator #1: Soil Unit:			-t alamaa	Invest	igator #2:		mar IWI/WWI Classification:	DEO1A		State: Wetland ID:	Ohio Wetland 5
Landform:	Depression	, end moraine, 0 to 2 percer <b>)</b>	it siopes	Loc	cal Relief:			PFOIA		Sample Point:	
Slope (%):	1%	Latitude:			ongitude:				WGS84	Community ID:	
		ditions on the site ty	-			(If no, expl		✓ Yes □	No	Section:	
•		or Hydrology □   sig or Hydrology □   nat	•				Are normal circumstar  ☑ Yes	nces present <i>:</i> N⊎		Township: Range:	Dir:
SUMMARY OF		or right oragy — man					100	110		1 (3.1.90)	J
Hydrophytic Ve	•			☑ Yes				Hydric Soils			
Wetland Hydrol Remarks:	logy Present	?		☑ Yes	s □ No			Is This Samp	ling Point	Within A Wetla	and? <b>☑ Yes ■ No</b>
HYDROLOGY Wetland Hydr	ology Indic	ators (Check here i	f indicate	ore are r	not preser	o+□ \•					
Primary	•	ators (Check here i	illulcati	ois ale i	ioi presei	ILU ).			Secondary:		
	A1 - Surface			V	B9 - Wate					B6 - Surface Sc	
	A2 - High Wa A3 - Saturation				B13 - Aqu B14 - Tru					B10 - Drainage C2 - Dry-Seaso	
	B1 - Water M				C1 - Hydr	ogen Sulfi	de Odor			C8 - Crayfish B	urrows
	B2 - Sedimer B3 - Drift Der	•					spheres on Living Roots educed Iron				Visible on Aerial Imagery Stressed Plants
_	B4 - Algal Ma	at or Crust					eduction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Der B7 - Inundati	oosits on Visible on Aerial Ima	agerv		C7 - Thin D9 - Gau				☑	D5 - FAC-Neutr	al lest
☑		Vegetated Concave S	0 ,			•					
Field Observat	tione:										
Surface Water		□ Yes ☑ No	Depth:		(in.)			187 (1 111			V - N
Water Table Pr		□ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes □ No
Saturation Pres	sent?	□ Yes ☑ No	Depth:		(in.)						
Describe Record	ded Data (str	eam gauge, monitori	ng well, a	aerial pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:											
SOILS											
Map Unit Name	e:	Blount silt loam, en	d morair	ne, 0 to 2	2 percent	slopes					
		the depth needed to document the in	dicator or confirm			pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=		ins; Location: PL=P	ore Lining, M=Matrix)	_
Top	Bottom	l la deserva	0.1	Matrix	_			x Features	T	Lasses	Texture
Depth 0	Depth 3	Horizon 	10YR	(Moist) 5/1	90	10YR	Color (Moist)  5/8	% 10	Type C	Location M	(e.g. clay, sand, loam)
3	16		10YR	4/1	85	10YR	5/8	15	C	M	clay
NRCS Hydric	Soil Field Ir	ndicators (check he	ere if ind	icators a	are not pre	esent □	):	Indicators	for Problen	natic Soils <sup>1</sup>	<u> </u>
	A1- Histosol				S4 - Sand		Matrix			Prairie Redox	
	A2 - Histic E <sub>l</sub>				S5 - Sand S6 - Strip	,			S7 - Dark St	urtace langanese Mass	es
	A3 - Black H			_	F1 - Loan	ny Muck M	lineral		TF12 - Very	Shallow Dark St	
	A3 - Black H A4 - Hydroge			ᆜ					Otl / l-	in in Romarke)	
	A4 - Hydroge A5 - Stratifie	d Layers			F2 - Loam	-		Ш	Other (Expla	ani in Nemarks)	
	A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete	d Layers luck ed Below Dark Surface			F3 - Deple F6 - Redo	eted Matri x Dark Su	x ırface	П	Other (Expia	an in Nemarks)	
	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I	d Layers fluck ed Below Dark Surface Dark Surface			F3 - Deple F6 - Redo F7 - Deple	eted Matri ox Dark Su eted Dark	x ırface Surface	Ц	Otner (Expia	an in ivernarks)	
0	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M	d Layers fluck ed Below Dark Surface Dark Surface			F3 - Deple F6 - Redo	eted Matri ox Dark Su eted Dark	x ırface Surface				e present, unless disturbed or problematic.
Restrictive Layer	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M	d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat			F3 - Deple F6 - Redo F7 - Deple	eted Matri ox Dark Su eted Dark	x ırface Surface		ic vegetation and w	vetland hydrology must be	e present, unless disturbed or problematic.  Yes □ No
Restrictive Layer (If Observed)	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat		□ □	F3 - Deple F6 - Redo F7 - Deple F8 - Redo	eted Matri ox Dark Su eted Dark	x ırface Surface	<sup>1</sup> Indicators of hydrophy	ic vegetation and w	vetland hydrology must be	
Restrictive Layer	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat		□ □	F3 - Deple F6 - Redo F7 - Deple F8 - Redo	eted Matri ox Dark Su eted Dark	x ırface Surface	<sup>1</sup> Indicators of hydrophy	ic vegetation and w	vetland hydrology must be	
Restrictive Layer (If Observed)	A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Mu	d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat		□ □	F3 - Deple F6 - Redo F7 - Deple F8 - Redo	eted Matri ox Dark Su eted Dark	x ırface Surface	<sup>1</sup> Indicators of hydrophy	ic vegetation and w	vetland hydrology must be	



Project/Site: Wetland ID: Wetland 5 Sample Point: SP 13 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant FAC 1. Quercus macrocarpa 10 Ν Number of Dominant Species that are OBL, FACW, or FAC: 6 (A) 2. Quercus palustris 15 **FACW** 3. Acer saccharinum 35 **FACW** 4. (B) Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. 75 Total Cover = 60 x 2 =FAC spp. 20 x 3 =FACU spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 Quercus macrocarpa 10 **FAC** 1. x = 52. 10 **FACW** Ulmus americana 3. Total 128 (A) 243 (B) 4. --5. Prevalence Index = B/A = 1.898 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 20 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Boehmeria cylindrica 20 **OBL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 15 Υ **FACW** Cinna arundinacea present, unless disturbed or problematic. 3. **OBL** Carex lupulina 10 Ν 3 **Definitions of Vegetation Strata:** 4. Glyceria striata Ν **OBL** 5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at -breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 48 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks: Additional Damarka

Additional Remarks:			



Are Vegetation Are Vegetation SUMMARY OF Hydrophytic Veg Wetland Hydrol Remarks:	AEP Ohio Nate Nolan Blount silt loam, Depression 0% drologic cond , Soil , o , Soil , o FINDINGS getation Pres	end moraine, 0 to 2 percent Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat	pany, Income slopes  rpical for inificantly	Investi Loc Loc this time y disturbe	ed? ic?	Concave	WI/WWI Classification:	Datum:  ☑ Yes □ nces present? N□ Hydric Soils I	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	PUB Dir: No
Primary:	A1 - Surface A2 - High Wa A3 - Saturatio B1 - Water M B2 - Sedimer B3 - Drift Dep B4 - Algal Ma B5 - Iron Dep B7 - Inundatio B8 - Sparsely	ater Table on Iarks ot Deposits posits at or Crust	agery		B9 - Wate B13 - Aqu B14 - Truc C1 - Hydr C3 - Oxidi C4 - Pres	er-Stained latic Fauna e Aquatic logen Sulficited Rhizo ence of Reent Iron Re Muck Surf	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils ace Data		Secondary:	B6 - Surface So B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu C9 - Saturation	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
Field Observat Surface Water Water Table Pr Saturation Pres	Present? esent? ent?	☑ Yes □ No □ Yes ☑ No ☑ Yes □ No	Depth: Depth:	0	(in.) (in.) (in.)	oue inenc	ctions) if available:	Wetland Hyd	drology Pr	resent? ☑	Yes □ No
Remarks:	ed Data (Site	eam gauge, monitori	ig weii, a	<u>aenai prio</u>	nos, previ	ous mspe	ctions), ii available.		IV/A		
SOILS											
Map Unit Name	):	Blount silt loam, en	d morair	ne, 0 to 2	2 percent	slopes					
:	1!								ing: Location: DL_D	Pore Lining, M=Matrix)	
		the depth needed to document the in-	dicator or confire			pe: C=Concentra	tion, D=Depletion, RM=Reduced Matrix, CS=		iiis, Location. PL=P	5.5 <u>2</u> 9,	_
Тор	Bottom			Matrix		pe: C=Concentra	Redo	ox Features		<u> </u>	Texture
Top Depth	Bottom Depth	Horizon	Color	Matrix (Moist)	%		Color (Moist)	ox Features %	Туре	Location	(e.g. clay, sand, loam)
Top Depth 0	Bottom Depth 3	Horizon 	Color 10YR	Matrix (Moist) 4/1	% 85	10YR	Color (Moist)  4/6	% Teatures	Type C	Location M	(e.g. clay, sand, loam) silty clay
Top Depth 0 3	Bottom Depth 3 16	Horizon  	Color 10YR 10YR	Matrix (Moist) 4/1 5/1	% 85 80	10YR 10YR	Color (Moist) 4/6 5/8	% 15 20	Type C C	Location M M	(e.g. clay, sand, loam) silty clay clay
Top Depth 0 3	Bottom Depth 3 16	Horizon	Color 10YR 10YR	Matrix (Moist) 4/1	% 85	10YR 10YR	Color (Moist)  4/6  5/8	% 15 20	Type C C	Location M M	(e.g. clay, sand, loam) silty clay clay
Top Depth 0 3	Bottom Depth 3 16	Horizon  	Color 10YR 10YR	Matrix (Moist) 4/1 5/1	% 85 80 	10YR 10YR	Color (Moist) 4/6 5/8	% 15 20	Type C C	Location M M	(e.g. clay, sand, loam) silty clay clay
Top Depth 0 3	Bottom Depth 3 16	Horizon	Color 10YR 10YR 	Matrix (Moist) 4/1 5/1 	% 85 80 	10YR 10YR 	Redo Color (Moist) 4/6 5/8	% 15 20	Type C C 	Location M M 	(e.g. clay, sand, loam) silty clay clay
Top Depth 0 3	Bottom Depth 3 16	Horizon	Color 10YR 10YR  	Matrix (Moist) 4/1 5/1  	% 85 80  	10YR 10YR  	Redo Color (Moist) 4/6 5/8	% 15 20	Type C C 	Location M M	(e.g. clay, sand, loam) silty clay clay
Top	Bottom Depth 3 16	Horizon	Color 10YR 10YR   	Matrix (Moist)  4/1  5/1	% 85 80   	10YR 10YR   	Redo Color (Moist)  4/6  5/8	% 15 20	Type	Location M M 	(e.g. clay, sand, loam) silty clay clay
Top	Bottom Depth 3 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon  ndicators (check here) cipedon stic en Sulfide d Layers fluck ed Below Dark Surface Dark Surface	Color 10YR 10YR ere if indi	Matrix (Moist)  4/1  5/1	% 85 80      re not pre S4 - Sand S5 - Sand S6 - Stripp	10YR 10YR	Color (Moist)  4/6  5/8      ): Matrix  ineral Matrix  crface Surface	%   15   20	Type C C for Problen A16 - Coast S7 - Dark So F12 - Iron-W TF12 - Very Other (Expla	Location  M  M       matic Soils  Prairie Redox urface langanese Mass Shallow Dark Stain in Remarks)	(e.g. clay, sand, loam) silty clay clay es
Top Depth  0 3 NRCS Hydric	Bottom Depth 3 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/1  5/1     icators a	% 85 80 stre not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple	10YR 10YR	Color (Moist)  4/6  5/8      ): Matrix  ineral Matrix  crface Surface	Sx Features % 15 20 Indicators  Indicators  Indicators  Indicators	Type C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M  M        matic Soils  Prairie Redox urface langanese Masse Shallow Dark Su ain in Remarks)	espresent, unless disturbed or problematic.
Top	Bottom Depth 3 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR 10YR ere if indi	Matrix (Moist)  4/1  5/1     icators a	% 85 80	10YR 10YR	Color (Moist)  4/6  5/8      ): Matrix  ineral Matrix  crface Surface	%   15   20	Type C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M  M        matic Soils  Prairie Redox urface langanese Masse Shallow Dark Su ain in Remarks)	(e.g. clay, sand, loam) silty clay clay es urface



Project/Site: Wetland ID: Wetland 6 Sample Point: SP 14 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Quercus palustris 5 Υ **FACW** 1. 2. Ulmus americana 5 Number of Dominant Species that are OBL, FACW, or FAC: 4 (A) **FACW** 3. 4. Total Number of Dominant Species Across All Strata: 4 (B) --5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. 0 x 1 = 10. FACW spp. 35 Total Cover = 10 x 2 =FAC spp. 0 x 3 = \_\_\_\_ FACU spp. 0
UPL spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =Fraxinus pennsylvanica 15 **FACW** x = 51. 2. 10 Ulmus americana **FACW** 3. Total 35 (A) 4. --5. Prevalence Index = B/A = 2.000 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 25 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes 1. \* Indicators of hydric soil and wetland hydrology must be 2. ---present, unless disturbed or problematic. 3. **Definitions of Vegetation Strata:** 4. --5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 0 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks:

Additional Remarks:



Are Vegetation	AEP Ohio Nate Nolar Blount silt loam Side slope 2% drologic cond , Soil  , Soil  , Soil  , Soil  , Soil  FINDINGS getation Pre	end moraine, 0 to 2 percer  Latitude:  ditions on the site ty  or Hydrology □ sig  or Hydrology □ nat  sent?	any, Inc	Invest Loc L this time disturb	ed? ic?	Convex	IWI/WWI Classification:  ain in remarks)  Are normal circumstar  ✓ Yes	Datum:  ☑ Yes □ nces present? N□ Hydric Soils	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Upland Dir:  ✓ Yes □ No
Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater M	ater Table on Marks ont Deposits posits at or Crust	ngery	ors are r	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydr C3 - Oxid C4 - Pres	er-Stained Jatic Fauna e Aquatic Jogen Sulfi Jized Rhizo Jence of Re Jent Iron Re Muck Surf Je or Well	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
	Present? esent? ent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No eam gauge, monitorii	Depth: Depth: Depth: ng well, a		(in.) (in.) (in.) otos, previ	ous inspe	ctions), if available:	Wetland Hy	drology Pi	resent? □	Yes ☑ No
Remarks: SOILS											
Map Unit Name	:	Blount silt loam, en	d morair	ne. 0 to 2	2 percent	slopes					
							ntion, D=Depletion, RM=Reduced Matrix, CS=0	Covered/Coated Sand Gra	ains; Location: PL=F	Pore Lining, M=Matrix)	
Тор	Bottom			Matrix				x Features			Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Type	Location	(e.g. clay, sand, loam)
0	3	-	10YR	4/1	100		-		-		silty clay loam
3	11	-	10YR	4/2	97	10YR	5/6	3	С	M	silty clay
11	16		10YR	5/1	90	10YR	6/6	10	С	M	silty clay
			-	-					-		
							<u></u>				
NRCS Hydric	A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm Ni A11 - Deplete A12 - Thick I S1 - Sandy Ni	istic en Sulfide d Layers ⁄luck ed Below Dark Surface Dark Surface	ere it indi	cators a	S4 - Sand S5 - Sand	dy Gleyed l dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ineral Matrix ( rface Surface		S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Prairie Redox urface Manganese Mass Shallow Dark Su ain in Remarks)	
Restrictive Layer				Denth:							Yes □ No
(If Observed)	Type:			Depth:				Hydric Soil	riesent?	V	res - No
Remarks:											



Project/Site: Wetland ID: Wetland 6 Sample Point: SP 15 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Fraxinus pennsylvanica Υ **FACW** 1. 55 2. Ulmus americana 20 Number of Dominant Species that are OBL, FACW, or FAC: 6 (A) **FACW** 3. 4. (B) Total Number of Dominant Species Across All Strata: --5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B) ----7. --8. **Prevalence Index Worksheet** 9. --Total % Cover of: Multiply by: --OBL spp. x 1 = 10. FACW spp. Total Cover = 75 x 2 =FAC spp. x 3 =180 FACU spp. 86 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =344 Rubus allegheniensis 20 **FACU** UPL spp. 0 1. x = 52. Rosa multiflora 15 **FACU** Ν 3. Ulmus americana 40 **FACW** Total 276 (A) 784 (B) 5 4. Fraxinus pennsylvanica **FACW** 5. 3 **FACU** Lonicera morrowii Ν Prevalence Index = B/A = 2.841 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. --Yes □ No Dominance Test is > 50% Total Cover = 83 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Parthenocissus quinquefolia 15 **FACU** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Rubus allegheniensis 15 Υ **FACU** present, unless disturbed or problematic. 3. 25 FAC Toxicodendron radicans 4. 15 Υ FAC **Definitions of Vegetation Strata:** Persicaria virginiana 5. 15 Υ **FACU** Rosa multiflora 6 10 Ν **FACW** Agrimonia parviflora Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Geum canadense 5 Ν FAC 3 **FACU** 8. Galium aparine Ν Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. Alliaria petiolata 5 Ν FAC ft. tall. 10. 11. --Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 108 Woody Vine Stratum (Plot size: 30 ft radius) Toxicodendron radicans 10 **FAC** 2. 3. **Hydrophytic Vegetation Present** ✓ Yes □ No 4. 5. --Total Cover = 10 Remarks: **Additional Remarks:** 



										_	
Project/Site:	•	Station Expansion I	•				Stantec Project #:	193705599		Date:	08/30/17
Applicant:		Transmission Comp	oany, Inc			_				County:	Union
Investigator #1:				Investi	igator #2:					State:	Ohio
Soil Unit:		, end moraine, 0 to 2 perce	nt slopes		1.5 . 11 . 4.		IWI/WWI Classification:	NONE			Wetland 5
Landform:	Depression				al Relief:			D = ()	14/0004	Sample Point:	
Slope (%):	1%		40.3295		ongitude:				WGS84	Community ID:	PFO
•		ditions on the site ty	•			(If no, expia		✓ Yes □	No	Section:	
	, ,	or Hydrology □ sig	,				Are normal circumsta	•	,	Township:	Dir.
SUMMARY OF		or Hydrology □ na	turally pr	ODI <del>C</del> IIIai	IC :		☑ Yes	NŪ		Range:	Dir:
Hydrophytic Ve		cont?			□ No			Hydric Soils	Procent?		
Wetland Hydrol	•			<ul><li>✓ Yes</li><li>✓ Yes</li></ul>						Within A Wetla	
Remarks:	ogy i resem	:						13 THIS Carrie	Jillig i Ollic	vvidini 70 vv edi	and: <b>= 103 = 110</b>
rtomanto.											
HYDROLOGY											
		otera (Chaal, bara	if indicate		ot proces	·+□ \•					
Wetland Hydro Primary:	•	ators (Check here	if indicati	ors are i	ot presen	nt□ ):			Secondary:		
<u>Primary.</u> □	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves			B6 - Surface So	oil Cracks
	A2 - High Wa				B13 - Aqu					B10 - Drainage	
	A3 - Saturation				B14 - True					C2 - Dry-Seaso	
	B1 - Water M				C1 - Hydro					C8 - Crayfish Bu	
	B2 - Sedimer B3 - Drift Dep						spheres on Living Roots educed Iron				Visible on Aerial Imagery Stressed Plants
	B4 - Algal Ma						eduction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep				C7 - Thin				✓	D5 - FAC-Neutr	
		on Visible on Aerial Im			D9 - Gaug	•					
☑	B8 - Sparsely	/ Vegetated Concave S	Surface		Other (Exp	plain in Re	emarks)				
	_										
Field Observat	ions:										
Surface Water		□ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes □ No
Water Table Pr		□ Yes ☑ No	Depth:		(in.)			11011011101110	ar creg,		100 = 1.0
Saturation Pres	ent?	□ Yes ☑ No	Depth:		(in.)						
Describe Record	led Data (str	eam gauge, monitori	ing well, a	erial pho	otos, previo	ous inspe	ctions) if available:		N/A		
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	odo mopo	choris, il avallabic.		IN/ <i>F</i> A		
Remarks:			<u> </u>	aoriai priid	, p. 67.		otions), ii avaliable.		IN/A		
Remarks:			<u> </u>	, , , , , , , , , , , , , , , , , , ,	, p. o		otions), ii available.		IV/A		
Remarks: SOILS			<u> </u>		, p. c	очо торо	otions), ii availabie.		IN/A		
	):	Blount silt loam, er		·	·	Ì	otions), ii availabie.		IN/A		
SOILS Map Unit Name			nd morair	ne, 0 to 2	2 percent	slopes	·			ore Lining, M=Matrix)	
SOILS Map Unit Name			nd morair	ne, 0 to 2	2 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=			ore Lining, M=Matrix)	Texture
SOILS Map Unit Name Profile Descrip	otion (Describe to		nd morair	ne, 0 to 2	2 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra		ore Lining, M=Matrix)	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip	btion (Describe to Bottom	the depth needed to document the in	nd morair	ne, 0 to 2 m the absence of Matrix	2 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra	ains; Location: PL=F		
SOILS Map Unit Name Profile Descrip Top Depth	Bottom  Depth	the depth needed to document the in	nd morair	ne, 0 to 2  m the absence of Matrix (Moist)	2 percent of indicators.) (Type	<b>slopes</b> be: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)	Covered/Coated Sand Gra  Ox Features  %	ains; Location: PL=F	Location	(e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom (Describe to Bottom Depth 4	the depth needed to document the in	nd morair ndicator or confirm Color 10YR	ne, 0 to 2 m the absence of Matrix (Moist) 3/1	2 percent of indicators.) (Type % 95	slopes  De: C=Concentra  10YR	ntion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Color (Moist)  5/8	Covered/Coated Sand Gra  OX Features  % 5	Type	Location M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	the depth needed to document the in  Horizon	nd morair ndicator or confirm Color 10YR 10YR	Matrix (Moist)  3/1 4/1	2 percent of indicators.) (Type 95 90	slopes De: C=Concentra  10YR  10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5 10	Type C C	Location M M	(e.g. clay, sand, loam) silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	the depth needed to document the in  Horizon	Color 10YR 10YR 10YR	Matrix (Moist) 3/1 4/1 5/2	2 percent of indicators.) (Type % 95 90 60	slopes De: C=Concentra  10YR 10YR 10YR	ction, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Reduced Matrix, CS=  Figure 1.15  Reduced Matrix, CS=  Reduced Matrix, CS=  Reduced Matrix, CS=  Figure 1.15  Figure 1.15	Covered/Coated Sand Gra  OX Features  %  5  10  40	Type C C C	Location M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	the depth needed to document the in  Horizon	Color 10YR 10YR 10YR	Matrix (Moist)  3/1  4/1  5/2	2 percent of indicators.) (Type 95 90 60	slopes De: C=Concentra  10YR 10YR 10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)  5/8  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5  10  40	Type C C C	Location M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	the depth needed to document the in	Color 10YR 10YR 10YR	Matrix (Moist)  3/1  4/1  5/2	2 percent of indicators.) (Type	slopes De: C=Concentra  10YR 10YR 10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)  5/8  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5  10  40	Type C C C	Location M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	Horizon	Color 10YR 10YR 10YR	Matrix (Moist) 3/1 4/1 5/2	2 percent of indicators.) (Type	slopes  De: C=Concentra  10YR  10YR  10YR	ction, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5  10  40	Type C C C	Location M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	Horizon	Color 10YR 10YR 10YR	Matrix (Moist)  3/1  4/1  5/2	2 percent of indicators.) (Type	slopes  De: C=Concentra  10YR  10YR  10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5  10  40	Type C C	Location M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 16	the depth needed to document the in	Color 10YR 10YR 10YR	Matrix (Moist)  3/1  4/1  5/2	2 percent of indicators.) (Type	slopes  De: C=Concentration  10YR  10YR  10YR     esent □	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8	Covered/Coated Sand Gra  OX Features  %  5  10  40     Indicators	Type C C C for Problen	Location M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field In A1- Histosol A2 - Histic Ep	Horizon	Color 10YR 10YR 10YR	Matrix (Moist)  3/1  4/1  5/2	2 percent of indicators.) (Type   %	slopes  De: C=Concentra  10YR  10YR  10YR     Sent □  y Gleyed I  y Redox	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix	Covered/Coated Sand Gra  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark S	Location  M  M  M      patic Soils <sup>1</sup> Prairie Redox  urface	(e.g. clay, sand, loam) silty clay loam silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi	Horizon	Color 10YR 10YR 10YR	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type   %   95   90   60           stre not present stripped   S5 - Sand   S6 - Stripped	slopes  De: C=Concentra  10YR  10YR  10YR      esent □ y Gleyed I y Redox Ded Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8        ): Matrix	Covered/Coated Sand Gra  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge	Horizon	Color 10YR 10YR 10YR	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	95 90 60 ste not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam	slopes  De: C=Concentra  10YR  10YR  10YR      esent □  y Gleyed I  y Redox  Ded Matrix  ny Muck M	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified	Horizon	Color 10YR 10YR 10YR	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	95 90 60	slopes  De: C=Concentra  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix Dy Muck May Gleyed  Ty Gleyed  Ty Gleyed  Ty Gleyed  Ty Gleyed  Ty Gleyed  Ty Gleyed	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8      ): Matrix  ineral Matrix	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type of indicator	slopes  De: C=Concentra  10YR  10YR  10YR      Sent □  y Gleyed I  y Redox  Ded Matrix  ny Muck M  ny Gleyed  eted Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  5/8  5/8  5/8      ): Matrix ineral Matrix c	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	95 90 60	slopes  De: C=Concentra  10YR  10YR  10YR     y Gleyed I by Redox Ded Matrix Ded Matrix Dark Subark Subar	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 ): Matrix ineral Matrix crface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	95 90 60	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	9% 95 90 60	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	(e.g. clay, sand, loam) silty clay loam silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	9% 95 90 60	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators   Indicators  Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	es present, unless disturbed or problematic
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type  %  95  90  60     are not pre S4 - Sand S5 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type  %  95  90  60     are not pre S4 - Sand S5 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators   Indicators  Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	es present, unless disturbed or problematic
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type  %  95  90  60     are not pre S4 - Sand S5 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators   Indicators  Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	es present, unless disturbed or problematic
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	Bottom Depth 4 10 16 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Horizon	Color 10YR 10YR 10YR ere if indi	me, 0 to 2 m the absence of Matrix (Moist) 3/1 4/1 5/2 icators a	2 percent of indicators.) (Type  %  95  90  60     are not pre S4 - Sand S5 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  De: C=Concentra  10YR  10YR  10YR  10YR     y Gleyed I y Redox Ded Matrix My Gleyed Deted Matrix Sy Dark Sureted Dark	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 5/8 5/8 5/8 ): Matrix crface Surface Surface	Covered/Coated Sand Grace  OX Features  %  5  10  40     Indicators   Indicators  Indicators	Type C C C for Problen A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location  M M M	es present, unless disturbed or problematic



Project/Site: Marysville Station Expansion Project Wetland ID: Wetland 5 Sample Point: SP 16 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Quercus macrocarpa Υ FAC 1. 65 2. 20 Acer rubrum FAC Number of Dominant Species that are OBL, FACW, or FAC: 6 (A) 3. 15 Quercus palustris Ν **FACW** 4. (B) Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. x 1 = 10. FACW spp. \_\_\_\_ Total Cover = 100 x 2 =FAC spp. 95 x 3 =FACU spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 Fraxinus pennsylvanica 5 **FACW** x = 51. 2. 3. --Total 186 (A) 4. ---5. Prevalence Index = B/A = 2.387 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Cinna arundinacea 45 **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 20 Υ Glyceria striata OBL present, unless disturbed or problematic. 3. **FACW** Symphyotrichum lateriflorum Toxicodendron radicans 5 Ν **FAC Definitions of Vegetation Strata:** 4. 3 5. Ν Carex squarrosa **OBL** 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 76 Woody Vine Stratum (Plot size: 30 ft radius) Toxicodendron radicans 5 **FAC** 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 5 Remarks:

Additional Remarks:	



Are Vegetation <sup>D</sup>	AEP Ohio Nate Nolar Glynwood silt lo Toeslope 1% drologic cond , Soil  , Soil  , Soil  , Soil  , Soil  , FINDINGS getation Pre ogy Present	Latitude: Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat	rcent slopes  40.3308 pical for nificantly urally pr	Investics Loc Lithis time / disturbe oblemat  ✓ Yes ✓ Yes	ed? ic? □ No	Concave -83.431 (If no, expla	IWI/WWI Classification: e 141	Datum:  ☑ Yes □ nces present? N□ Hydric Soils	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	PSS
HYDROLOGY  Wetland Hydro  Primary:	A1 - Surface A2 - High Wa A3 - Saturation B1 - Water Mater	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydr C3 - Oxid C4 - Pres	er-Stained latic Fauna e Aquatic logen Sulficitized Rhizo ence of Re ent Iron Re Muck Surf ge or Well	Plants Plants de Odor spheres on Living Roots educed Iron duction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seasor C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants c Position
Surface Water Water Table Pro Saturation Pres	Present? esent? ent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No eam gauge, monitorii	Depth: Depth: Depth:		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hyd	drology Pr	resent? ☑	Yes □ No
Map Unit Name	,•	Glynwood silt loam	end mo	raine 2	to 6 perc	ent slone	20				
							ution, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ins; Location: PL=F	Pore Lining, M=Matrix)	
Тор	Bottom			Matrix				ox Features			Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	5		10YR	4/2	98	10YR	4/4	2	С	M	silty clay loam
5	10		10YR	5/2	95	10YR	5/6	5	С	M	clay
		-					-				
ND00 Hardaia	 0 - :: 5: - ! - ! - !						<b></b>			1	
	A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick E S1 - Sandy N	istic en Sulfide d Layers ⁄luck ed Below Dark Surface Dark Surface		icators a	S4 - Sand S5 - Sand S6 - Strip	ly Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ineral Matrix ( rface Surface		S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Prairie Redox urface Manganese Masso Shallow Dark Su ain in Remarks)	
Restrictive Layer	Type:	clay/fill material		Depth:	10"			Hydric Soil	Present?	Ø	Yes □ No
(If Observed) Remarks:	1,700.							,			



Project/Site: Wetland ID: Wetland 7 Sample Point: SP 17 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or FAC: 3 (A) 2. --3. 4. (B) Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. ----7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. x 1 = 10. FACW spp. 75 Total Cover = 0 x 2 =FAC spp. 25 x 3 =FACU spp. 11 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =UPL spp. 0 Salix interior 45 **FACW** 1. x = 52. Populus deltoides 3 **FAC** Ν 3. Total 168 (A) (B) 4. --5. Prevalence Index = B/A = 1.940 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = 48 Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Typha latifolia 45 **OBL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Solidago canadensis 10 Ν **FACU** present, unless disturbed or problematic. 3. 15 FAC Apocynum cannabinum Ν 10 Ν **OBL Definitions of Vegetation Strata:** 4. Lycopus americanus 5 5. Echinochloa crus-galli Ν **FACW** 6 2 Ν Scirpus atrovirens OBL Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. Cirsium arvense Ν **FACU** 2 FAC 8. Juncus tenuis Ν Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. Carex vulpinoidea 25 **FACW** ft. tall. FAC 10. Solidago rugosa 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 120 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** ✓ Yes □ No 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Are Vegetation	AEP Ohio Nate Nolar Glynwood silt lo Flat 1% drologic cond , Soil  , Soil  , Soil  , FINDINGS getation Pre	Latitude: Latitude: ditions on the site ty or Hydrology □ sig or Hydrology □ nat	any, Incorporate states and the states and the states and the states are states are states and the states are	Invest Loc L this time	ed? ic? □ No	Linear -83.431 (If no, expl	IWI/WWI Classification:  141  ain in remarks)  Are normal circumstar  ✓ Yes	Datum:  ☑ Yes □ nces present? N□ Hydric Soils	Present?	Date: County: State: Wetland ID: Sample Point: Community ID: Section: Township: Range:	Upland Dir:  □ Yes ☑ No
Primary:	A1 - Surface A2 - High Wa A3 - Saturati B1 - Water M B2 - Sedime B3 - Drift De B4 - Algal Ma B5 - Iron Dep B7 - Inundati B8 - Sparsel	ater Table on Marks ont Deposits posits at or Crust	agery	ors are r	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydr C3 - Oxid C4 - Pres	er-Stained latic Fauna e Aquatic ogen Sulfi ized Rhizo ence of Ro ent Iron Re Muck Sur ge or Well	a Plants Plants de Odor espheres on Living Roots educed Iron eduction in Tilled Soils face Data			B6 - Surface So B10 - Drainage C2 - Dry-Seaso C8 - Crayfish Bu	Patterns n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position
Field Observat Surface Water Water Table Pr Saturation Pres Describe Record Remarks:	Present? esent? ent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No eam gauge, monitorii	Depth: Depth: Depth:		(in.) (in.) (in.) otos, previ	ous inspe	ections), if available:	Wetland Hye	drology Pi	resent? □	Yes ☑ No
SOILS											
Map Unit Name		Glynwood silt loam,									
		the depth needed to document the inc	licator or confirm			pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=0		ains; Location: PL=F	Pore Lining, M=Matrix)	Taratama
Тор	Bottom	11.2	0.1	Matrix				x Features	<b>-</b>	1	Texture
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Type	Location	(e.g. clay, sand, loam)
0	5		10YR	5/3	93						fill
0	5		10YR	5/8	5						fill
0	5		10YR	6/1	2						fill
										1	
NRCS Hydric	A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	istic en Sulfide d Layers ⁄luck ed Below Dark Surface Dark Surface		cators a	S4 - Sand S5 - Sand S6 - Strip	ly Gleyed ly Redox ped Matrix ny Muck M ny Gleyed eted Matri ox Dark Su eted Dark	d lineral Matrix x urface Surface		S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Prairie Redox urface Manganese Mass Shallow Dark Su ain in Remarks)	
Restrictive Layer				Donth	5"				-		
(If Observed)	I ype:	clay/fill material		Depth:	5"			Hydric Soil	resent?		Yes ☑ No
Remarks:											



Project/Site: Wetland ID: Wetland 7 Sample Point: SP 18 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 1. Number of Dominant Species that are OBL, FACW, or FAC: 1 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: 2 (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B) 6. --7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: --OBL spp. \_\_\_\_ x 1 = 10. FACW spp. 0 Total Cover = 0 x 2 =FAC spp. 68 x 3 =FACU spp. 70 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =280 UPL spp. 10 Populus deltoides 10 1. FAC x = 52. 3. (B) --Total 148 (A) 4. ---5. Prevalence Index = B/A = 3.608 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes 10 Ν **UPL** 1. Daucus carota \* Indicators of hydric soil and wetland hydrology must be 2. 65 Υ **FACU** Schedonorus arundinaceus present, unless disturbed or problematic. 3. 15 **FAC** Solidago rugosa Ν Poa pratensis 25 Ν **FAC Definitions of Vegetation Strata:** 4. Apocynum cannabinum 3 5. Ν FAC 6 15 **FAC** Setaria pumila Ν Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. Phleum pratense 7. 5 Ν **FACU** 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 138 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** □ Yes ☑ No 3. 4. 5. --Total Cover = 0 Remarks: **Additional Remarks:** 



Project/Site:	Marysville :	Station Expansion F	Project				Stantec Project #:	193705599		Date:	08/30/17
Applicant:		Transmission Comp		_			otantee i reject n.	100700000		County:	Union
Investigator #1:			· · · · · · · · · · · · · · · · · · ·		igator #2:	Kate Bo	mar			State:	Ohio
Soil Unit:		, end moraine, 2 to 4 percer	nt slopes		J		IWI/WWI Classification:	NONE		Wetland ID:	Wetland 8
Landform:	Depression	1	·	Loc	cal Relief:	Concav	е			Sample Point:	SP 19
Slope (%):	0%	Latitude:		L	ongitude:			Datum:	WGS84	Community ID:	PEM
Are climatic/hyd	drologic cond	ditions on the site ty	pical for	this time	e of year?	(If no, expl	ain in remarks)		No	Section:	
•		or Hydrology □ sig or Hydrology □ nat	•				Are normal circumstar  ✓ Yes	nces present? NŪ	)	Township: Range:	 Dir:
SUMMARY OF		every an every	Jen em y p				. 00	. 10		1 15 19 1	
Hydrophytic Ve	getation Pre	sent?		✓ Yes	s □ No			Hydric Soils	Present?		
Wetland Hydrol	~			Yes	s □ No					Within A Wetla	and? <b>☑ Yes ■ No</b>
Remarks:	fed by mult	iple drain tiles from	underne	ath facil	lity						
	•				•						
HYDROLOGY											
	•	ators (Check here i	if indicate	ors are r	not preser	nt□ ):					
<u>Primary</u>		\\/_t_=		_	DO 14/-4-	Otala a d	I		Secondary:		-!! One also
	A1 - Surface A2 - High Wa				B9 - Wate B13 - Aqu					B6 - Surface So B10 - Drainage	
	A3 - Saturation				B14 - Tru					C2 - Dry-Seaso	
	B1 - Water M			<b>▽</b>	C1 - Hydr	ogen Sulfi	de Odor			C8 - Crayfish B	
	B2 - Sedimer	•					spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift Dep						educed Iron				Stressed Plants
☑ □	B4 - Algal Ma				C6 - Rece		duction in Tilled Soils			D2 - Geomorph D5 - FAC-Neutr	
	B5 - Iron Dep	on Visible on Aerial Ima	agery		D9 - Gaug					D5 - FAC-Neuli	ai rest
		Vegetated Concave S	0 ,		Other (Ex	_					
Field Observat	ions:										
Surface Water	Present?	☑ Yes □ No	Depth:	0-1'	(in.)			Wetland Hyd	drology Di	rocont?	Voc. □ No
Water Table Pr	esent?	□ Yes ☑ No	Depth:		(in.)			wettand ny	drology Pi	esent?	Yes □ No
Saturation Pres	ent?	☑ Yes □ No	Depth:	surface	(in.)						
Describe Record	led Data (str	eam gauge monitori	na well s	مطما امام							
Booting i tooolo	ioa bata (oti			aenai ond	otos previ	ous inspe	ections) if available:		N/A		
Remarks:	-	oam gaago, momon	ing wen, a	aeriai pho	otos, previ	ous inspe	ections), if available:		N/A		
Remarks:		oam gaage, memen	ng wen, e	aenai pno	otos, previ	ous inspe	ections), if available:		N/A		
		oam gaage, memen	ing wen, e	aeriai pho	otos, previ	ous inspe	ections), if available:		N/A		
SOILS	ý.			·	Ì	·	ections), if available:		N/A		
SOILS Map Unit Name		Blount silt loam, en	d morair	ne, 2 to 4	4 percent	slopes	·			Pore Lining M=Matrix)	
SOILS Map Unit Name Profile Descrip	otion (Describe to	Blount silt loam, en	d morair	ne, 2 to 4	4 percent of indicators.) (Ty	slopes	ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra		Pore Lining, M=Matrix)	Texture
SOILS Map Unit Name Profile Descrip	Bottom	Blount silt loam, en	d morair	ne, 2 to 4 m the absence of	4 percent of indicators.) (Ty	slopes	ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra	ains; Location: PL=F		Texture (e.g. clav. sand. loam)
SOILS  Map Unit Name Profile Descrip Top Depth	Bottom Depth	Blount silt loam, en the depth needed to document the ind	d morair	ne, 2 to 4 m the absence of Matrix (Moist)	4 percent of indicators.) (Ty	slopes pe: C=Concentra	ation, D=Depletion, RM=Reduced Matrix, CS=	Covered/Coated Sand Gra Ox Features %		Pore Lining, M=Matrix)  Location	(e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom (Describe to Bottom Depth 4	Blount silt loam, en the depth needed to document the ind Horizon	dicator or confirm	me, 2 to 4 m the absence of Matrix (Moist) 5/1	4 percent of indicators.) (Ty	slopes pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Color (Moist)	Covered/Coated Sand Gra  OX Features  %	ains; Location: PL=F <b>Type</b> 	Location 	(e.g. clay, sand, loam) sandy clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the inc  Horizon	dicator or confirmation Color 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty	slopes pe: C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)   6/4	Covered/Coated Sand Gra  ox Features  %  20	Type C	Location  M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the ine Horizon	dicator or confirm	me, 2 to 4 m the absence of Matrix (Moist) 5/1	4 percent of indicators.) (Ty	slopes pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Color (Moist)	Covered/Coated Sand Gra  OX Features  %   20	Type C	Location M	(e.g. clay, sand, loam) sandy clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the ind Horizon	Color 10YR 10YR	Matrix (Moist)  5/1  5/2	4 percent of indicators.) (Ty	slopes pe: C=Concentra  10YR	ration, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)   6/4	Covered/Coated Sand Gra  OX Features  %   20	Type  C	Location M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the inc  Horizon	dicator or confirmation of the color confirmation of the color confirmation of the color confirmation of the color	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty	slopes pe: C=Concentra  10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)   6/4	Covered/Coated Sand Gra  OX Features  %   20	Type  Type  C   C	Location M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the ine Horizon	Color 10YR 10YR	Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty	slopes  pe: C=Concentra   10YR	Color (Moist)  6/4	Covered/Coated Sand Gra  OX Features  %   20	Type C	Location M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the int  Horizon	Color 10YR 10YR	Matrix (Moist)  5/1  5/2	4 percent of indicators.) (Type of indicator	slopes pe: C=Concentra  10YR	cation, D=Depletion, RM=Reduced Matrix, CS=Redo Color (Moist) 6/4	Covered/Coated Sand Gra  OX Features  %   20	Type  C	Location M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Blount silt loam, en the depth needed to document the ine Horizon	Color 10YR 10YR	Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty	slopes  pe: C=Concentra   10YR	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  6/4	Covered/Coated Sand Gra  OX Features  %   20	Type C	Location M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir	Blount silt loam, en the depth needed to document the int  Horizon	Color 10YR 10YR	Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty  % 100 80 are not pre	slopes pe: C=Concentra  10YR esent   slopes	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  6/4	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type  C for Problem	Location   M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10 Soil Field Ir	Blount silt loam, en the depth needed to document the ine Horizon	Color 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre	slopes  pe: C=Concentra   10YR        esent  dy Gleyed	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  6/4	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Probler A16 - Coast	Location  M pratic Soils 1 Prairie Redox	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir	Blount silt loam, en the depth needed to document the inc  Horizon ndicators (check he	Color 10YR 10YR	Matrix (Moist) 5/1 5/2	4 percent of indicators.) (Ty  100 80 are not pre S4 - Sanc S5 - Sanc	slopes  pe: C=Concentra   10YR        esent  dy Gleyed	Redo Color (Moist) 6/4 ): Matrix	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Problem A16 - Coast S7 - Dark S	Location   M        matic Soils <sup>1</sup> Prairie Redox urface	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field In A1- Histosol A2 - Histic Ep	Blount silt loam, en the depth needed to document the int  Horizon ndicators (check he	Color 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  100 80 are not pre S4 - Sanc S5 - Sanc	slopes  pe: C=Concentra   10YR       esent   dy Gleyed  dy Redox  ped Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  6/4  ): Matrix	Covered/Coated Sand Gra  OX Features  %  20 Indicators	Type C for Problem A16 - Coast S7 - Dark S F12 - Iron-M	Location  M pratic Soils 1 Prairie Redox	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Histosol A4 - Hydroge A5 - Stratified	Blount silt loam, en the depth needed to document the inc  Horizon  ndicators (check he pipedon distic en Sulfide d Layers	Color 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  100 80 are not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo  Color (Moist)   6/4       ): Matrix  ineral Matrix	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location   M         prairic Soils <sup>1</sup> Prairie Redox urface Manganese Mass	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Blount silt loam, en the depth needed to document the ine Horizon ndicators (check he oipedon istic en Sulfide d Layers fluck	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty % 100 80 are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist)  6/4  ): Matrix ineral Matrix	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth  4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete	Blount silt loam, en the depth needed to document the interest of the d	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S5 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo	slopes  10YR esent  Gy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su	Redo Color (Moist) 6/4 ): Matrix ineral Matrix crface	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick I	Blount silt loam, en the depth needed to document the inc Horizon	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  100 80 sre not pre S4 - Sanc S5 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Gra  OX Features  %   20      Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N	Blount silt loam, en the depth needed to document the inc Horizon	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S5 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %   20      Indicators	Type  C	Location   M        matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth  4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Blount silt loam, en the depth needed to document the interest of the document the in	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %  20   Indicators   Indicators  Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location   M       matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) sandy clay loam clay es urface
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth  4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Blount silt loam, en the depth needed to document the ine Horizon	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  100 80 sre not pre S4 - Sanc S5 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %   20      Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location   M       matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) sandy clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric	Bottom Depth  4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Blount silt loam, en the depth needed to document the interest of the document the in	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %  20   Indicators   Indicators  Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location   M       matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) sandy clay loam clay es urface
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric  NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Blount silt loam, en the depth needed to document the interest of the document the in	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %  20   Indicators   Indicators  Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location   M       matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) sandy clay loam clay es urface
SOILS  Map Unit Name Profile Descrip  Top Depth  0 4 NRCS Hydric  NRCS Hydric	Bottom Depth 4 10 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick E S1 - Sandy N S3 - 5 cm Mu	Blount silt loam, en the depth needed to document the interest of the document the in	Color 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 5/1 5/2 icators a	4 percent of indicators.) (Ty  % 100 80 are not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo	slopes  pe: C=Concentra   10YR      esent  dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su eted Dark	ation, D=Depletion, RM=Reduced Matrix, CS=  Redo Color (Moist) 6/4 ): Matrix ineral Matrix curface Surface Surface	Covered/Coated Sand Grace  OX Features  %  20   Indicators   Indicators  Indicators	Type C for Probler A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location   M       matic Soils  Prairie Redox urface Manganese Mass Shallow Dark So ain in Remarks)	(e.g. clay, sand, loam) sandy clay loam clay es urface



Project/Site: Wetland ID: Wetland 8 Sample Point: SP 19 Marysville Station Expansion Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) 2. --3. 4. Total Number of Dominant Species Across All Strata: 2 (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 6. --7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: --OBL spp. <u>85</u> x 1 = 10. FACW spp. 0 x 2 = Total Cover = 0 FAC spp. 0 x 3 = FACU spp. 0
UPL spp. 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =1. x 5 =2. 3. Total **85** (A) 4. --5. Prevalence Index = B/A = 1.000 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. Yes □ No Rapid Test for Hydrophytic Vegetation 10. Yes □ No Dominance Test is > 50% Total Cover = Yes □ No Prevalence Index is ≤ 3.0 \* □ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ No Problem Hydrophytic Vegetation (Explain) \* Yes Typha angustifolia 60 **OBL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. Echinochloa muricata 5 Ν OBL present, unless disturbed or problematic. 3. 20 **OBL** Typha X glauca **Definitions of Vegetation Strata:** 4. --5. --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. ---ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 85 Woody Vine Stratum (Plot size: 30 ft radius) 2. **Hydrophytic Vegetation Present** ☑ Yes □ No 3. 4. 5. --Total Cover = 0 Remarks:

Additional Remarks:	



Dania = 1/0:1-											
Project/Site:	Marysville	Station Expansion F	Project				Stantec Project #:	193705599		Date:	08/30/17
Applicant:	-	Transmission Comp	-				•			County:	Union
Investigator #1:		•	<b>,</b>		igator #2:	Kate Bo	mar			State:	Ohio
Soil Unit:			. ( . )	11170311	igatoi #2.		IWI/WWI Classification:	NONE			Wetland 8
		, end moraine, 2 to 4 percer	nt slopes				IVVI/VV VVI Ciassification.	. NONE			
Landform:	Side slope				al Relief:					Sample Point:	
Slope (%):	5%	Latitude:	40.3315	L	ongitude:	-83.427	529	Datum:	WGS84	Community ID:	Upland
Are climatic/hyd	drologic cond	ditions on the site ty	pical for	this time	e of year?	(If no, expla	ain in remarks)		No	Section:	
		or Hydrology □ sig	•				Are normal circumsta		<del>)</del>	Township:	
•	, ,	, 0, 0	,					•			
		or Hydrology □ nat	lurally pr	obiemai	IC?		Yes	NŪ		Range:	Dir:
SUMMARY OF	FINDINGS										
Hydrophytic Ve	getation Pre	sent?		□ Yes	s ☑ No			Hydric Soils	Present?		□ Yes ☑ No
Wetland Hydro	loav Present	:?		□ Yes	. ☑ No			Is This Same	olina Point	Within A Wetla	and? ■ Yes <b>⊠ No</b>
Remarks:	3,								<u> </u>		
ixemarks.											
<b>HYDROLOGY</b>											
Wotland Hydr	ology Indic	ators (Check here i	if indicate	ore ore r	oot procor	)+□ \•					
	•	ators (Check here i	II IIIulcall	JIS ale I	ioi presei	ιι			0		
<u>Primary</u>		\\\-\		_	DO 14/-1-	04	Lagues		Secondary:		il One else
	A1 - Surface				B9 - Wate					B6 - Surface So	
	A2 - High Wa				B13 - Aqu					B10 - Drainage	
	A3 - Saturati				B14 - True					C2 - Dry-Season	
	B1 - Water N				C1 - Hydr					C8 - Crayfish Bu	
	B2 - Sedime						spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift De						educed Iron			D1 - Stunted or	
	B4 - Algal Ma	at or Crust			C6 - Rece	ent Iron Re	duction in Tilled Soils			D2 - Geomorphi	ic Position
	B5 - Iron Dep	oosits			C7 - Thin	Muck Surf	ace			D5 - FAC-Neutr	al Test
	B7 - Inundati	on Visible on Aerial Ima	agery		D9 - Gaug	ge or Well	Data				
		y Vegetated Concave S	•		Other (Ex	plain in Re	emarks)				
	•	, 0			•	•	,				
Field Observe	4iana:										
Field Observa											
Surface Water	Present?	□ Yes ☑ No	Depth:		(in.)			Wotland Hy	drology Dr	rocont?	Yes ☑ No
Water Table Pr	resent?	□ Yes ☑ No	Depth:		(in.)			Wetland Hy	arology Fi	esent?	Yes ☑ No
Saturation Pres		□ Yes ☑ No	Depth:		(in.)						
Saturation Fres	Serit!	□ 162 ₪ 140	Бериі.		(111.)						
Describe Record	ded Data (str	eam gauge, monitori	na well a	arial aba	. 4						
			nig won, e	aenai pho	otos, previ	ous inspe	ctions), if available:		N/A		
Pomarke:	•	<u> </u>	Tig Well, a	aenai pho	otos, previ	ous inspe	ctions), if available:		N/A		
Remarks:	,	<b>3 3</b> 7	ng won, c	aenai pric	otos, previ	ous inspe	ections), if available:		N/A		
	,	0 0 7	rig well, e	aenai pric	otos, previ	ous inspe	ections), if available:		N/A		
	,	<b>3 3</b> 7	rig well, a	enai pric	otos, previ	ous inspe	ections), if available:		N/A		
SOILS	·			·		Ì	ections), if available:		N/A		
SOILS Map Unit Name	e:	Blount silt loam, en	nd morair	ne, 2 to 4	4 percent	slopes	·			Dava Lining M Metrin)	
SOILS Map Unit Name Profile Descrip	e: ption (Describe to	Blount silt loam, en	nd morair	ne, 2 to 4	4 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra		ore Lining, M=Matrix)	T
SOILS Map Unit Name	e:	Blount silt loam, en	nd morair	ne, 2 to 4 m the absence of	4 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ains; Location: PL=F	_	Texture
SOILS Map Unit Name Profile Descrip	e: ption (Describe to	Blount silt loam, en	nd morair	ne, 2 to 4	4 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra		Pore Lining, M=Matrix)  Location	Texture (e.g. clay, sand, loam)
SOILS  Map Unit Name Profile Descrip  Top Depth	e: ption (Describe to Bottom Depth	Blount silt loam, en	nd morair	ne, 2 to 4 m the absence of Matrix (Moist)	4 percent of indicators.) (Type	slopes	tion, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ains; Location: PL=F	_	(e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0	e:  ption (Describe to  Bottom  Depth  6	Blount silt loam, en the depth needed to document the in- Horizon	nd morair dicator or confirm Color 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3	4 percent of indicators.) (Type 188	slopes pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS= Reduced Matrix, CS= Color (Moist)	=Covered/Coated Sand Gra  OX Features  %	ains; Location: PL=F <b>Type</b> 	Location 	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0	e:  ption (Describe to Bottom Depth 6	Blount silt loam, en the depth needed to document the in Horizon	nd morain dicator or confirm Color 10YR 10YR	Matrix (Moist)  4/3  4/2	4 percent of indicators.) (Type   %   88   10	slopes pe: C=Concentra  10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/4	=Covered/Coated Sand Gra  Ox Features  %  2	ains; Location: PL=F	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0	e:  ption (Describe to  Bottom  Depth  6	Blount silt loam, en the depth needed to document the in- Horizon	nd morair dicator or confirm Color 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3	4 percent of indicators.) (Type 188	slopes pe: C=Concentra	ntion, D=Depletion, RM=Reduced Matrix, CS= Reduced Matrix, CS= Color (Moist)	=Covered/Coated Sand Gra  OX Features  %	ains; Location: PL=F <b>Type</b> 	Location 	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0	e:  ption (Describe to Bottom Depth 6	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR	Matrix (Moist) 4/3 4/2 4/2	4 percent of indicators.) (Type % 88 10 45	slopes pe: C=Concentra  10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/4	=Covered/Coated Sand Gra  Ox Features  %  2	Type C	Location 	(e.g. clay, sand, loam) silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist) 4/3 4/2 4/2 4/3	yercent with the second	slopes pe: C=Concentra  10YR 10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)   4/4  5/6	=Covered/Coated Sand Gra  OX Features  %   2  5	Type C	Location   	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	e:  Ption (Describe to Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR	Matrix (Moist) 4/3 4/2 4/2	4 percent of indicators.) (Type % 88 10 45	slopes pe: C=Concentra  10YR 10YR	cution, D=Depletion, RM=Reduced Matrix, CS=  Reduced Matrix, CS=  Reduced Matrix, CS=  Reduced Matrix, CS=  4/4  5/6	=Covered/Coated Sand Gra  Ox Features  %  2 5	Type C	Location  	(e.g. clay, sand, loam) silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist) 4/3 4/2 4/2 4/3	yercent with the second	slopes pe: C=Concentra  10YR 10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  Color (Moist)   4/4  5/6	=Covered/Coated Sand Gra  OX Features  %   2  5	Type C	Location   	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR 10YR	Matrix (Moist)  4/3  4/2  4/3	## Percent of indicators.) (Type   ##	slopes pe: C=Concentra  10YR 10YR	ction, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)   4/4  5/6	=Covered/Coated Sand Gra OX Features % 2 5	Type  C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist)  4/3  4/2  4/3	1 percent of indicators.) (Type	slopes pe: C=Concentra  10YR 10YR	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  4/4 5/6	=Covered/Coated Sand Gra  OX Features  %   2  5	Type  C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	e:  ption (Describe to Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist)  4/3  4/2  4/3	9% 88 10 45 40	slopes  pe: C=Concentra   10YR  10YR	ction, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  4/4 5/6	=Covered/Coated Sand Gra  OX Features  %  2 5	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	e:  ption (Describe to Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist)  4/3  4/2  4/3	9% 88 10 45 40	slopes  pe: C=Concentra   10YR  10YR	ction, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist  4/4 5/6	=Covered/Coated Sand Gra  OX Features  %  2 5	Type  C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6	e:  ption (Describe to Bottom Depth 6 10	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR	Matrix (Moist)  4/3  4/2  4/3	yercent of indicators.) (Type  %  88  10  45  40    are not pre	slopes pe: C=Concentra  10YR 10YR esent  slopes	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Moist) 4/4 5/6 ):	=Covered/Coated Sand Gra  OX Features  %  2 5 Indicators	Type  C for Problen	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	9% 88 10 45 40 are not pre	slopes  pe: C=Concentra   10YR  10YR      Seent  Iv Gleyed I	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Moist) 4/4 5/6 ):	=Covered/Coated Sand Gra  OX Features  %  2 5 Indicators	Type C for Problem A16 - Coast	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E	Blount silt loam, en the depth needed to document the in Horizon ndicators (check he	Color 10YR 10YR 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	yercent % 88 10 45 40 are not pre S4 - Sand S5 - Sand	slopes  pe: C=Concentra   10YR  10YR      esent  y Gleyed I y Redox	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Moist) 4/4 5/6 ): Matrix	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problem A16 - Coast S7 - Dark S	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H	Blount silt loam, en the depth needed to document the in Horizon ndicators (check he	Color 10YR 10YR 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	yercent of indicators.) (Type % 88 10 45 40 are not pre S4 - Sand S5 - Sand S6 - Stripp	slopes  pe: C=Concentra  10YR 10YR 10YR esent ☑ ly Gleyed I ly Redox oed Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)  4/4 5/6 ): Matrix	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type  C for Problen A16 - Coast S7 - Dark S F12 - Iron-M	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	9% 88 10 45 40 sre not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam	slopes  pe: C=Concentra   10YR  10YR      esent  y Gleyed I y Redox ped Matrix ny Muck M	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)  4/4 5/6 ): Matrix	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified	Blount silt loam, en the depth needed to document the in Horizon ndicators (check he pipedon istic en Sulfide d Layers	Color 10YR 10YR 10YR 10YR	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	% 88 10 45 40 are not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam	slopes  De: C=Concentra  10YR  10YR  10YR      Seent  Very Gleyed I  Ity Redox  Ded Matrix  Ded Matrix  Ded Muck May Gleyed  The Matrix  T	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix ineral Matrix	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N	Blount silt loam, en the depth needed to document the in  Horizon  ndicators (check he pipedon istic en Sulfide d Layers Muck	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/2 4/3 icators a	yercent of indicators.) (Type % 88 10 45 40 are not pre S4 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam F3 - Deple	slopes  pe: C=Concentra   10YR  10YR       y Gleyed I ly Redox ped Matrix y Muck M y Gleyed eted Matrix	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)  4/4 5/6 ): Matrix ineral Matrix	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40 S4 - Sand S5 - Sand S5 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo	slopes  pe: C=Concentra   10YR  10YR      esent  y Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su	tion, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)  4/4 5/6 ): Matrix ineral Matrix crface	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick I	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist)  4/3  4/2  4/3    icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40 S4 - Sand S5 - Sand S5 - Stripp F1 - Loam F2 - Loam F3 - Deple F6 - Redo	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5 Indicators	Type C for Problen A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist)  4/3  4/2  4/3    icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  Ox Features  % 2 5 Indicators	Type  C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.
SOILS Map Unit Name Profile Descrip Top Depth 0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in  Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist)  4/3  4/2  4/3    icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  Ox Features  % 2 5 Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam es urface
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.
SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric  NRCS Hydric	Bottom Depth 6 10 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratified A1- Deplete A10 - 2 cm N A11 - Deplete A12 - Thick I S1 - Sandy N S3 - 5 cm Mi	Blount silt loam, en the depth needed to document the in Horizon	Color 10YR 10YR 10YR 10YR ere if indi	me, 2 to 4 m the absence of Matrix (Moist) 4/3 4/2 4/3 icators a	% 88 10 45 40	slopes  De: C=Concentra   10YR  10YR      Seent   y Gleyed I  ly Redox  ped Matrix  ny Muck M  ny Gleyed  eted Matrix  ox Dark Su  eted Dark	tion, D=Depletion, RM=Reduced Matrix, CS= Reduced Color (Moist) 4/4 5/6 ): Matrix curface Surface Surface	=Covered/Coated Sand Gra  OX Features  % 2 5  Indicators   Indicators  Indicators	Type C	Location	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam es a present, unless disturbed or problematic.



**Additional Remarks:** 

# WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Wetland ID: Wetland 8 Marysville Station Expansion Project Sample Point: SP 20 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 2. --3. 4. (B) Total Number of Dominant Species Across All Strata: 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) --7. --8. **Prevalence Index Worksheet** 9. Total % Cover of: --Multiply by: -x 1 = 10. OBL spp. \_\_\_\_ FACW spp. 0 Total Cover = 0 x 2 =FAC spp. 13 x 3 =FACU spp. 82 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 =328 UPL spp. 18 x = 51. 2. 3. Total 113 (A) 4. ---5. Prevalence Index = B/A = 4.044 6. 7. 8. **Hydrophytic Vegetation Indicators:** ----9. ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation 10. Yes ✓ No Dominance Test is > 50% Total Cover = Yes ✓ No Prevalence Index is ≤ 3.0 \* ✓ No Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No Problem Hydrophytic Vegetation (Explain) \* Yes Apocynum cannabinum 10 Ν FAC 1. \* Indicators of hydric soil and wetland hydrology must be 2. 15 Υ UPL Daucus carota present, unless disturbed or problematic. 3. 3 **UPL** Conyza canadensis Symphyotrichum ericoides 30 Υ **FACU Definitions of Vegetation Strata:** 4. 5 5. Solidago canadensis Ν **FACU** 6 10 Ν **FACU** Lotus corniculatus Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. Dactylis glomerata 2 7. Ν **FACU** Setaria faberi 25 8. **FACU** Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. Senecio hieraciifolius 3 Ν FAC ft. tall. **FACU** 10. Ambrosia artemisiifolia 10 11. Herb - All herbaceous (non-woody) plants, regardless of size, 12. and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 113 Woody Vine Stratum (Plot size: 30 ft radius) 2. 3. **Hydrophytic Vegetation Present** □ Yes ☑ No 4. 5. --Total Cover = 0 Remarks:



# WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:		Station Expansion F					Stantec Project #:	193705599		Date:	09/24/20
Applicant:	AEP Ohio	Transmission Comp	any, Inc.							County:	Union
Investigator #1:	Nate Nolan	ıd		Investi	igator #2:	Aaron K	wolek			State:	Ohio
Soil Unit:	Blount silt loam	, end moraine, 2 to 4 percer	nt slopes			١	IWI/WWI Classification	: NONE		Wetland ID:	Non-JD
Landform:	Depression	·		Loc	al Relief:	Concave	9			Sample Point:	SP 21
Slope (%):	1	Latitude:	40 3358		ongitude:			Datum:	NAD83	Community ID:	
		ditions on the site ty						☑ Yes □	No	Section:	0. 2
		or Hydrology □ sig				(II IIU, expia					
							Are normal circumsta	•	ſ	Township:	
		or Hydrology □ nat	turally pr	robiemat	IC?		✓ Yes	NŪ		Range:	Dir:
SUMMARY OF											
Hydrophytic Ve	getation Pre	sent?			i ☑ No			Hydric Soils			Yes No
Wetland Hydrol	logy Present	?		Yes	☑ No			Is This Samp	pling Point '	Nithin A Wetla	and? ■ Yes ■ No
Remarks:	Toe of slop	e area adjacent to a	agricultu	ral field.							
HYDROLOGY											
		. (0)				\					
		ators (Check here if	indicato	ors are n	ot presen	ıt □ ):			_		
<u>Primary</u>				_					Secondary:		
					B9 - Wate					B6 - Surface So	
	A2 - High Wa					uatic Fauna				B10 - Drainage	
	A3 - Saturation					e Aquatic I				C2 - Dry-Season	
	B1 - Water M					ogen Sulfi				C8 - Crayfish Bu	
	B2 - Sedimer						spheres on Living Roots educed Iron		_	D1 - Stunted or	Visible on Aerial Imagery
	B3 - Drift Dep B4 - Algal Ma						duction in Tilled Soils		✓	D2 - Geomorphi	
	B5 - Iron Dep				C7 - Thin					D5 - FAC-Neutr	
		on Visible on Aerial Ima	nan/			ge or Well			_	D3 - 1 AC-Neuti	ai i est
		Vegetated Concave S			Other (Ex						
	20 Opa.00.	, regulated consults o	unaco		011.01 (27	.p.a					
Field Observat	lione:										
					<i>(</i> ' )						
Surface Water		□ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Pr	esent?	Yes ☑ No
Water Table Pr		□ Yes  ☑ No	Depth:		(in.)			,			
Saturation Pres	ent?	☐ Yes ☑ No	Depth:		(in.)						
Describe Record	ed Data (stre	am gauge, monitoring	ı well ae	rial photo	s previou	s inspecti	ons) if available:		N/A		
	ca Data (Stre	am gauge, monitoring	y won, ac	nai prioto	o, picviou	з порсоп	ons), ii avallabic.		14/71		
Remarks:											
SOILS											
Map Unit Name		Blount silt loam, en									
Profile Descrip	otion (Describe to	the depth needed to document the ind	icator or confirm	n the absence of	f indicators.) (Typ	e: C=Concentrat	ion, D=Depletion, RM=Reduced Matrix, CS=	=Covered/Coated Sand Gra	ains; Location: PL=Pe	ore Lining, M=Matrix)	
Top	Bottom			Matrix				lox Features			Texture
Depth	Depth	Horizon	Color	(Moist)	%		Color (Moist)	%	Type	Location	(e.g. clay, sand, loam)
0	14		10YR	4/3	100						•
-								1			silt loam
							-				
	-					-	-				
							-				
				1	+						
NRCS Hydric	Soil Field In	dicators (check he	re if indi	cators a	re not pre	esent 🗵	):	Indicators	s for Problen	natic Soils 1	
	A1- Histosol				S4 - Sand	dy Gleyed I				Prairie Redox	
	A2 - Histic Ep	oipedon			S5 - Sand				S7 - Dark S	urface	
	A3 - Black Hi					ped Matrix				anganese Mass	
	A4 - Hydroge					ny Muck M				Shallow Dark Su	urface
	A5 - Stratified					ny Gleyed			Other (Expla	in in Remarks)	
	A10 - 2 cm N					eted Matrix					
		ed Below Dark Surface				ox Dark Su					
	A12 - Thick E					eted Dark					
	S1 - Sandy N	luck Mineral icky Peat or Peat			го - Kedo	ox Depress	ions	1 Indicators of building	dia vagatation on t	otland budgate '	propert upless disturbed as each according
		icky real of real						indicators of hydrophy	ruc vegetation and w	euana nyarology must be	present, unless disturbed or problematic.
	33 - 5 CIII IVIC	-									
Restrictive Layer	Type:	NA		Depth:	NA			Hydric Soil	Present?		Yes ☑ No
Restrictive Layer (If Observed)		NA		Depth:	NA			Hydric Soil	Present?		Yes ☑ No
Restrictive Layer		NA		Depth:	NA			Hydric Soil	Present?		Yes  No
Restrictive Layer (If Observed)		NA		Depth:	NA			Hydric Soil	Present?		Yes 🗵 No



13 14

15.

1. 2. 3.

4. 5.

Woody Vine Stratum (Plot size: 30 ft radius)

## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Marysville Station Expansion Project Wetland ID: Non-JD Sample Point: SP 21 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Populus deltoides 45 FAC 2. 15 **FACU** Number of Dominant Species that are OBL, FACW, or FAC: 3 (A) Catalpa speciosa 3. 4. Total Number of Dominant Species Across All Strata: 5 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B) 7 8. **Prevalence Index Worksheet** 9 Total % Cover of: Multiply by: 10 OBL spp. x 1 = FACW spp. Total Cover = 60 x 2 =3 6 FAC spp. x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) FACU spp. x 4 = 112 1. Lonicera maackii 30 UPI UPL spp. x = 5150 FAC Acer negundo 176 3. **FACW** Ulmus americana 3 Ν Total 613 (B) (A) 4. Rosa multiflora 3 Ν **FACU** Prevalence Index = B/A = 5. 3.483 6. 7. Hydrophytic Vegetation Indicators: 8. --✓ No 9. ☐ Yes Rapid Test for Hydrophytic Vegetation ✓ No 10 ☐ Yes Dominance Test is > 50% Total Cover = ☐ Yes ✓ No Prevalence Index is ≤ 3.0 \* □ No □ Yes Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) □ Yes □ No Problem Hydrophytic Vegetation (Explain) \* 30 FAC Toxicodendron radicans \* Indicators of hydric soil and wetland hydrology must be Solidago canadensis 10 **FACU** present, unless disturbed or problematic. Ambrosia trifida 3. Ν FAC 5 4. **Definitions of Vegetation Strata:** 5. 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 ft. tall. 10 11 **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 12

Total Cover ≡ 0	
Remarks:	
Additional Demants.	
Additional Remarks:	

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Total Cover =

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

Hydrophytic Vegetation Present □ Yes ☑ No



# WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:	Marysville \$	Station Expansion F	Project				Stantec Project #:	193705599		Date:	09/24/20
Applicant:	AEP Ohio	Fransmission Comp	any, Inc.							County:	Union
Investigator #1:	Nate Nolan	d		Investi	gator #2:	Aaron K	wolek			State:	Ohio
Soil Unit:		end moraine, 2 to 4 perce	nt slones				IWI/WWI Classification:	NONE		Wetland ID:	Non-JD
Landform:	Depression		in dioped	Loc	al Raliaf	Concav		HOHE		Sample Point:	
Slope (%):	1		40.0057					Dotum	NAD83	Community ID:	
		Latitude:				-83.429				1	UPL
		litions on the site ty				(If no, expla		✓ Yes □	No	Section:	•
		or Hydrology □ sig					Are normal circumsta	inces present?	•	Township:	
Are Vegetation	□, Soil □,	or Hydrology Ina	turally pr	roblemati	ic?		Yes	NŪ		Range:	Dir:
<b>SUMMARY OF</b>	FINDINGS										
Hydrophytic Ve	netation Pre	sent?		□ Yes	□ No			Hydric Soils	Present?		□ Yes  ☑ No
Wetland Hydrol					□ No					Within A Wetla	
		of slope adjacent to						is This Samp	ning Foint	Willing Wells	and: = les = NO
Remarks:	Area is toe	or stope adjacent to	agricui	turai neid	J.						
HYDROLOGY											
Watland Hydr	ology Indica	ators (Check here it	indicato	ore ore no	ot procon	·+ □ \•					
		itors (Crieck riere ii	mulcalc	ns are m	or biesei	ιι □ ).			Cocoodon		
Primary:	A1 - Surface	Motor			PO Wate	er-Stained	Logyos		Secondary:	B6 - Surface So	oil Crooks
	A2 - High Wa					uatic Fauna				B10 - Drainage	
	A3 - Saturation					e Aquatic				C2 - Dry-Seaso	
	B1 - Water M					rogen Sulfi				C8 - Crayfish B	
	B2 - Sedimer						spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift Dep						educed Iron			D1 - Stunted or	
	B4 - Algal Ma						duction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep					Muck Surf				D5 - FAC-Neutr	
		on Visible on Aerial Ima	ogon/			ge or Well				D3 - FAC-Neuli	ai rest
		Vegetated Concave S				ge or weir plain in Re					
	Do - Sparsery	vegetated Concave C	Juliace		Other (LX	wiaiii iii ixe	illaiks)				
Field Observat	ions:										
Surface Water	Present?	□ Yes  ☑ No	Depth:		(in.)			Watland He	dualanı Du		Vec 🗆 Ne
Water Table Pr	esent?	□ Yes ☑ No	Depth:		(in.)			Wetland Hyd	arology Pr	esent?	Yes ☑ No
Saturation Pres		□ Yes ☑ No	Depth:		(in.)						
					. ,						
Describe Record	ed Data (stre	am gauge monitoring	a wall aa								
		am gaage, montoning	y wen, ae	riai pnoto	s, previou	ıs inspecti	ons), if available:		N/A		
	(	am gaage, monitoring	y well, ae	riai pnoto	s, previou	is inspecti	ons), if available:		N/A		
Remarks:	(	am gaage, mormoning	y well, ae	riai pnoto	s, previou	is inspecti	ons), if available:		N/A		
Remarks:	(	am gaage, momoning	y wen, ae	riai pnoto	s, previou	is inspecti	ons), ir avallable:		N/A		
Remarks:	·			·	•	·	ons), ir avallable:		N/A		
Remarks:  SOILS  Map Unit Name	:	Blount silt loam, en	d morair	ne, 2 to 4	percent	slopes					
Remarks:  SOILS  Map Unit Name Profile Descrip	: tion (Describe to	Blount silt loam, en	d morair	ne, 2 to 4	4 percent	slopes	on, D=Deptetion, RM=Reduced Matrix, CS=	Covered/Coated Sand Grai		ore Lining, M=Matrix)	
Remarks:  SOILS  Map Unit Name	:	Blount silt loam, en	d morair	ne, 2 to 4	4 percent	slopes	on, D=Deptetion, RM=Reduced Matrix, CS=			ore Lining, M=Matrix)	Texture
Remarks:  SOILS  Map Unit Name  Profile Descrip  Top	tion (Describe to	Blount silt loam, en	d morair	ne, 2 to 4 n the absence of	4 percent	slopes	on, D=Depletion, RM=Reduced Matrix, CS= Redu	Covered/Coated Sand Grai	ins; Location: PL=Pe	ore Lining, M=Matrix)	
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth	: Ition (Describe to Bottom Depth	Blount silt loam, en the depth needed to document the inc	d morair	ne, 2 to 4  Matrix (Moist)	percent indicators.) (Typ	Slopes De: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS= Redu Color (Moist)	Covered/Coated Sand Grail OX Features %	ins; Location: PL=Pe	Location	(e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Profile Descrip Top Depth 0	tion (Describe to a Bottom Depth	Blount silt loam, en the depth needed to document the inc	d morair  dicator or confirm  Color  10YR	ne, 2 to 4 In the absence of Matrix (Moist) 4/3	l percent indicators.) (Type % 100	slopes pe: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS= Redu Color (Moist)	Covered/Coated Sand Grai  OX Features  %	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc	d morair	ne, 2 to 4 In the absence of Matrix (Moist) 4/3	Percent indicators.) (Type 100 100 100 100 100 100 100 100 100 10	slopes  De: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grai  OX Features  %	Type	Location 	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip Top Depth 0	tion (Describe to a Bottom Depth	Blount silt loam, en the depth needed to document the inc	d morair  dicator or confirm  Color  10YR	ne, 2 to 4 In the absence of Matrix (Moist) 4/3	l percent indicators.) (Type % 100	slopes pe: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS= Redu Color (Moist)	Covered/Coated Sand Grai  OX Features  %	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc	d morair	ne, 2 to 4 In the absence of Matrix (Moist) 4/3	Percent indicators.) (Type 100 100 100 100 100 100 100 100 100 10	slopes  De: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grai  OX Features  %	Type	Location 	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc	d morair	ne, 2 to 4 In the absence of Matrix (Moist) 4/3	Percent (Typercent) % 100	slopes pe: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduction (Moist)	Covered/Coated Sand Grai  OX Features  %	Type	Location  	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc  Horizon	d morair	ne, 2 to 4 Matrix (Moist) 4/3	h percent indicators.) (Type % 100	slopes  De: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grail  OX Features  %	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc	d morain	ne, 2 to 4 nthe absence of Matrix (Moist) 4/3	percent indicators.) (Type % 100	slopes  Dec C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grail OX Features %	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 14	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 the absence of Matrix (Moist) 4/3	h percent indicators.) (Type % 100	slopes  De: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)	Covered/Coated Sand Grai	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0	Bottom Depth 14	Blount silt loam, en the depth needed to document the inc	d morain	ne, 2 to 4 nthe absence of Matrix (Moist) 4/3	percent indicators.) (Type % 100	slopes  Dec C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grail OX Features %	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0	Bottom Depth 14	Blount silt loam, en he depth needed to document the inc  Horizon	d morair	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent	Slopes se: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS== Reduced Moist)	Covered/Coated Sand Grai	Type		(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 14	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent	slopes se: C=Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grai  OX Features  %      Indicators	Type for Problem		(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric:	Bottom Depth 14 Soil Field In	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	me, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent   perc	slopes SIOPES SI	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grail OX Features % Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Ep	Blount silt loam, en the depth needed to document the inc Horizon dicators (check he	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent	slopes  Dec C—Concentrat	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0 NRCS Hydric	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic E <sub>I</sub> A3 - Black Hi	Blount silt loam, en he depth needed to document the inc  Horizon  dicators (check he bipedon stic	d morain	Matrix (Moist)  4/3  cators ar	% 100 er not pre S4 - Sanc S6 - Strip	slopes siopes c-Concentral	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %      Indicators	Type for Problem A16 - Coast S7 - Dark S6 F12 - Iron-M	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg. A3 - Black Hi A4 - Hydroge	Blount silt loam, en he depth needed to document the inc  Horizon  dicators (check he bipedon stic n Sulfide	d morain	Matrix (Moist)  4/3    cators ar	percent	slopes  siopes	on, D=Depletion, RM=Reduced Matrix, CS=  Reduction (Moist)	Covered/Coated Sand Grain OX Features % Indicators	Type  for Problen A16 - Coast S7 - Dark Si F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic E; A3 - Black Hi A4 - Hydroge A5 - Stratifier	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	me, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent indicators.) (Type indic	slopes	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)	Covered/Coated Sand Grain OX Features % Indicators	Type  for Problen A16 - Coast S7 - Dark Si F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent	slopes	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %      Indicators	Type  for Problen A16 - Coast S7 - Dark Si F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 14	Blount silt loam, en he depth needed to document the inc  Horizon  dicators (check he bipedon stic in Sulfide d Layers luck ed Below Dark Surface	d morain	ne, 2 to 4  Matrix (Moist)  4/3    cators ar	percent	slopes  slopes	on, D=Depletion, RM=Reduced Matrix, CS=  Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %      Indicators	Type  for Problen A16 - Coast S7 - Dark Si F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  NRCS Hydric	Estion (Describe to the following part of th	Blount silt loam, en he depth needed to document the inc  Horizon  dicators (check he bipedon stic en Sulfide d Layers luck ed Below Dark Surface bark Surface	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %      Indicators	Type  for Problen A16 - Coast S7 - Dark Si F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratifier A10 - 2 cm M A11 - Deplett A12 - Thick E S1 - Sandy M	Blount silt loam, en he depth needed to document the inc  Horizon  dicators (check he bipedon stic in Sulfide d Layers luck ed Below Dark Surface lark Surface luck Mineral	d morain	ne, 2 to 4  Matrix (Moist)  4/3    cators ar	percent	slopes  slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  NRCS Hydric	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm W A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mb	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent indicators.) (Type   %   100	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators  Indicators of hydrophyty	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratifier A10 - 2 cm M A11 - Deplett A12 - Thick E S1 - Sandy M	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3 cators ar	percent	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators	Type	Location	(e.g. clay, sand, loam) silt loam
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm W A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mb	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent indicators.) (Type   %   100	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators  Indicators of hydrophyty	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm W A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mb	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent indicators.) (Type   %   100	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators  Indicators of hydrophyty	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm W A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mb	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent indicators.) (Type   %   100	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators  Indicators of hydrophyty	Type	Location	(e.g. clay, sand, loam) silt loam es urface
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  O NRCS Hydric:	Bottom Depth 14 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm W A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mb	Blount silt loam, en he depth needed to document the inc  Horizon	d morain	ne, 2 to 4 n the absence of Matrix (Moist) 4/3	percent indicators.) (Type   %   100	slopes	non, D=Depletion, RM=Reduced Matrix, CS=Reduced Color (Moist)	Covered/Coated Sand Grai  OX Features  %  Indicators  Indicators of hydrophyty	Type	Location	(e.g. clay, sand, loam) silt loam es urface



Remarks:

upland and not hydrophytic.

## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Marysville Station Expansion Project Wetland ID: Non-JD Sample Point: SP 22 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status Populus deltoides 20 FAC 2. 20 **FACU** Number of Dominant Species that are OBL, FACW, or FAC: 4 (A) Catalpa speciosa Υ 3 Morus rubra 25 **FACU** 4. Total Number of Dominant Species Across All Strata: 7 5 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B) 7 8. **Prevalence Index Worksheet** 9 Total % Cover of: Multiply by: 10 OBL spp. x 1 = FACW spp. Total Cover = 65 x 2 =16 32 FAC spp. x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) FACU spp. x 4 = 55 220 1. Lonicera maackii 30 UPI UPL spp. 30 x = 5150 Ν FACU Rubus allegheniensis FAC 3 Acer negundo 20 176 627 (B) Total (A) 4. Ν **FACW** Cornus amomum 5. Prevalence Index = B/A = 3.563 6 7. **Hydrophytic Vegetation Indicators:** 8. --9. ☐ Yes ✓ No Rapid Test for Hydrophytic Vegetation □ No 10 **√** Yes Dominance Test is > 50% Total Cover = ☐ Yes ✓ No Prevalence Index is ≤ 3.0 \* □ No □ Yes Morphological Adaptations (Explain) \* □ Yes □ No Herb Stratum (Plot size: 5 ft radius) Problem Hydrophytic Vegetation (Explain) \* FACU N Solidago canadensis \* Indicators of hydric soil and wetland hydrology must be Agrimonia parviflora 15 **FACW** present, unless disturbed or problematic. 3. 10 Ν FAC Viola sp. 4. Toxicodendron radicans **Definitions of Vegetation Strata: FAC** 5. 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 ft. tall. 10 11 12 Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 13 14 Woody Vines - All woody vines greater than 3.28 ft. in height. 15 --Total Cover = Woody Vine Stratum (Plot size: 30 ft radius) 1. 2 3. Hydrophytic Vegetation Present ☑ Yes ☐ No 4. 5. Total Cover =

Additional Remarks:		

Though the hydrophytic vegetation dominance is greater than 50%, the prevelance index indicates that the majority of vegetative species present is

ECOLOGICAL RESOURCES INVENTORY REPORT, MARYSVILLE STATION EXPANSION PROJECT, UNION COUNTY, OHIO

#### D.2 ORAM DATA FORMS



## **Background Information**

Name: Nate Noland
Date: 8   29   2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-81-00
e-mail address: nathan noland & Stantce, com
Name of Wetland
Vegetation Communit(ies): PFO
HGM Class(es):  depressional
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
(Broadway
Paymond Project Area
639 N
(33)
Lat/Long or UTM Coordinate 40, 3359199N - 83, 432 952°W
USGS Quad Name
County Union
Township
Section and Subsection
Hydrologic Unit Code 050 4 000
Site Visit 8   29   2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey Wetzel silty clay loam
Delineation report/map  See Ecological Resources Inventory Report

Name of Wetland: Wetland Wetland Size (acres, hectares):

O(Q acres)

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. W Comments, Narrative Discussion, Justification of Category Changes: See Ecological Inventory Resource Report

Category:

2

Final score:

#### 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.		
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.		
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.		
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.	/	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.	/	

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

#### **Narrative Rating**

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <a href="http://www.dnr.state.oh.us/dnap">http://www.dnr.state.oh.us/dnap</a>. 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	6
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 2	Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES  Wetland is a Category 1 wetland  Go to Question 6	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	Go to Question 7
Z	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES  Wetland is a Category 3 wetland  Go to Question 8a	Go to Question 8a
<b>8</b> a	"Old Growth Forest." Is the welland 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	Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	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?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	A
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	(NO)
9b	elevation, or along a tributary to Lake Erie that is accessible to fish?  Does the wetland's hydrology result from measures designed to	Go to Question 9b YES	Go to Question 10
	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?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9c	Are Lake Erie water levels the wetland's primary hydrological influence,	YES	NO
	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.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 10
16		Go to Question 10	NO
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this	YES Wetland is a Category 3 wetland. Go to Question 11	Go to Question 11
11	type of welland and its quality.  Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	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.).	Wetland should be evaluated for possible Category 3 status  Complete Quantitative	Complete Quantitative Rating

Table 1. Characteristic plant species.

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

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

Site:	Weth	and 1		Rater(s):	N. Nolav	id	Date: 8 29	2017
	N	letric 1.	Wetland A	Area (size)				
max 6 pts	subtotal Se	>50 ad 25 to < 10 to < 3 to <1 0.3 to <	lass and assign scores (>20.2ha) (6 pts 50 acres (10.1 to <)25 acres (4 to <10.0 acres (1.2 to <4h	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)				
10		letric 2.	Upland bu	iffers and	surround	ing land use.		
max 14 pts.	4	WIDE.  X MEDIL NARRO VERY Intensity of s X VERY X LOW. MODE	Buffers average 50 M. Buffers average DW. Buffers average NARROW_Buffers urrounding land use LOW. 2nd growth of Old field (>10 years	Om (164ft) or more a 25m to <50m (82 ge 10m to <25m (3 average <10m (<3 e. Select one or do or older forest, prain o), shrub land, youn sidential, fenced possible.	around wetland p to <164ft) around 2ft to <82ft) around 2ft) around wetlan ouble check and a ie, savannah, will g second growth asture, park, cons	I wetland perimeter (4) and wetland perimeter (1) and perimeter (0) average. dlife area, etc. (7) forest. (5) servation tillage, new fallo	ow field. (3)	
12	13 M		Hydrology			,		
max 30 pts	subtotal 3a	High pl Other (  X Precipi Seasor Perenn Maximum wa >0.7 (2 0.4 to (  X < 0.4m Modifications  None of Recove Recove	Vater. Score all that I groundwater (5) groundwater (3) tation (1) nal/Intermittent surface water (later depth. Select of 7.6in) (3) 7.7m (15.7 to 27.6in (<15.7in) (1) to natural hydrolog or none apparent (12 ered (7) ering (3) or no recovery (1)	ace water (3) (ke or stream) (5) (nly one and assign (2) (2) (cregime. Score of	3d. score.	Part of wetland/u Part of riparian or Duration inundation/sat Semi- to permane Regularly inunda Seasonally inund Seasonally satura ck and average.  point source (nor filling/grading	uin (1) lake and other hum pland (e.g. forest), r upland corridor (1) uration. Score one ently inundated/satu ted/saturated (3) ated (2) ated in upper 30cm	complex (1) ) or dbl check. urated (4)
			or no recovery (1)	weir	er input	road bed/RR trac	en porce	
12.5	35,5 N	letric 4.	Habitat Al	teration a	nd Develo	pment.		
max 20 pts.	3,65 4b.	X None of Recover Recover Recent Habitat develle Excelle Very go Good (import Modera X Fair (3) Poor to Poor (1 Habitat altera None o	ering (2) or no recovery (1) opment. Select onl nt (7) ood (6) 5) ttely good (4) fair (2) ) tion. Score one or r none apparent (9)	y one and assign s	core.			
sut	355 bitotal this page	X Recove Recove Recent		mowing grazing clearcuttir selective of woody del toxic pollu	cutting oris,removal	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal	

last revised 1 February 2001 jjm

Site:	Wetlar	nd I	Rater(s): N	Noland	Date: 8/29 2017
	35,5 subtotal first page	Metric 5. Special V	Vetlands.		
0	35.5	or obcom.			
max 10 pts	subtotal C	heck all that apply and score as in Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributar Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/ Significant migratory son Category 1 Wetland. Se	(5) y wetland-unrestricted y wetland-restricted hy (Oak Openings) (10)  federal threatened or e gbird/water fowl habital e Question 1 Qualitativ	drology (5) indangered species (10) t or usage (10) e Rating (-10)	
6	41,5	Metric 6. Plant co	mmunities, ii	nterspersion, mic	rotopograpny.
max 20 pts		<ul> <li>Wetland Vegetation Communit</li> </ul>		on Community Cover Scale	
	S	core all present using 0 to 3 scale			ha (0.2471 acres) contiguous area
		Aquatic bed 2 Emergent	4	A THE PARTY OF THE	ses small part of wetland's derate quality, or comprises a
	3	Shrub Forest	2		ses significant part of wetland's
	,	Mudflats Open water	-	vegetation and is of mod part and is of high qualit	derate quality or comprises a small
		Otherb. horizontal (plan view) Interspe	rsion.	Present and comprises signed vegetation and is of high	gnificant part, or more, of wetland's n quality
	S	elect only one.	Morrotiv	e Description of Vegetation Q	uality
		High (5)  Moderately high(4)	low		predominance of nonnative or
		Moderate (3)	1044	disturbance tolerant nati	
				Native spp are dominant of although nonnative and/ can also be present, and	component of the vegetation, /or disturbance tolerant native spp d species diversity moderate to nerally w/o presence of rare
	o C	r deduct points for coverage  Extensive >75% cover (-1)  Moderate 25-75% cover  Sparse 5-25% cover (-1)	(-3)	and/or disturbance toler absent, and high spp div	species, with nonnative spp ant native spp absent or virtually versity and often, but not always, reatened, or endangered spp
		X Nearly absent <5% coverage Absent (1)	` '	and Open Water Class Quality	
	6	d. Microtopography	Widdiat	Absent <0.1ha (0.247 ac	
		score all present using 0 to 3 scale		Low 0.1 to <1ha (0.247 to	
	_	Vegetated hummucks/tu		Moderate 1 to <4ha (2.47	
		Coarse woody debris >1		High 4ha (9.88 acres) or r	
		Standing dead >25cm (1			
		Amphibian breeding poo		pography Cover Scale	
			0	Absent  Present very small amour of marginal quality	nts or if more common
			2	Present in moderate amo quality or in small amou	
_	7		3		

í

End of Quantitative Rating. Complete Categorization Worksheets.

## **ORAM Summary Worksheet**

		circle answer or insert	Result
		score	Ţ
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		
J	Metric 2. Buffers and surrounding land use	10	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	12.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	41.5	Category based on score breakpoints modified 2

Complete Wetland Categorization Worksheet.

## **Wetland Categorization Worksheet**

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

	Fina	al Category	
Choose one	Category 1	Category 2	Category 3

**End of Ohio Rapid Assessment Method for Wetlands.** 

## **Background Information**

Name: Nate Noland
Date: 8   29   2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-81-00
e-mail address: nathan, noland @ Stantec, com
Name of Wetland: Wetland 2
Vegetation Communit(ies):
HGM Class(es): depressional
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
(F39) Broadway
Project Project Area  Area  10)
Lat/Long or UTM Coordinate 40 , 3313 44° N , - 93 477509° W
USGS Quad Name Peoria
County Union
Township Taylor
Section and Subsection NA.
Hydrologic Unit Code 050 6 000
Site Visit 8 27 2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey wetted silty clay loam
Delineation report/map See Ecological Resources Inventory Report

Name of Wetland: Wetland 2	
Vetland Size (acres, hectares): 0.02 acres	
Sketch: Include north arrow, relationship with other su	ırface waters, vegetation zones, etc.
Agricultural	Field
- Agrica acco	
ſ	
	1 1
. 3	
3	*
N.	w w
- 61111 1111	1/11/11/11/11/11/10
V	w
5	V
219	
7	7
Periculte	iral Field N
3	
4	
Comments, Narrative Discussion, Justification of Cate	egory Changes:
	man. I would
See Ecological Ke	source Inventory Report
Final score : 2	Category:

#### **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.	/	
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.		
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.	V	
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.		
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.		

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

#### **Narrative Rating**

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

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

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

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arımdinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumi
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellite
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwelli
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsi
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratu
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicat
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflor
71 0	Parnassia glauca	Schechzeria palustris		Lythrum alatu
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianui
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceu
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutan
	Salix candida	Vaccinium oxycoccos		Spartina pectinat
	Salix myricoides	Woodwardia virginica		Solidago riddell
	Salix serissima	Xyris difformis		
	Solidago ohioensis	yto <b></b> yyy		
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site:	Wetla	nd 2		Rater(s):	N. Nola	nd	Date:	8 2	9 2017
1	M	etric 1.	Wetland A	rea (size)		4			
max 6 pts	subtotal Sele	>50 ad 25 to < 10 to < 3 to <1 0.3 to	class and assign sco cres (>20.2ha) (6 pts 50 acres (10.1 to <2 25 acres (4 to <10.1 0 acres (1.2 to <4ha <3 acres (0.12 to <1. <0.3 acres (0.04 to < cres (0.04ha) (0 pts)	0.2ha) (5 pts) ha) (4 pts) ) (3 pts) 2ha) (2pts)					
3	4	etric 2.	Upland bu	ffers and	surround	ing land use	•		
max 14 pts.	٥	WIDE, MEDIL NARR VERY Intensity of s VERY LOW. MODE	Buffers average 50 M. Buffers average OW. Buffers averag NARROW. Buffers urrounding land use LOW. 2nd growth o Old field (>10 years)	m (164ft) or more 25m to <50m (82 e 10m to <50m (82 e 10m to <25m (3 everage <10m (<3 Select one or do older forest, prair , shrub land, youn idential, fenced positions.	around wetland per to <164ft) around 2ft to <82ft) around 2ft) around wetlar puble check and a ie, savannah, wild g second growth asture, park, cons	wetland perimeter (4) and wetland perimeter (1) and perimeter (0) verage. dlife area, etc. (7) forest. (5) ervation tillage, new fall			
14	18 M		Hydrology		opping, mining, c	onstruction. (1)			
max 30 pts.	subtotal 3a.	High pool Other ( Precipi Season Perenr Maximum wa >0.7 (2 0.4 to ( ) <0.4m Modifications	Vater. Score all that I groundwater (5) groundwater (3) tation (1)	ce water (3) ke or stream) (5) ly one and assign (2)	3d. score.	Connectivity. Score all 100 year floodpl. Between stream Part of wetland/u Part of riparian control in undation/sa Semi- to permar Regularly inundation Seasonally inundation seasonally saturation average.	ain (1) /lake and otl /lake and otl /pland (e.g. r upland cor turption. Sc ently inunda ted/saturate dated (2) rated in upper	forest), rridor (1 ore one ated/sat ed (3) er 30cm	complex (1) 1) e or dbl chec turated (4)
	. (	Recove	or no recovery (1)	tile dike weir stormwate	er input	filling/grading road bed/RR trad dredging other		,	
7		etric 4.	Habitat Al	teration a	nd Develo	pment.			11
max 20 pts.	3	None of Recover Recover Recent Habitat deve Excelle Very go Good (	ering (2) or no recovery (1) opment. Select only nt (7) ood (6) 5) itely good (4) fair (2)						
	4c.	Habitat altera	tion. Score one or c						1
	25 lotal this page February 200	Recove Recove Recent	r none apparent (9) red (6) ring (3) or no recovery (1)	mowing grazing clearcutting selective of	cutting oris removal	shrub/sapling rer herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed rem	oval	

Site:	Wettar	d	2	F	Rater(s)	: N.N	oland	Date:	8	29/2017
max 10 pts.	72	Metr	Bog (10) Fen (10) Old grow Mature fo Lake Erie Lake Plai	and score as indices the forest (10) rested wetland (5) to coastal/tributary we coastal/tributary we note and Prairies (Oate Prairies (10)	ated. etland-unre etland-restr	stricted hyd				
			Known or Significar	ccurrence state/fedent migratory songbir	rd/water fow	l habitat or				
_4		L Metr	_	1 Wetland. See Q Plant com			ating (-10) erspersion, microto	opogra	ıph	ıy.
00-0	2.1						Comments Comments			
max 20 pts				ation Communities.	2	egetation 0	Community Cover Scale Absent or comprises < 0.1ha (0.2)	471 acros)	conti	THOUS STOS
		Score al	Aquatic b Emergen Shrub			1	Present and either comprises sm vegetation and is of moderate of significant part but is of low qua	nall part of w quality, or co	etlan	nd's
		E	Forest Mudflats Open wa	ter		2	Present and either comprises sig vegetation and is of moderate of part and is of high quality	nificant part	of w	etland's ses a small
		6b. hori	Other	n view) Interspersio	n.	3	Present and comprises significar vegetation and is of high quality		ore, c	of wetland's
	;	Select o	nly one.							
			High (5)	L. ELECAN	7		Low spp diversity and/or predom	inanaa of n	nno	livo or
			Moderate	ely high(4)		low	disturbance tolerant native spe		Jililai	live oi
		6c, Cov	Moderate Low (1) None (0) verage of in	ely low (2)  vasive plants. Refe		mod	Native spp are dominant compor although nonnative and/or distr can also be present, and speci moderately high, but generally threatened or endangered spp	nent of the vurbance tole ies diversity w/o presen	erant mod	native spp erate to
	-5	X	Moderate Sparse 5	e >75% cover (-5) e 25-75% cover (-3) i-25% cover (-1)		high	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened	tive spp abs and often, b	ent o	r virtually ot always,
			Nearly al	osent <5% cover (0		Mudflat an	d Open Water Class Quality			
		6d Mic	rotopograp	,	P.	0	Absent <0.1ha (0.247 acres)			
				sing 0 to 3 scale.	1.5	1	Low 0.1 to <1ha (0.247 to 2.47 a	icres)		
		C	Vegetate	d hummucks/tussu	icks	2	Moderate 1 to <4ha (2.47 to 9.8	8 acres)		
		0		voody debris >15cr		3	High 4ha (9.88 acres) or more			
		0	_	dead >25cm (10in an breeding pools		Microtopor	graphy Cover Scale			
		10		an breeding pools		0	Absent			_
					4	1	Present very small amounts or if of marginal quality			
						2	Present in moderate amounts, b quality or in small amounts of l			
_						3	Present in moderate or greater a			_

End of Quantitative Rating. Complete Categorization Worksheets.

## **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	1	
9	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	14	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-4	
	TOTAL SCORE	21	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

## **Wetland Categorization Worksheet**

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

	Fin	al Category	
Choose one	/Category 1 /	Category 2	Category 3

**End of Ohio Rapid Assessment Method for Wetlands.** 

# Background Information

Name:
Nate Noland
8   29   2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-8200
e-mail address: nathan, noland @ Stantec, com
Name of Wetland: Wetland 3
Vegetation Communit(ies):
HGM Class(es):
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
HWY347  Project  Aren  Aren  Lat/Long or UTM Coordinate  40 22/4/50 N
USGS Quad Name Posses a
Peoria County Union
Township Taylor
Section and Subsection
Hydrologic Unit Code 050 6 000
Site Visit 8   29   2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey
Delineation report/map See Ecological Resources Inventory Report

Notland Size (acres, hectares):  Oth acres Sketch: Include north arrow, relationship with other surface waters, vegetation and the surface waters, vegetation and vegetation and vegetation waters, vegetation and vegetation waters, vegetation waters, vegetation and vegetation waters, vegetation waters, vegetation waters, vegetation and vegetation waters, vegetation w	ones, etc.
Agricultural Rield  Fromments, Narrative Discussion, Justification of Category Changes:	5 CED
Agricultural Eicld  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Eicld  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Eicld  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Eicld  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Field  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Field  Comments, Narrative Discussion, Justification of Category Changes:	)
Agricultural Field  Comments, Narrative Discussion, Justification of Category Changes:	N T
Agricultural Field  Field  Comments, Narrative Discussion, Justification of Category Changes:	N T
Comments, Narrative Discussion, Justification of Category Changes:	N T
omments, Narrative Discussion, Justification of Category Changes:	N A
comments, Narrative Discussion, Justification of Category Changes:	N A
Comments, Narrative Discussion, Justification of Category Changes:	N
	N
	N
	N
	\(\frac{1}{4}\)
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See Ecological Resource Inven	2
See Ecological Resource Liven	
	tory Keport
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	15
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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.	/	
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.	V	
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.		
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.	/	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.	/	

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

#### **Narrative Rating**

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <a href="http://www.dnr.state.oh.us/dnap">http://www.dnr.state.oh.us/dnap</a>. 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	_
	Critical Habitat. Is the wetland in a township, section, or subsection of	YES	(NO)
	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	Wetland should be evaluated for possible Category 3 status	Go to Question 2
	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).	Go to Question 2	-
2	Threatened or Endangered Species. Is the wetland known to contain	YES	(NO
	an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	Wetland is a Category 3 wetland.	Go to Question 3
		Go to Question 3	0
3	Documented High Quality Wetland. Is the wetland on record in	YES	(NO
	Natural Heritage Database as a high quality wetland?	Wetland is a Category 3 wetland	Go to Question 4
		Go to Question 4	
4	Significant Breeding or Concentration Area. Does the wetland	YES	NO/
	contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	Wetland is a Category 3 wetland	Go to Question 5
		Go to Question 5	~
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover)	YES Wetland is a Category	Go to Question 6
	by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	1 wetland Go to Question 6	
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no	YES	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	Wetland is a Category 3 wetland	Go to Question 7
	cover of invasive species (see Table 1) is <25%?	Go to Question 7	
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free	YES	(NO)
	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%?	Wetland is a Category 3 wetland	Go to Question 8a
		Go to Question 8a	
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics:	YES	(NO)
	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	Wetland is a Category 3 wetland.	Go to Question 8b
	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?	Go to Question 8b	

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	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?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	0
<b>9</b> a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	NO)
	elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 90
9c	Are Lake Erie water levels the wetland's primary hydrological influence,	YES	NO
90	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.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 96
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	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	Wetland is a Category 3 wetland. Go to Question 11	Go to Question 11
44	type of wetland and its quality.	VEC	(NO)
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria Lythrum salicaria Najas minor Phalaris arundinacea Phragmites australis Potamogeton crispus Ranunculus ficaria Rhamnus frangula	Zygadenus elegans var. glaucus Cacalia plantaginea Carex flava Carex sterilis Carex stricta Deschampsia caespitasa Eleacharis rastellata Eriapharum viridicarinatum	Calla palustris Carex atlantica var. capillacea Carex echinata Carex oligosperma Carex trisperma Chamaedaphne calyculata Decodon verticillatus Eriopharum virginicum	Carex cryptolepis Carex stricta Carex stricta Cladium mariscoides Calamagrostis stricta Calamagrostis canadensis Quercus palustris	Calamagrastis canadensis Calamogrostis stricta Carex atherades Carex buxbaumin Carex pellita Carex sartwelli Gentiana andrewsin Helianthus grosseserratus
Typha angustifalia Typha xglauca	Gentianapsis spp. Labelia kalmii Parnassia glauca Patentilla fruticasa Rhamnus alnifalia Rhynchospora capillacea Salix candida Salix myricaides Salix serissima Solidago ohioensis Tofieldia glutinasa Triglochin maritimum Triglochin palustre	Larix laricina Nemopanthus mucronatus Schechzeria palustris Sphagnum spp. Vaccinium macrocarpon Vaccinium carymbasum Vaccinium oxycoccos Waadwardia virginica Xyris diffarmis		Liatris spicata Lysimachia quadriflara Lythrum alatum Pycnanthemum virginianum Silphium terebinthinaceum Sarghastrum nutans Spartina pectinata Solidago riddellii

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

Site:	Wetlar	id3		Rater(s):	NNola	nd	Date:	3 29	2017
	I IM	lotric 1	Wetland A	roa (sizo)				1	
2	2	ietric i.	Wetland A	irea (Size).					
max 6 pts.	subtotal Se	>50 ac 25 to < 10 to < 3 to <1 \( \sqrt{0.3 to <} 0.1 to <	ass and assign scores (>20.2ha) (6 pts 50 acres (10.1 to <2 25 acres (4 to <10.1 to <0 acres (1.2 to <4 ha 3 acres (0.12 to <1 acres (0.12 to <1 acres (0.04 to <6 acres (0.04 to ))))))))	) 20.2ha) (5 pts) ha) (4 pts) )) (3 pts) 2ha) (2pts)					
4	G M	letric 2.	Upland bu	ffers and	surround	ing land use.			
max 14 pis.	subtotal 2a.	WIDE. MEDIU WARRO VERY Intensity of s VERY X LOW. MODE	Buffers average 50 M. Buffers average DW. Buffers average NARROW. Buffers urrounding land use LOW. 2nd growth o Old field (>10 years	m (164ft) or more 25m to <50m (82 e 10m to <25m (3 average <10m (<3 . Select one or do r older forest, prain ), shrub land, your sidential, fenced p.	around wetland po to <164ft) around 12ft to <82ft) aroun 2ft) around wetlar puble check and a rie, savannah, wild 19g second growth asture, park, cons	wetland perimeter (4) Id wetland perimeter (1) Id perimeter (0) Id perimeter (0) Id perimeter (7) Id perimeter (7) Id perimeter (7) Id perimeter (7) Id perimeter (8) Id perimeter (1) Id perimeter (1) Id perimeter (4) Id perimeter (6) Id perimeter (6) Id perimeter (6) Id perimeter (7) Id perimeter (7) Id perimeter (7) Id perimeter (7) Id perimeter (8) Id perimeter (9) Id perimeter (9) Id perimeter (1) Id perimet	ow field. (3)		
15	23 M	letric 3.	Hydrology	<b>7.</b>					
max 30 pts.	subtotal 3a.	High pl Other of Precipi Seasor Perenn Maximum wa >0.7 (2 0.4 to 0 <0.4m Modifications	Vater. Score all that a groundwater (5) roundwater (3) ation (1) al/Intermittent surfaial surface water (later depth. Select or 7.6in) (3).  7.7m (15.7 to 27.6in) (15.7 to natural hydrological surface)	ce water (3) ke or stream) (5) nly one and assign (2)	3d. score.	Connectivity. Score all 100 year floodpla Between stream/ Part of wetland/u Part of riparian o Duration inundation/sat Semi- to perman Regularly inunda X Seasonally inunda X Seasonally satures k and average.	ain (1) lake and other pland (e.g. for r upland corri- uration. Score ently inundate ted/saturated lated (2)	rest), codor (1) re one cod/satur (3)	omplex (1) or dbl check. rated (4)
	q,s	Recove	r none apparent (12 red (7) ring (3) or no recovery (1)	) Check all distur ditch tile dike weir stormwate	bances observed	point source (nor filling/grading road bed/RR trac dredging other			
a	32 N	letric 4.	<b>Habitat Al</b>	teration a	nd Develo	pment.			
max 20 pts.	subtotal 4a.	None of Recover Recover Recent Habitat devel	ring (2) or no recovery (1) opment. Select onli nt (7) od (6)			e .			
	1.5	Fair (3) Poor to Poor (1	tely good (4) fair (2)						
	4c.	None of Recover Recont		Check all distur mowing grazing clearcuttir X selective	bances observed  ng cutting bris removal	shrub/sapling ren herbaceous/agua sedimentation dredging farming utrient enrichme	itic bed remo	val	

Site:	W	etland	3	Rater(s):	N.1	loland	Date:	8	19	2011
max 10 pts	3Z 3Z subtotal	Metri	that apply and score as inc Bog (10) Fen (10) Old growth forest (10) Mature forested wetland ( Lake Erie coastal/tributary Lake Plain Sand Prairies ( Relict Wet Prairies (10) Known occurrence state/fi	dicated. 5) wetland-unrestr wetland-restrict (Oak Openings)	icted hyd ed hydro (10)	logy (5)				
			Significant migratory song Category 1 Wetland. See	bird/water fowl h	abitat or	usage (10)				
- )	7)	Metri				erspersion, microto	pogra	ıph	у.	
may 20 ate	31					Comments Comments				
max 20 pts.	subtotal		and Vegetation Communition present using 0 to 3 scale.	es. <u>ve</u>	getation	Community Cover Scale Absent or comprises <0.1ha (0.2)	471 acros)	contic		2002
		2	Aquatic bed Emergent Shrub	_	1	Present and either comprises sm vegetation and is of moderate of significant part but is of low qua	all part of w quality, or co	etlan	d's	
		2 0	Forest Mudflats Open water	_	2	Present and either comprises sig vegetation and is of moderate of part and is of high quality	nificant part			
			Otherontal (plan view) Interspers	sion.	3	Present and comprises significan vegetation and is of high quality		ore, o	f wet	land's
		Select on	è :	NI-		and the attended of the				
		2.1	High (5) Moderately high(4) Moderate (3)	<u>Na</u>	low	Low spp diversity and/or predom disturbance tolerant native spe		nnati	ve or	r
			Moderately low (2) Low (1) None (0) rage of invasive plants. Roll ORAM long form for list.		mod	Native spp are dominant compor although nonnative and/or distu can also be present, and speci moderately high, but generally threatened or endangered spp	urbance tole es diversity	rant r mode	native erate	e spp
		_	points for coverage Extensive >75% cover (-5 Moderate 25-75% cover ( Sparse 5-25% cover (-1)		high	A predominance of native specie and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatene	ive spp abse and often, b	ent or ut no	virtu t alwa	ays,
			Nearly absent <5% cover Absent (1)	` '	dflat and	Open Water Class Quality				
			otopography.		0	Absent <0.1ha (0.247 acres)				
			present using 0 to 3 scale Vegetated hummucks/tus		2	Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8				
			Coarse woody debris >15		3	High 4ha (9.88 acres) or more	J acres)			
		0	Standing dead >25cm (10 Amphibian breeding pools	in) dbh		raphy Cover Scale				
				-	0	Absent				
					1	Present very small amounts or if of marginal quality				
					2	Present in moderate amounts, but quality or in small amounts of h	nighest quali			
-	6				3	Present in moderate or greater a	mounts			

End of Quantitative Rating. Complete Categorization Worksheets.

## **ORAM Summary Worksheet**

		circle	
		answer or	
		insert	Result
		score	
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	7	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	17	1.7
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE	31	Category based on score breakpoints

Category 2

**Complete Wetland Categorization Worksheet.** 

Withand 3

## **Wetland Categorization Worksheet**

Choices	Circle one	0	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 (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized 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 (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES  Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	Welland 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 Welland 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, loca 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.

	Fin	al Category	
Choose one	Category 1	Category 2	Category 3

**End of Ohio Rapid Assessment Method for Wetlands.** 

# **Background Information**

Name: Nate Noland
Date: 8   30   2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-8200
e-mail address: nathan, noland @ Stantec, com
Name of Wetland: Wetland +
Vegetation Communit(les):
HGM Class(es):  depressional
Location of Wetland: Include map, address, north arrow, landmarks, distances, roads, etc.
Broadway
HWY347 WIIII Droject
Raymond
A A ST
101
Lat/Long or UTM Coordinate
USGS Quad Name Peoria
County Union
Township Taylor
Section and Subsection
Hydrologic Unit Code 050 6 000
Site Visit 8   30   2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey Blount silt loam and moraine 2-4% slopes
See Ecological Resources Inventory Report

Name of Wetland:	Jetland 4	
Vetland Size (acres, hectares):	0.04	
sketch: Include north arrow, rela	ionship with other surface waters, vegetation zones, etc.	
	toricultural Field	194
On w	Es v v v	
	80/8080	
		>_
Comments, Narrative Discussion	, Justification of Category Changes:	
Ecological	Inventory RESOURCE	Report
Final score: 775	Cat	egory:

### **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.		
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.		
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.	V	
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.	~	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.		

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

### **Narrative Rating**

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	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?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	0
<b>9</b> a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to	YES	NO NO
	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?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	(NO)
	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	Wetland is a Category 3 wetland.	Go to Question 11
	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.	Go to Question 11	$\sim$
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

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

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

Site:	(N)e	Hand 4	+	Rater(s):	N. Nola	nd	Date:	8 30	2017
0	0	letric 1	. Wetland A	rea (size).					
max 5 pts.		>50 25 tc 10 tc 3 to 0.3 tc 0.1 tc <0.1	e class and assign sco acres (>20.2ha) (6 pts 0 <50 acres (10.1 to <2 0 <25 acres (4 to <10.1 <10 acres (1.2 to <4ha 0 <3 acres (0.12 to <1 0 <0.3 acres (0.04 to < acres (0.04ha) (0 pts)	) 20.2ha) (5 pts) Iha) (4 pts) a) (3 pts) ,2ha) (2pts) :0,12ha) (1 pt)					
7	7 1	letric 2	. Upland bu	iffers and s	surroundii	ng land use.			
max 14 pts	subtotal 2a		average buffer width. E. Buffers average 50						
	4	MED NAR VER	DIUM. Buffers average ROW. Buffers averag Y NARROW. Buffers	25m to <50m (82 t e 10m to <25m (32 average <10m (<32	o <164ft) around w Ift to <82ft) around Ift) around wetland	vetland perimeter (4) wetland perimeter (1) perimeter (0)			
	2k 3	VER LOW	f surrounding land use Y LOW. 2nd growth o /. Old field (>10 years DERATELY HIGH. Re	r older forest, prairi ), shrub land, young	e, savannah, wildli second growth fo	fe area, etc. (7)	w field. (3)		
	I IN	<b>≪</b> HIGH	H. Urban, industrial, o • Hydrology	pen pasture, row cr			// (0)		
13.5	2017				01-				
max 30 pts	1	High Othe X Prec Seas	f Water. Score all that pH groundwater (5) if groundwater (3) ipitation (1) sonal/Intermittent surfamilial surface water (la	nce water (3) ke or stream) (5)	3d. Ľ	Connectivity. Score all in 100 year floodpla.  X Between stream/l Part of wetland/up Part of riparian or our all on inundation/satu	in (1) lake and oth pland (e.g. fo upland corr uration. Sco	orest), co ridor (1) ore one o	omplex (1) or dbl check.
	l	>0.7 0.4 to <0.4 Modification	water depth. Select or (27.6in) (3) o 0.7m (15.7 to 27.6in) m (<15.7in) (1) ons to natural hydrolog	ic regime. Score or	T	Semi- to permane Regularly inundat Seasonally inundat X Seasonally satura and average.	ed/saturated ated (2)	d (3)	
	9.5	X Reco	e or none apparent (12 overed (7) overing (3) ent or no recovery (1)	Check all disturbed ditch tile dike weir stormwate		point source (non- filling/grading road bed/RR track dredging other			
lo	30.5 N	/letric 4	. Habitat Al	teration ar	nd Develo	oment.			
max 20 pts.			disturbance. Score or e or none apparent (4)		and average.				
	3	X Reco	overed (3) overing (2)						
	46	. Habitat de	ent or no recovery (1) velopment. Select onl	y one and assign so	core.				
			ellent (7) good (6)						
	3		erately good (4)						
		X Poor		0.71 7 7 1					
		None	eration. Score one or e or none apparent (9)			_			
	205	Reco	overed (6) overing (3) ent or no recovery (1)	mowing grazing clearcutting selective c	utting	shrub/sapling rem herbaceous/aguar sedimentation dredging		oval	
s	subtotal this page			toxic pollut	ris removal ants	farming nutrient enrichme	nt		

last revised 1 February 2001 jjm

Site:	We	Hande		Rater(s):	N.I	Joland	Date: 8 30 1017
	30.5						
Su	30.5	7	c 5. Special W	/etlands.			
nax 10 pts	subtotal	Check all	that apply and score as inc	dicated.			
		1	Bog (10) Fen (10)				
			Old growth forest (10)				
			Mature forested wetland (	•		(4O)	
		1	Lake Erie coastal/tributary Lake Erie coastal/tributary		-		
			Lake Plain Sand Prairies (			,	
		100	Relict Wet Prairies (10) Known occurrence state/fo	adoral throatonod	or ondo	ngarad enacios (10)	
			Significant migratory song			• • • •	
			Category 1 Wetland. See	Question 1 Quali	tative R	ating (-10)	
7	27.5	Metri	c 6. Plant con	nmunities	, int	erspersion, i	microtopography.
~ 5		_		500	a contract	-62	
max 20 pls	subtotal		and Vegetation Communition present using 0 to 3 scale.	es. <u>Veg</u>	etation 0	Community Cover Sc	ale <0.1ha (0.2471 acres) contiguous area
		Octore an	Aquatic bed	-	1		omprises small part of wetland's
		T	Emergent			The second second second	of moderate quality, or comprises a
		7 21	Shrub Forest	-	2	significant part but	is of low quality omprises significant part of wetland's
		1	Mudflats		2		of moderate quality or comprises a small
			Open water			part and is of high	quality
		Ch hada	Other		3		ses significant part, or more, of wetland's
		Select on	ontal (plan view) Interspers Iv one.			vegetation and is o	or night quality
		1 (2)	High (5)	Narr	ative D	escription of Vegetati	
			Moderately high(4)		low		d/or predominance of nonnative or
		7	Moderate (3) Moderately low (2)	-	mod	disturbance tolerar	nant component of the vegetation,
		X	Low (1)			although nonnative	e and/or disturbance tolerant native spp
		Fo Covo	None (0)	ofor			nt, and species diversity moderate to
			rage of invasive plants. Ro I ORAM long form for list.			threatened or enda	out generally w/o presence of rare angered spp
		or deduct	points for coverage		high	A predominance of r	native species, with nonnative spp
		X	Extensive >75% cover (-5 Moderate 25-75% cover (-				tolerant native spp absent or virtually pp diversity and often, but not always,
		.5 🗆	Sparse 5-25% cover (-1)	-3)			re, threatened, or endangered spp
			Nearly absent <5% cover	` '			
		Ed Miore	Absent (1) topography	Mud	Iflat and	Absent < 0.1ha (0.24	
			present using 0 to 3 scale.	-	1	Low 0.1 to <1ha (0.2	
		_	Vegetated hummucks/tus	sucks	2	Moderate 1 to <4ha	
		0 0	Coarse woody debris >15		3	High 4ha (9.88 acres	s) or more
		0	Standing dead >25cm (10 Amphibian breeding pools		rotopog	raphy Cover Scale	
		10	1 Prinzial Stocking pools		0	Absent	
					1		mounts or if more common
				-	2	of marginal quality	amounts, but not of highest
				- 4			amounts of highest quality
	1				3	Present in moderate	or greater amounts
175						and of highest qua	ility

End of Quantitative Rating. Complete Categorization Worksheets.

# **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 MO	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
9	Metric 2. Buffers and surrounding land use	7	
	Metric 3. Hydrology	13.5	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	27.5	Category based on score breakpoints

**Complete Wetland Categorization Worksheet.** 

## **Wetland Categorization Worksheet**

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

	Fina	al Category	
Choose one	Category 1	Category 2	Category 3

**End of Ohio Rapid Assessment Method for Wetlands.** 

# **Background Information**

Name of Wetland: Wetland 5	
Vetland Size (acres, hectares): 1.15 acres	
ketch: Include north arrow, relationship with other surface	ce waters, vegetation zones, etc.
omments, Narrative Discussion, Justification of Categor	v Changes
, Discussion, susumezani of salegor	,
See Ecological Inven	bory Resource Report
J	
final score: Sto	Category:

#### **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.		
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.		
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.		
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.		
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		/
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.	/	

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

### **Narrative Rating**

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <a href="http://www.dnr.state.oh.us/dnap">http://www.dnr.state.oh.us/dnap</a>. 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	0
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES  Wetland is a Category 3 wetland  Go to Question 5	Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES  Wetland is a Category 1 wetland  Go to Question 6	Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <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	Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES  Wetland is a Category 3 wetland.  Go to Question 8b	(NO) Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	NO
	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?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	0
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES  Wetland is a Category 3 wetland.  Go to Question 11	(NO) Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.)	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
invasivelexotic spp ythrum salicaria dyriophyllum spicatum Vajas minor Phalaris arundinacea Phragmites australis Potamogeton crispus Ranunculus ficaria Rhamnus frangula Typha angustifolia Typha xglauca	Tygadenus elegans var. glaucus Cacalia plantaginea Carex flava Carex sterilis Carex stricta Deschampsia caespitosa Eleocharis rostellata Eriophorum viridicarinatum Gentianopsis spp. Lobelia kalmii Parnassia glauca Potentilla fruticosa Rhamnus alnifolia Rhynchospora capillacea Salix candida Salix myricoides Salix serissima Solidago ohioensis Tofjeldia glutinosa Triglochin maritimum	Calla palustris Carex atlantica var. capillacea Carex echinata Carex oligosperma Carex trisperma Chamaedaphne calyculata Decodon verticillatus Eriophorum virginicum Larix laricina Nemopanthus mucronatus Schechzeria palustris Sphagnum spp. Vaccinium macrocarpon Vaccinium corymbosum Vaccinium oxycoccos Woodwardia virginica Xyris difformis	Carex cryptolepis Carex lasiocarpa Carex stricta Cladium mariscoides Calamagrostis stricta Calamagrostis canadensis Quercus palustris	Wet prairie species  Calamagrostis canadensis Calamogrostis stricte Carex atherode. Carex pellite Carex pellite Carex sartwelli Gentiana andrewsi Helianthus grosseserratu. Liatris spicate Lysimachia quadriflore Lythrum alatum Pycnanthemum virginianum Silphium terebinthinaceum Sorghastrum nutan. Spartina pectinate Solidago riddelli

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

Site:	Wet	lan	d 5			Rater(s):	N.No	land		Date:	8	30	2017
2	2	М	etric 1.	Wetla	nd A	rea (size	€).				,		
max 6 pts.	subtotal	Sele	25 to < 10 to < 3 to <1 0.3 to <	res (>20.2ha 50 acres (10 25 acres (4 0 acres (1.2 <3 acres (0.1	a) (6 pts) 0.1 to <20 to <10.10 to <4ha 12 to <1.3 0.04 to <1	0.2ha) (5 pts) na) (4 pts) i (3 pts)							
13	15	M	etric 2.	Uplan	d bu	ffers an	d surrou	ınding	land use.	•			
max 14 pts.	sublotal	7	WIDE. MEDIU NARRI VERY Intensity of s VERY LOW. MODE	Buffers ave JM. Buffers OW. Buffers NARROW. urrounding I LOW. 2nd of Old field (>1 RATELY HIG	erage 50r average s average Buffers a and use. growth or 10 years) GH. Res	n (164ft) or mo 25m to <50m (e 10m to <25m e e 10m to <25m e verage <10m Select one o older forest, p , shrub land, ye idential, fence	ore around wetl 82 to <164ft) a 1 (32ft to <82ft) (<32ft) around I double check rairie, savanna bung second gi	and perime round wetla around wet wetland per and averag h, wildlife a rowth forest , conservati	and perimeter (4) Itland perimeter (1) Itland perimeter (0) Itle. Itlea, etc. (7) Itle. Itlea, on tillage, new fall				
155	30.5	M	etric 3.										
max 30 pts	subtotal	3c,	Other of Precipi Season Perenr Maximum was > 0.7 (2 0.4 m Modifications None of Recover Recovers)	H groundwai groundwater tation (1) nal/Intermitte nial surface v ster depth. § 17.6in) (3) 0.7m (15.7 tc (<15.7in) (1) § to natural h	ter (5) (3) ent surface water (lak Select on 27.6in) ydrologie arent (12)	ce water (3) te or stream) (5 ly one and ass (2) Check all dis	•	Z × ad. Dura	Part of riparian of tion inundation/sa Semi- to perman Regularly inunda Seasonally inunda Seasonally satur	ain (1) //ake and of //ake and of //ake and of //apland (e.g. or upland co turation. So //aently inund //ated/saturat //ated (2) //ated in upp //astormwate //ake	fores prridor core ( ated/ ed (3 er 30 r)	st), co r (1) one or /satura 3)	omplex (1) r dbl check. ated (4)
14.5	45						and Dev	•	nent.				
max 20 pts.	subtotal	3.5 4b.	X None of Recover Recover Reconflicted Habitat deve Excelled Yery go X Good (Modera Fair (3) Poor to Poor (1 Habitat altera Recover Re	or none appared (3) ering (2) c or no recov lopment. Se ent (7) ood (6) 5) ately good (4) fair (2)	erent (4) rery (1) elect only one or d arent (9)	ouble check all dis moving grazing clearct	nd average. sturbances obs g	erved	shrub/sapling rer herbaceous/aqua sedimentation dredging farming		noval		
SL	ibtotal this p	age				toxic p	ollutants	Ţ	nutrient enrichme	ent			

last revised 1 February 2001 jjm

Site:	W	etland s		Rater(s):	N.	Noland	Date:	8/30/2017
0	45 45	Metric	5. Special W					
max 10 pts.	subtotal	Bo Fe OI Ma La La Re Kr	at apply and score as indiced (10) at (10) d growth forest (10) ature forested wetland (5) ake Erie coastal/tributary valke Erie coastal/tributary valke Plain Sand Prairies (0) alict Wet Prairies (10) anown occurrence state/feggnificant migratory songbategory 1 Wetland. See 6	) wetland-unrestrict wetland-restricted Dak Openings) (10 deral threatened of ird/water fowl hat	hydrol 0) or enda oitat or i	ngered species (10) usage (10)		
11	56	Metric	6. Plant com	munities,	, inte	erspersion, micro	topogra	aphy.
max 20 pts.	subtotal	J 6a. Wetland	Vegetation Communities	s. Vege	tation (	Community Cover Scale		
			esent using 0 to 3 scale.		0	Absent or comprises <0.1ha (0	.2471 acres)	contiguous area
		7 Er	quatic bed mergent nrub		1	Present and either comprises s vegetation and is of moderate significant part but is of low q	e quality, or c	
		O Mi	orest udflats pen water		2	Present and either comprises s vegetation and is of moderate part and is of high quality		
		6b. horizont	ther tal (plan view) Interspersi	on.	3	Present and comprises signific vegetation and is of high qua		ore, of wetland's
		Select only of	one. gh (5)	Norra	tivo De	escription of Vegetation Quality		
		М	oderately high(4) oderate (3)		low	Low spp diversity and/or predo disturbance tolerant native sp	minance of n pecies	
		6c. Coverage	oderately low (2) ow (1) one (0) ge of invasive plants. Re PRAM long form for list. A	fer	mod	Native spp are dominant comp although nonnative and/or di- can also be present, and spe moderately high, but general threatened or endangered sp	sturbance tole cies diversity ly w/o presen	erant native spp moderate to
		or deduct po	oints for coverage ktensive >75% cover (-5) oderate 25-75% cover (-3 parse 5-25% cover (-1)	3)	high	A predominance of native spec and/or disturbance tolerant n absent, and high spp diversit the presence of rare, threate	cies, with non ative spp abs y and often, l	sent or virtually but not always,
			early absent <5% cover (		ilot ond	Open Water Class Quality		
		6d. Microto	bsent (1) pography	WILLIAM	0	Open Water Class Quality Absent <0.1ha (0.247 acres)	_	
			esent using 0 to 3 scale.	1	1	Low 0.1 to <1ha (0.247 to 2.47	acres)	
		3 Ve	egetated hummucks/tuss		2	Moderate 1 to <4ha (2.47 to 9		
			oarse woody debris >15d tanding dead >25cm (10i		3	High 4ha (9.88 acres) or more		
		0 0	mphibian breeding pools		otopon	raphy Cover Scale		
				-	0	Absent		
					1	Present very small amounts or of marginal quality		
				-	2	Present in moderate amounts, quality or in small amounts o		
					3	Present in moderate or greater		

End of Quantitative Rating. Complete Categorization Worksheets.

## **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 (10)	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	2	10.4-
g	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	15.5	
	Metric 4. Habitat	14.5	
	Metric 5. Special Wetland Communities	Ö	
	Metric 6. Plant communities, interspersion, microtopography	(l	
	TOTAL SCORE	50	Category based on score breakpoints

**Complete Wetland Categorization Worksheet.** 

## **Wetland Categorization Worksheet**

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

Chassa and	Catagonia	Colomonia 1	Category 3
Choose one	Category 1	/ Category 2	Category

End of Ohio Rapid Assessment Method for Wetlands.

# **Background Information**

Name: Nate Noland
Date: 8 30 2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-8200
e-mail address: nathan, noland @ Stantec, com
Name of Wetland 6
Vegetation Communit(ies):
HGM Class(es):
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Broadway
HWY347 Project Aren
Raymond
633)
TO PERE HAMY N
Lat/Long or UTM Coordinate 46,32865°N, -83, 435244°W
USGS Quad Name
County Union
Township Taylor,
Section and Subsection
Hydrologic Unit Code 050 4 000
Site Visit 8 30 2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Blount silt loan, end moraine, 0-2% slopes
Delineation report/map See Ecological Resources Inventory Report

Name of Wetland:	Wetland (o
Wetland Size (acres,	hectares): 0.02 acres
Sketch: Include north	n arrow, relationship with other surface waters, vegetation zones, etc.
	Mixed Second Growth Forest  Pool  N
Comments, Narrative	Discussion, Justification of Category Changes:
See	Ecological Inventory Resource Report
Final score :	Category:

#### **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.		
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.		
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.		
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.	V	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.		

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

### **Narrative Rating**

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <a href="http://www.dnr.state.oh.us/dnap">http://www.dnr.state.oh.us/dnap</a>. 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	2
	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has	YES	NO
	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	Wetland should be evaluated for possible Category 3 status	Go to Question 2
	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).	Go to Question 2	
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES  Wetland is a Category 3 wetland.	Go to Question 3
		Go to Question 3	6
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES	(NO)
		Wetland is a Category 3 wetland	Go to Question 4
		Go to Question 4	
4	Significant Breeding or Concentration Area. Does the wetland	YES	NO)
	contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	Wetland is a Category 3 wetland	Go to Question 5
		Go to Question 5	0
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically Isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicana, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or	YES Wetland is a Category 1 wetland	Go to Question 6
	no vegetation?	Go to Question 6	$\cap$
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	YES Wetland is a Category 3 wetland	Go to Question 7
	cover of invasive species (see Table 1) is <25%?	Go to Question 7	1
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free	YES	(NO)
	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%?	Wetland is a Category 3 wetland	Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the	Go to Question 8a	ÎNO
Ju	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	Wetland is a Category 3 wetland.	Go to Question 8b
	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?	Go to Question 8b	

Wetland le

Ols	Matura forested watlands. In the watland a forested watland with	LVES	1/10
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES  Wetland should be evaluated for possible Category 3 status.	Go to Question 9
		Go to Question 9a	6
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	NO
	elevation, or along a tributary to Lake Erie that is accessible to fish?	Go to Question 9b	Go to Question 1
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 9
		Go to Question 10	
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be evaluated for possible Category 3 status	Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	Go to Question 10 YES	(NO)
.0	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.	Wetland is a Category 3 wetland.  Go to Question 11	Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
	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.).	Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumii
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum	-	Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
71 0	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		
	Solidago ohioensis	33		
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site:		Methan	210			Ra	ter(s):	N.1	Jolan	d		Dat	e:	8	30	2017	
max 6 pts,	Subtotal	Metric Select one	size c	lass and	assign sco	ore.	a (size	·).						1	-1		
			25 to < 10 to < 3 to <1 0.3 to < 0.1 to <	50 acres 25 acres 0 acres 3 acres 0.3 acres	2ha) (6 pts (10.1 to < (4 to <10. 1.2 to <4h (0.12 to <1 s (0.04 to <1 tha) (0 pts	20.2ha 1ha) (4 a) (3 p I.2ha) <0.12h	4 pts) ts) (2pts)										
13	13	Metric	2.	Upla	and bu	uffe	rs and	l surr	ound	ing	land us	se.					
max 14 pts.	subtotal	2b. Intens	WIDE. MEDIU NARRO VERY I ity of si VERY I LOW_ MODE	Buffers M. Buffe DW. Buffe NARRO  urroundii LOW. 21 Old field RATELY	average 50 ers average fers average V. Buffers ng land use nd growth 0 (>10 years HIGH. Re	Om (16 e 25m ge 10m avera e. Sel or olde s), shru esident	64ft) or mole to <50m (8 n to <25m ge <10m ( lect one or r forest, pr ub land, you tial, fenced	e around 2 to <164 (32ft to <6 <32ft) arou double chairie, sava ung secor pasture, p	wetland p  ft) around  32ft) around  und wetlan  neck and a  nnah, wild  nd growth  park, cons	erimeto I wetland wetl nd peri average dlife ar forest.	nd perimeter (dand perimeter meter (0) e. ea, etc. (7) (5) on tillage, new	(4) r (1)	. (3)				
		Metric					asture, rov	cropping	, mining, c	constru	iction. (1)						
max 30 pts	26	3a. Source		-			<i>י</i> .		3b.	Conn	ectivity. Score	e all that ap	oly.				
		/ 🔀	Other g Precipit Season Perenni	roundwa ation (1) al/Internial surfac	nittent surfa e water (la	ake or	stream) (5		\ 3d.	V Durat	100 year floo Between stre Part of wetlar Part of riparia on inundation	eam/lake an nd/upland (e an or upland n/saturation.	e.g. f I cori Sco	foresi ridor ore o	it), co (1) one or	omplex (1) r dbl chec	
		, 🗏	>0.7 (2: 0.4 to 0 <0.4m (	7.6in) (3) .7m (15. <15.7in)	7 to 27.6in (1)	) (2)			S checked	× and	Semi- to perm Regularly inu Seasonally in Seasonally sa	ındated/satu nundated (2)	ırate )	ed (3)	)	. ,	
		n Z	None o Recove Recove	r none a red (7) ring (3)	oparent (12		eck all dis ditch tile dike weir				point source of filling/grading road bed/RR dredging other	1	ater)	)			
11.5	37.5	Metric	<b>4</b> .	Hab	itat Al	tera	ation	and D	evelo	pm	ent.				_		
max 20 pts	subtotal 3.	5 K	None or Recove Recove	none ar red (3) ring (2)	parent (4)		ouble che	ck and ave	erage.								
		4b. Habita		opment. nt (7) od (6)	covery (1) Select onl	ly one	and assigi	score.									
	į	Z	Modera air (3)	tely good fair (2)	i (4)												
		4c. Habita	altera	tion. Sc									_		7		
[	31.5 ototal this pa	6 X F	Recove Recove	red (6) ring (3)	oparent (9) covery (1)		_	ting e cutting lebris rem		X	shrub/sapling herbaceous/a sedimentation dredging farming nutrient enricl	aquatic bed	remo	oval			

last revised 1 February 2001 jjm

Site:	W	setland le	Rater(s):	N.	Moland	Date:	8/30	12017
max 10 pts.	35.5 ublotal first pa 37.5 subtotal	Metric 5. Spec						
		Lake Erie coastal/ Lake Plain Sand F Relict Wet Prairies Known occurrence Significant migrato Category 1 Wetlar	etland (5) tributary wetland-unres tributary wetland-restric Prairies (Oak Openings) s (10) e state/federal threaten ony songbird/water fowl nd. See Question 1 Que	eted hydrol (10) ed or enda habitat or alitative R	logy (5) ungered species (10) usage (10) ating (-10)			
6	43,5	Metric 6. Plant	communitie	s, int	erspersion, microt	opogra	phy.	
max 20 pts.	subtotal	6a. Wetland Vegetation Cor	mmunities.	getation	Community Cover Scale			
		Score all present using 0 to	3 scale.	0	Absent or comprises <0.1ha (0.			is area
		Aquatic bed Emergent Shrub		1	Present and either comprises so vegetation and is of moderate significant part but is of low qu	quality, or co		a
	Ĩ	Forest Mudflats Open water		2	Present and either comprises si vegetation and is of moderate part and is of high quality	quality or co	mprises a	a small
		6b. horizontal (plan view) In	terspersion	3	Present and comprises significated vegetation and is of high quality		ore, of we	tland's
		Select only one.	N	arrative D	escription of Vegetation Quality			
		High (5)  Moderately high(4)  Moderate (3)		low	Low spp diversity and/or predor disturbance tolerant native sp	ninance of no ecies		
		Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plate Table 1 ORAM long form	ants. Refer	mod	Native spp are dominant compo- although nonnative and/or dis can also be present, and spec moderately high, but generally threatened or endangered sp	turbance tole cies diversity y w/o presend	rant nativ	ve spp e to
		or deduct points for coverag  Extensive >75% of Moderate 25-75% Sparse 5-25% cov	e cover (-5) cover (-3) ver (-1)	high	A predominance of native speci and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threaten	es, with nonr ative spp abso and often, b	ent or virt ut not alv	ually vays,
		Nearly absent <59			Open Mater Class Quality			
		Absent (1)	·M		Open Water Class Quality Absent <0.1ha (0.247 acres)			
		6d. Microtopography Score all present using 0 to	3 ecale	1	Low 0.1 to <1ha (0.247 to 2.47	acres)		
		Vegetated hummi		2	Moderate 1 to <4ha (2.47 to 9.			
		Copres woody do		3	High 4ha (9.88 acres) or more			
		2 Standing dead >2 Amphibian breedi	5cm (10in) dbh		graphy Cover Scale			
		- Farinament aloudi		0	Absent			
			-	1	Present very small amounts or of marginal quality			
			-	2	Present in moderate amounts, I quality or in small amounts of			
	i			3	Present in moderate or greater and of highest quality	amounts		

43,5

End of Quantitative Rating. Complete Categorization Worksheets.

## **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 NG	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	13	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	11.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	43,5	Category based on score breakpoints  Modified 2

Complete Wetland Categorization Worksheet.

Wetland U

## **Wetland Categorization Worksheet**

Choices	Circle one	1	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 overcategorized 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	Wetland is categorized as a Category 1 wetland	NO)	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO )	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	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, loca 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.

A Company of the Comp	Final Category					
Choose one Category 1 Category 2 Category	Choose one	Category 1	Category 2	Category 3		

**End of Ohio Rapid Assessment Method for Wetlands.** 

# Background Information

Name: Nate Noland
Date: 8 30 2017
Affiliation: Stantec Consulting
Address: 11687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-942-8200
e-mail address: nathan, noland @ Stantec, com
Name of Wetland 7
Vegetation Communit(ies):  PSS
HGM Class(es):
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Raymond Project Aven  Raymond Reserved Aven  Aven  Aven  Aven
Lat/Long or UTM Coordinate
USGS Quad Name Peoria
County Union
Township Taylor
Section and Subsection
Hydrologic Unit Code 050 4 000
Site Visit 8   30   2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey Glynwood silt loam, and moraine, 2-6% slopes
Delineation report/map See Ecological Resources Inventory Report

me of Wetland:	Wetland 7	
etland Size (acres, hecta	ares): 0.04 acres	
etch: Include north arro	w, relationship with other surface waters, vegetation zones, etc.	
		0
\	& Backslope 1/1	67
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omments Narrative Dis	cussion, Justification of Category Changes:	
Jimiono, Narianto Dio	outsing the same of states	
Sea Fr	cological Inventory Resource Report	
SEE KI	zowarea savement, resource repor	4

### **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, 40 I/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.		
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.	/	
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.	/	
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.	/	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		/
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.	/	

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

## **Narrative Rating**

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

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

			0
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES  Wetland should be evaluated for possible Category 3 status.  Go to Question 9a	Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	NO
9b	elevation. or along a tributary to Lake Erie that is accessible to fish?  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?	Go to Question 9b YES  Wetland should be evaluated for possible Category 3 status Go to Question 10	Go to Question 10 NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
e e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES  Wetland is a Category 3 wetland.  Go to Question 11	Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

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

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

Site:	Wet	tand 7	Rater(s): N. Noland	Date: 8 30 2017
		Metric 1. We	etland Area (size).	1
max 6 pts.	subtotal	25 to <50 acr 10 to <25 acr 3 to <10 acre 0.3 to <3 acre	20.2ha) (6 pts) es (10.1 to <20.2ha) (5 pts) es (4 to <10.1ha) (4 pts) s (1.2 to <4ha) (3 pts) es (0.12 to <1.2ha) (2pts) cres (0.04 to <0.12ha) (1 pt)	
12	17	Metric 2. Up	land buffers and surrounding	land use.
max 14 pts.	subtotal	WIDE. Buffer MEDIUM. BL NARROW. E VERY NARR  2b. Intensity of surroun VERY LOW. LOW. Old fie MODERATEL	buffer width. Select only one and assign score. Do not a saverage 50m (164ft) or more around wetland perime offers average 25m to <50m (82 to <164ft) around wetland griffers average 25m to <25m (32ft to <82ft) around wetland perime of the control	ter (7) and perimeter (4) tland perimeter (1) tland perimeter (1) ge. urea, etc. (7) t (5) ion tillage, new fallow field. (3)
9	121	Metric 3. Hy	drology.	
max 30 pts	sublotal	3c. Maximum water de >0.7 (27.6in) 1 0.4 to 0.7m (1.5.7) 2 0.4m (<15.7)	ndwater (5) water (3) (1) rmittent surface water (3) face water (lake or stream) (5) oth. Select only one and assign score. (3) 5.7 to 27.6in) (2)	nectivity. Score all that apply.  100 year floodplain (1)  Between stream/lake and other human use (1)  Part of wetland/upland (e.g. forest), complex (1)  Part of riparian or upland corridor (1)  ation inundation/saturation. Score one or dbl check  Semi- to permanently inundated/saturated (4)  Regularly inundated/saturated (3)  Seasonally inundated (2)  Seasonally saturated in upper 30cm (12in) (1)  d average.
		None or none Recovered (7 Recovering (3 Recent or no	3) tile	point source (nonstormwater) filling/grading road bed/RR track dredging other
7.8	78.5	Metric 4. Ha	bitat Alteration and Developm	nent.
max 20 pts,	subtotal	None or none Recovered (3 Recovering (2 Recent or no 4b. Habitat developmer Excellent (7) Very good (6) Good (5) Moderately go Fair (3) Poor to fair (2	ood (4)	
		111111111111111111111111111111111111111	Score one or double check and average.	
	Z8,9	None or none Recovered (6 Recovering (3 Recent or no	mowing grazing	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment

Site:	WIT	land '	7	Rater(s	): N.N	Joland	Date:	8/3	30	2017
max 10 pts.	ZB.5 ubtotal first p	Metri	that apply and score as inc Bog (10) Fen (10) Old growth forest (10) Mature forested wetland ( Lake Erie coastal/tributary Lake Plain Sand Prairies ( Relict Wet Prairies (10)	dicated  5)  wetland-unr wetland-res	estricted hyd tricted hydrol					
		1	Known occurrence state/fo			• • • •				
-			Category 1 Wetland. See	Question 1	Qualitative Ra	ating (-10)				
4	32.5	Metr	ic 6. Plant con	nmunit	ies, inte	erspersion, microto	opogra	ph	у.	
max 20 pts	subtotal	J 6a Wetl	and Vegetation Communitie	es	Vegetation (	Community Cover Scale				
			present using 0 to 3 scale.		0	Absent or comprises <0.1ha (0.2	471 acres)	ontia	uous	area
		0	Aquatic bed Emergent Shrub		1	Present and either comprises sm vegetation and is of moderate of significant part but is of low qua	all part of w quality, or co	etland	l's	
			Forest Mudflats Open water		2	Present and either comprises sig vegetation and is of moderate of part and is of high quality	nificant parl			
			Otherontal (plan view) Interspers	sion	3	Present and comprises significant vegetation and is of high quality		ore, of	wetl	and's
		Select on				the second second				
			High (5)  Moderately high(4)  Moderate (3)		low	Low spp diversity and/or predom disturbance tolerant native spe		nnati	ve or	
			Moderately low (2) Low (1) None (0) rage of invasive plants. Rational Control of the Rational		mod	Native spp are dominant compor although nonnative and/or distu can also be present, and speci moderately high, but generally threatened or endangered spp	urbance tole es diversity	rant n mode	ative rate t	
		or deduct	points for coverage Extensive >75% cover (-5 Moderate 25-75% cover ( Sparse 5-25% cover (-1)	5) -3)	high	A predominance of native specie and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatene	ive spp abso and often, b	ent or ut not	virtua alwa	_
		1	Nearly absent <5% cover			Zw. m. II.				
			Absent (1)			Open Water Class Quality				
			otopography		0	Absent <0.1ha (0.247 acres)				
		Score all	present using 0 to 3 scale.		1	Low 0.1 to <1ha (0.247 to 2.47 a				
		. 6	Vegetated hummucks/tus		2	Moderate 1 to <4ha (2.47 to 9.8	o acres)			
		1 0	Coarse woody debris >15 Standing dead >25cm (10		3	High 4ha (9.88 acres) or more				
		0	Amphibian breeding pools		Microtopog	raphy Cover Scale				
					0	Absent				
					1	Present very small amounts or if of marginal quality				
					2	Present in moderate amounts, but quality or in small amounts of h				
	1				3	Present in moderate or greater a				

32,5

End of Quantitative Rating. Complete Categorization Worksheets.

Wetland 7

## **ORAM Summary Worksheet**

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	12	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	7.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE	32.5	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland 7

## **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 (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES  Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES  Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES  Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	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	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, loca 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.

Choose one	Category 1	Category 2	Category 3
------------	------------	------------	------------

**End of Ohio Rapid Assessment Method for Wetlands.** 

## Background Information

Nate Noland
Date: 8   30   2017
Affiliation: Stantec Consulting
Address: 1/687 Lebanon Rd., Cincinnati, OH 45206
Phone Number: 513-842-81-00
e-mail address: nathan, noland & Stantec, com
Name of Wetland: Wetland 8
Vegetation Communit(ies):
HGM Class(es):
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
(Broadway
Paymond Project Aven
Raymond
TO REAL PROPERTY N
10) Hay
Lat/Long or UTM Coordinate 40, 3309   °N , -83, 428193° W
USGS Quad Name Peoria
County Union
Township Taylor
Section and Subsection
Hydrologic Unit Code 050 6 000
Site Visit 8   30   2017
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey Blount silt loam, and morane 24% slopes
Delineation report/map See Ecological Resources Inventory Report
11.10

Name of Wetland:	Hand 8			
Wetland Size (acres, hectares):	1,13 acres			
Sketch: Include north arrow, relation	ship with other surface wa	ers, vegetation zones, et	c.	
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Indi	ustrial fac	ility		
Comments, Narrative Discussion, Ju	istification of Category Cha	inges:		
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see Ecologic	al diventory	Resource	Keport	
				1
				1
				- 1
				-
Final agent :			togory	
Final score:		Ca	ategory:	

wetland 8

### **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.	/	
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.		
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.		
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.		
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		
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.	/	

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

Wetland 8

## **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), <a href="http://www.dnr.state.oh.us/dnap">http://www.dnr.state.oh.us/dnap</a>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

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

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

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

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

Site:	Wet	land 8		Rater(s):	N. Nolav	d	Date:	8	30	2017
7.	2 N	letric 1.	Wetland A	rea (size)				,		
max 6 pts.	subtotal Se	>50 ad 25 to < 10 to < 3 to <1 \$\times 0.3 to \text{0.1 to}\$	class and assign sco cres (>20.2ha) (6 pts <50 acres (10.1 to <2 <25 acres (4 to <10.1 10 acres (1.2 to <4ha <3 acres (0.12 to <1. <0.3 acres (0.04 to < cres (0.04ha) (0 pts)	) 0.2ha) (5 pts) ha) (4 pts) ) (3 pts) 2ha) (2pts)						
3	5 M	letric 2.	Upland bu	ffers and	surround	ing land use	•			
max 14 pts.	0	WIDE. MEDIL NARR VERY Intensity of s VERY X LOW. MODE	OW. Buffers averag NARROW. Buffers surrounding land use LOW. 2nd growth o Old field (>10 years)	m (164ft) or more 25m to <50m (82 e 10m to <25m (62 average <10m (< Select one or or or older forest, pra b, shrub land, you sidential, fenced p	around wetland po 2 to <164ft) around 32ft to <82ft) around 32ft) around wetlar double check and a irie, savannah, wilc ng second growth pasture, park, cons	erimeter (7) wetland perimeter (4) id wetland perimeter (1) id perimeter (0) verage. Ilife area, etc. (7) forest. (5) ervation tillage, new fa		)		
a	14 M		Hydrology	•	TP G, G,					
max 30 pts.	subtotal 3a	High p Other s Precipi Season Perenr Maximum wa >0.7 (2	Vater. Score all that H groundwater (5) groundwater (3) itation (1) nal/Intermittent surfanial surface water (later depth. Select or 27.6in) (3) 0.7m (15.7 to 27.6in) (<15.7in) (1) s to natural hydrologor none apparent (12	ce water (3) ke or stream) (5) nly one and assig (2) c regime. Score	3d. n score.	Connectivity. Score a  100 year floodp Between stream Part of wetland/ Part of riparian Duration inundation/sa Semi- to perma Regularly inund Seasonally inun Seasonally satuck and average.	lain (1)  n/lake and of upland (e.g. or upland conturation. Somently inund ated/saturat dated (2)	ther h fores orridor core c ated/s ed (3)	st), cor r (1) one or satura	mplex (1) dbl check ted (4)
	1	Recov	ered (7) ering (3) t or no recovery (1)	ditch tile dike weir X stormwa	ter input	point source (no filling/grading road bed/RR tradredging other		r)		
U	1//	letric 4.	Habitat Al	teration a	nd Develo	pment.			-	
max 20 pts	2 4b	None of Recovery Recent Recovery Recent Recent Recent Recent Recent Recent Recent Recent Recovery Recent Recovery Recove	ood (6) (5) ately good (4) ) o fair (2)	y one and assign	score.	shrub/sapling re				
	btotal this page	▼ Recen	t or no recovery (1)	clearcutt	cutting ebris removal	sedimentation  dredging farming nutrient enrichm		TOVAL		

Site:	wetl	and 8	Rater	s): N.1	voland	Date: 8/30/2017
max 10 pts.	18 subtotal first particular first parti	Metric 5. Spec Check all that apply and so Bog (10) Fen (10)	core as indicated.	ds.		
7	70	Lake Erie coasta Lake Plain Sand Relict Wet Prairi Known occurren Significant migra Category 1 Wetl	wetland (5) al/tributary wetland-ur al/tributary wetland-re Prairies (Oak Openi es (10) ce state/federal threa atory songbird/water f and. See Question 1	estricted hydro ngs) (10) atened or enda fowl habitat or   Qualitative R	angered species (10) usage (10)	opography.
max 20 pts.	subtotal	Go Motland Vagatation C	ommunition	Vegetation	Community Cover Scale	
max 20 pts.	Subjoidi	6a. Wetland Vegetation C Score all present using 0 to		0	Community Cover Scale Absent or comprises < 0.1ha (0.	2471 acres) contiguous area
		Aquatic bed Emergent Shrub	o o soulo.	1	Present and either comprises si vegetation and is of moderate significant part but is of low qu	mall part of wetland's quality, or comprises a
	Č	Forest Mudflats Open water		2	Present and either comprises si vegetation and is of moderate part and is of high quality	quality or comprises a small
		6b. horizontal (plan view)	Interspersion	3	Present and comprises signification and is of high quality	VO.
		Select only one. High (5)		Narrative D	escription of Vegetation Quality	
		Moderately high Moderate (3)		low	Low spp diversity and/or predor disturbance tolerant native sp	ninance of nonnative or ecles
		Moderately low (Low (1) None (0) 6c. Coverage of invasive to Table 1 ORAM long form	plants. Refer	mod	Native spp are dominant compo- although nonnative and/or dis can also be present, and spec moderately high, but generally threatened or endangered spi	turbance tolerant native spp cies diversity moderate to y w/o presence of rare
	_	or deduct points for covera  Extensive >75%  Moderate 25-75  Sparse 5-25% c	age cover (-5) % cover (-3) over (-1)	high	A predominance of native speci and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threaten	es, with nonnative spp ative spp absent or virtually and often, but not always,
		Nearly absent < Absent (1)	5% cover (0)	Mudflat and	d Open Water Class Quality	
		6d. Microtopography.		0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 t	o 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	acres)
		Vegetated humr		2	Moderate 1 to <4ha (2.47 to 9.	88 acres)
		Standing dead >	lebris >15cm (6in) >25cm (10in) dbh	3	High 4ha (9.88 acres) or more	-
		Amphibian bree	ding pools	-	graphy Cover Scale	
				1	Absent Present very small amounts or of marginal quality	if more common
				2	Present in moderate amounts, in quality or in small amounts of	
	ì			3	Present in moderate or greater and of highest quality	

End of Quantitative Rating. Complete Categorization Worksheets.

Wetland 8

## **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	Z	
•	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	4	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE	20	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland 8

## 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 (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES  Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES  Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	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?	VES  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	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, loca 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 o information for this determination should be provided.

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

ECOLOGICAL RESOURCES INVENTORY REPORT, MARYSVILLE STATION EXPANSION PROJECT, UNION COUNTY, OHIO

### D.3 HHEI DATA FORMS



# Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

ENGTH OF STREAM REACH (ft)	SITE NAMELOCATION Marysville Station	AND THE RESERVE OF TH	aum of metrics 1, 2, 3) .	
LAT. M. AURIDITI (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Maximum Pool Depth (Measured as the average of 3-4 measurements)  Ma				1 mi2
NOTE: Complete All titems On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL MODIFICATIONS:    MODIFICATIONS:   RECOVERED   RECOVERED   RECOVERING   RECENT OR NO RECOVERY MODIFICATIONS:	LENGTH OF STREAM REACH (#) 200 LAT	40 24/802 N ONG 83,43043 PINE	P CODE DIVED MILE	<u></u>
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions  STREAM CHANNEL  SINONE / NATURAL CHANNEL  RECOVERED  RECOVERING  RECOVERD  RE	DATE 8/29/LUTD SCORER NTN		R CODE RIVER WILE	
STREAM CHANNEL SINONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:    SUBSTRATE (Estimate percent of every type of substrate present. Check ONL / two predominant substrate 71/PE boxes (Max of 40). Add data number of significant substrate types found (Max of 40). Final metric score is sum of boxes A & B.   Final metric score is sum of boxes A & B.   Percent Types			Link Dinagra Const.	
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 40). Final metric score is sum of boxes A & B.   Max of 40). Add total number of significant substrate types found (Max of 40). Final metric score is sum of boxes A & B.   Type				
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.   TYPE	STREAM CHANNEL AND NONE / NATURA	L CHANNEL TRECOVERED TRECO	VERING TRECENT OR NO RECOVER	RY
Max of 40, Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.   Metric Prof.	MODIFICATIONS:			
Max of 40, Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.   HEEL				
Metric   BUR SLABS   16 pts	SUBSTRATE (Estimate percent of every ty)  (May of 40). Add total number of significant as	pe of substrate present. Check ONLY two pr	edominant substrate TYPE boxes	JUEI
BLDR SLABS [16 pts]  BOUDER (>256 mm) [16 pts]  COBBLE (65-256 mm) [17 pts]  CORRECT (2-64 mm) [9 pts]  CORRECT (2-			I NA	
BEDROCK [16 pt]	BLDR SLABS [16 pts]	SILT [3 pt]	<u> </u>	oints
COBBLE (65-256 mm) [12 pts]				ihetrate
GRAVEL (2-64 mm) (9 pts)			S] Ma	
SAND (<2 mm) [6 pits]  Total of Percentages of Bidr Slabs, Boulder, Cobbie, Bedrock   A   B   TOTAL NUMBER OF SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plungs pools from road culverts or storm water pipes) (Check ONLY one box):    30 one Minimeters (20) pits   S of cm - 10 cm (15 pits)   S of cm (15 pits)   S of cm - 10 cm (15 pits)   S of cm (15 pits)   S of cm - 10 cm (15 pits)   S of cm (15 pit	and a second to the first best and the first best a		m	71
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock  CORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:  TO 15 Steps 10 Substrate Took ON!  MAX 10 MAX 20 ON!  MAX 30 ON!  T				14
BANK FULL WIDTH (Measured as the average of 3-4 measurements)  COMMENTS  BANK FULL WIDTH (Measured as the average of 3-4 measurements)  AVERAGE BANK FULL WIDTH (Measured as the average of 3-4 measurements)  AVERAGE BANK FULL WIDTH (Measured as the average of 3-4 measurements)  COMMENTS  BANK FULL WIDTH (Measured as the average of 3-4 measurements)  COMMENTS  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  AVERAGE BANK FULL WIDTH (Reasured as the average of 3-4 measurements)  COMMENTS  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (Reasured as the average of 3-4 measurements)  RIPARIAN WIDTH  FLOODPLAIN QUALITY  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed  AVERAGE BANK FULL WIDTH (meters)  This information must also be completed	Total of Percentages of		(8)	
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):  30 centimeters [20 pts]  > 20 centimeters [20 pts]    20 centimeters [20 pts]   20 centi		_ (A) 9	(B)   S     A	A + B
evaluation. Avoid plunge pools from road culverts or storm water pipes)   (Check ONLY one box):	SCORE OF TWO MOST PREDOMINATE SUBSTRAT	E TYPES: TOTAL NUMBER	OF SUBSTRATE TYPES:	
evaluation. Avoid plunge pools from road culverts or storm water pipes)   (Check ONLY one box):	2. Maximum Pool Depth (Measure the maximum	un pool depth within the 61 meter (200 ft) e	evaluation reach at the time of Pool	ol Denti
> 22.5 - 30 cm [30 pts]	evaluation. Avoid plunge pools from road culv	erts or storm water pipes) (Check ONLY on	e box):	•
NOWATER OR MOIST CHANNEL [0 pts]   NOWATER OR NOWAT		> 5 cm - 10 cm [15 pts	5]	
BANK FULL WIDTH (Measured as the average of 3-4 measurements)			T CHANNEL [0 pts]	5
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13) [30 pts]	COMMENTS		Ica =	
> 4.0 meters (> 13) [30 pts]	COMMEN 15	MAXIMUM POO	DEPTH (centimeters):	
>3.0 m - 4.0 m (> 9 7" - 13") [25 pts]			2.00 (2.00 (2.00))	
>1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]			U.S. S. S. S. S.	
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 *NOTE: River Left (L) and Right (R) as looking downstream *  RIPARIAN WIDTH FLOODPLAIN QUALITY *NOTE: River Left (L) and Right (R) as looking downstream *  RIPARIAN WIDTH FLOODPLAIN QUALITY *NOTE: River Left (L) and Right (R) as looking downstream *  RIPARIAN WIDTH FLOODPLAIN QUALITY *  RIPARIAN WIDTH FLOODPLAIN QUALITY *  RIPARIAN WIDTH (R) as looking downstream *  RIPARIAN				
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	COMMENTS OHUM 3.6 0.	S AVERAGE BAN	KEULL WIDTH (meters)	12
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  Residentian per Bank)  Resid	1.00	0	The state of the s	
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  Residentian per Bank)  Mature Forest, Wetland Conservation Tillage  Immature Forest, Shrub or Old Immature Forest, Shrub or Old Crop  Narrow <5m Residential, Park, New Field Open Pasture, Row Crop Mining or Construction  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 2.0 3.0 3.5  STREAM GRADIENT ESTIMATE		This information must also be completed		
R		QUALITY ANOTE: River Left (L) and Ri	ght (R) as looking downstream☆	
Wide > 10m				
Moderate 5-10m				
Narrow <5m		Immature Forest, Shrub or Old	•	
None		- Tiold	Ones Beeting Benn	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 0.5 3.0 3.0 3.0 3.0 3.5  STREAM GRADIENT ESTIMATE			☐☐ Crop	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 0.5 3.0 3.0 3.0 3.0 3.5 STREAM GRADIENT ESTIMATE		Fenced Pasture	☐ ☐ Mining or Construction	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 2.0 3.0 0.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	COMMENTS			
Subsurface flow with isolated pools (Interstitial)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  0.5  STREAM GRADIENT ESTIMATE				
COMMENTS		continue to		
□ None       □ 1.0       □ 2.0       □ 3.0         □ 0.5       □ 1.5       □ 2.5       □ >3    STREAM GRADIENT ESTIMATE			- Cate (Lephonolul)	
□ None       □ 1.0       □ 2.0       □ 3.0         □ 0.5       □ 1.5       □ 2.5       □ >3    STREAM GRADIENT ESTIMATE	SINIOSITY (Number of hands per 61	m (200 ft) of channel) (Check OM V one has	۷)-	
STREAM GRADIENT ESTIMATE			· <b>-</b>	
	<b>№</b> 1 0,5 □ 1.6	5 □ 2.5		
- i introduction in the interest of the intere	☐ Flat (0 5 ft/100 ft) ☐ Flat to Moderate ☐	Moderate (2 ft/100 ft) Moderate to S	Severe (10 ft/100 ft)	

DDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):		
QHEI PERFORMED? - TYes X No QHEI Score	(If Yes, Attach Complete	ed QHEI Form)	
MM. DOWNSTREAM DESIGNATED USE(S) WWH Name:	Distance	from Evaluated Stream	~2 mi
CWH Name:		from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN			
Dearing	NRCS Soil Map Page:		1
Sounty: <u>Unidn</u> Town:			ani Ordei <u>1</u>
	nip/city: kaymoras		
MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation.	9/2017	025"	
ase Flow Conditions? (Y/N): Date of last precipitation:	Quanti	ty:	
Photograph Information:			
Elevated Turbidity? (Y/N): N Canopy (% open): 40			/
Nere samples collected for water chemistry? (Y/N): (Note lat			
Field Measures; Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)Co	nductivity (µmhos/cm) =	
s the sampling reach representative of the stream (Y/N) If not,	please explain:		
Performed? (Y/N): (If Yes, Record all observations Vouched ID number Include appropriate field date of the company of th	a sheets from the Primary Headw bserved? (Y/N) Vouche ic Macroinvertebrates Observe	vater Habitat Assessment er? (Y/N) vd? (Y/N) Vouchel	Manual)
DRAWING AND NARRATIVE DESCRIPTION			
Includa important landmarks and othar features of interest f	r site evaluation and a narrati		
met underent ?	5	mixel	1 Riparia
FLOW -	ow field	(	0
	1	(REOL)	4
mixed sipersian very	1000	(Pools)	tout

# Primary Headwater Habitat Evaluation Form

	HITEI Score (sum of metrics 1, 2, 3):	
SITE NAME/LOCATION Marysville	Station Expansion Project / Union County, OH	
AEV SITE NUMBER	LAT: 40.331118" LONG. 83.472880" RIVER CODE RIVER MILE	12mi2
DATE 8/24/2019 SCORER NTN	COMMENTS	<del></del>
NOTE: Complete All Items On This Fo	orm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / N	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	VERY
MODIFICATIONS:		
	every type of substrate present. Check ONLY two predominant substrate TYPE boxes ificant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE	PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	SILT [3 pt]	Points
□ □ BOULDER (>256 mm) [16 pts] □ □ BEDROCK [16 pt]	LEAF PACKWOODY DEBRIS [3 pts]	Substrat
OBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]	15
SAND (<2 mm) [6 pts]	20 ARTIFICIAL [3 pts]	12
Total of Percentages of	O (A) (B)	A + B
Bidr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUI		
Mandana Bard Barth (formula the		
	e maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of coad culverts or storm water pipes) (Check ONLY one box):	Pool Dep
> 30 centimeters [20 pts]	□ > 5 cm - 10 cm [15 pts]	0
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS	MAXIMUM POOL DEPTH (centimeters):	W.
BANK FULL WIDTH (Measured as the	he average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	M > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] □ ≤ 1.0 m (≤ 3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		max-30
COMMENTS DITUM = 3.0	0.3 BF = 4.5 AVERAGE BANKFULL WIDTH (meters)	15
COMMENTS DITUM = 3.0	O'D North (making)	R
	This information must also be completed	
RIPARIAN ZONE AND FLOO RIPARIAN WIDTH	DPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY	
L R (Per Bank)	L R (Most Predominant per Bank) L R	
☑ ☑ Wide >10m	☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage	
☐ ☐ Moderate 5+10m	☐ ☐ Immature Forest, Shrub or Old ☐ ☐ Urban or Industrial	
☐ ☐ Narrow <5m	Residential, Park, New Field Open Pasture, Row	
☐ ☐ None	Crop  Fenced Pasture  Mining or Construction	
COMMENTS		
	valuation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated p COMMENTS Taker	Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	
SINI IOSITY (Number of bands	s per 61 m (200 ft) of channel) (Check ONLY one box):	
☐ None	1.0 2.0 2.0 3.0	
<b>Ø</b> 0.5	☐ 1.5 ☐ 2.5 ☐ >3	
STREAM GRADIENT ESTIMATE		
Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 m/100 ft) ☐ Moderate to Severe ☐ Severe (10 m/100	ft)

Attach Completed QHEI Form)
Distance from Evaluated Stream ~ 2 mi
Distance from Evaluated Stream
Distance from Evaluated Stream  Distance from Evaluated Stream  710m;
HED AREA. CLEARLY MARK THE SITE LOCATION
lap Page:NRCS Soil Map Stream Order
Raymond
Quentity: 0.40 "
/
id, and attach results) Lab Number:
J.)Conductivity (µmhos/cm)
tional NOTE: all voucher samples must be labeled with the s ne Primary Headwater Habitat Assessment Manual)
I) Voucher? (Y/N) Voucher? (Y/N)
AM REACH (This <u>must</u> be completed):
AM REACH (This <u>must</u> be completed): on and a narrative description of the stream's location
on and a narrative description of the stream's location
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on and a narrative description of the stream's location

# **Onio-FPA** Primary Headwater Habitat Evaluation Form

	HHEI Score (sum of metrics 1, 2, 3):	
	Stram 2 RIVER BASIN Scioto DRAINAGE AREA (mi²) LAT. 40,33591°N LONG. 83465571°RIVER CODE RIVER MILE	1 mi 2
LENGTH OF STREAM REACH (ft)	LAT. 40,355910 LONG: 83,455571 RIVER CODE RIVER MILE	
DATE 8 29 2017 SCORER KLB	COMMENTS	
NOTE: Complete All Items On This Fo	orm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / N MODIFICATIONS:	NATURAL CHANNEL IN RECOVERED IN RECOVERING IN RECENT OR NO RECO	OVERY
SUBSTRATE (Estimate percent of a     (Max of 40) Add total number of signi	every type of substrate present. Check ONLY two predominant substrate TYPE boxes ifficent substrate types found (Max of 8). Finel metric score is sum of boxes A & B.	HHEI
TYPE	PERCENT TYPE PERCENT	Metric
□ □ BLDR SLABS [16 pts] □ □ BOULDER (>256 mm) [16 pts]	SILT [3 pt]  LEAF PACK/WOODY DEBRIS [3 pts]	Point
BEDROCK [16 pt]	FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]	17
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]	10
Totel of Percenteges of Bldr Slebs, Boulder, Cobble, Bedrock	O (A) 9	A + B
SCORE OF TWO MOST PREDOMINATE SUE	BSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from re	oad culverts or storm weter pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	0
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	0
COMMENTS	MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as th		Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] = 1.0 m (≤ 3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	12	1
COMMENTS OHWM = 3	3' 0.5' AVERAGE BANKFULL WIDTH (meters)	15
TOB = 4	L' 1'	and the second
RIPARIAN ZONE AND FLOOI	(-) (-) (-)	
RIPARIAN WIDTH  LaR (Per Benk)	FLOODPLAIN QUALITY  L R (Most Predominent per Benk) L R	
Wide >10m	L R (Most Predominent per Benk) L R  Meture Forest, Wetlend D Conservetion Tillege	
Moderate 5-10m	Immeture Forest, Shrub or Old	
☐ ☐ Nerrow <5m	Residential, Perk, New Field Open Pesture, Row	
□ □ None	Crop  Fenced Pesture  Mining or Construction	
COMMENTS	Willing of Construction	
FLOW REGIME (At Time of Et	valuation) (Check ONLY one box):	
Streem Flowing Subsurface flow with isolated no	Moist Chennel, isoleted pools, no flow (Intermittent)	
Subsurface flow with isolated po	ools (Interstitiel)  Ophemeral  Dry channel, no water (Ephemerel)	
SINIOSITY (Number of bends	per 61 m (200 ft) of channel) (Check ONLY one box):	
. □ None □	] 1.0	
0.5	J 1.5	
STREAM GRADIENT ESTIMATE	<b>a</b> -	
Flat (0.5 ft/100 ft) Flei to Moderate	☐ Moderate (2 1/100 ft) ☐ Moderate to Severe ☐ Severe (10 1/100	Oft)

MISCELLANEOUS  Provided Conditions? (Y/N):	DDITIONAL STREAM INFORMATION (This Information Must Also be Completed)	<u>L</u>
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  S Quadrangle Name: Pe or ia NRCS Soil Map Page: NRCS Soil Map Stream Order  Inty: MISCELLANEOUS  Flow Conditions? (Y/N): Date of last precipitation 9/19/1017 Quantity: 0, 25"  ograph Information: ated Turbidity? (Y/N): Canopy (% open): 100  e samples collected for water chemistry? (Y/N): M (Note lab sample no. or id. and attach results) Lab Number.  It Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)  e sampling reach representative of the stream (Y/N) Y If not, please explain: M/A  tional comments/description of pollution impacts: MPAF.  BIOTIC EVALUATION  ormed? (Y/N): Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Noucher? (Y/N) Noucher	QHEI PERFORMED? - Tyes No QHEI Score(If Yes, A	ttach Completed QHEI Form)
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  S Quadrangle Name: Pe or ia NRCS Soil Map Page: NRCS Soil Map Stream Order  Inty: MISCELLANEOUS  Flow Conditions? (Y/N): Date of last precipitation 9/19/1017 Quantity: 0, 25"  ograph Information: ated Turbidity? (Y/N): Canopy (% open): 100  e samples collected for water chemistry? (Y/N): M (Note lab sample no. or id. and attach results) Lab Number.  It Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)  e sampling reach representative of the stream (Y/N) Y If not, please explain: M/A  tional comments/description of pollution impacts: MPAF.  BIOTIC EVALUATION  ormed? (Y/N): Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Noucher? (Y/N) Noucher	Mod. DOWNSTREAM DESIGNATED USE(S)  WWH Name: Blues Creek  CWH Name: Mill Cures K	Distance from Evaluated Stream N 2 Sm
MISCELLANEOUS  Flow Conditions? (Y/N): Y Date of last precipitation: 9/19/2017 Quantity: 0.25"  ograph Information:  ated Turbidity? (Y/N): N Canopy (% open): 100  e samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:  e sampling reach representative of the stream (Y/N) H (not, please explain: MA  tional comments/description of pollution impacts: N/N/E  BIOTIC EVALUATION  ormed? (Y/N): N (if Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the si ID number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual)  Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Nouther? (Y/N) No		
MISCELLANEOUS  Provided Conditions? (Y/N):	SGS Quadrangle Name: Peoria NRCS Soil Ma	p Page: NRCS Soil Map Stream Order
MISCELLANEOUS  Prov Conditions? (Y/N): Y Date of last precipitation: 9 129 12017 Quantity. 0.25"  ograph Information:  ated Turbidity? (Y/N): N Canopy (% open): 100  e samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number.  It Measures: Temp ("C) Dissolved Oxygen (mg/n) pH (S.U.) Conductivity (µmhos/cm)  e sampling reach representative of the stream (Y/N) If not, please explain: 110  BIOTIC EVALUATION  ormed? (Y/N): N (If Yes, Record all observations, Voucher collections optional. NOTE: all voucher samples must be labeled with the single number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual)  Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vou	ounty: Unit a Township / City.	Raymond
ated Turbidity? (Y/N):	MISCELLANEOUS	9
e samples collected for water chemistry? (Y/N):	Photograph Information:	
e samples collected for water chemistry? (Y/N):	Elevated Turbidity? (Y/N): Canopy (% open): 100	
BIOTIC EVALUATION  ormed? (Y/N):		d. and attach results) Lab Number:
BIOTIC EVALUATION  ormed? (Y/N):		
BIOTIC EVALUATION  Ormed? (Y/N):	the sampling reach representative of the stream (Y/N)_Y If not, please explain:	_ <i>N</i> /A
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Early Succe riparion forest  Overhanding very	Oerformed? (Y/N): (If Yes, Record all observations, Voucher collections option ID number. Include appropriate field data sheets from the Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinverted Comments Regarding Biology:	Primary Headwater Habitat Assessment Manual)  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Early Succe riparion forest  Overhanding very		
	health important landmarks and other factures of interest for cits augustio	n and a narrative description of the stream's location
ow dry channel o	FLOW dry channe	The Car
	Tenana	X

# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):	24
SITE NAMELOCATION Manysville Station Expansion Project / Union County, Obio	
AEP SITE NUMBER SHEWM 3 RIVER BASIN SCIOTO DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (#) 100 LAT. 46, 3294 NLONG. 83, 434 DRIVER CODE RIVER MILE_	
DATE 8/30/2019 SCORER NTN COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL Ø NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO REC	·OVEDV
MODIFICATIONS:	OVERI
1. SUBSTRATE (Estimata parcant of a very typa of substrata prasant. Check ONLY two predominant substrate TYPE boxes	1
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	HHEI   Metric
BLDR SLABS [16 pts] SILT [3 pt] 90	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts]	Substrata
□ □ BEDROCK [16 pt]         □ □ FINE DETRITUS [3 pts]         5           □ □ COBBLE (65-256 mm) [12 pts]         □ □ CLAY or HARDPAN [0 pt]         □ □ CLAY or HARDPAN [0 pt]	Max = 40
□ □ COBBLE (65-256 mm) [12 pts]       □ □ CLAY or HARDPAN [0 pt]         □ □ GRAVEL (2-64 mm) [9 pts]       □ □ MUCK [0 pts]	
□ SAND (<2 mm) [6 pts] □ □ ARTIFICIAL [3 pts]	9
Total of Percentages of (A) (B)	A+B
Bldr Slabs, Boulder, Cobble, Bedrock `	ATB
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Poot Dapth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dapth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts]	Max = 30
☐ > 22.5 - 30 cm [30 pts] ☐ < 5 cm [5 pts]	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTSMAXIMUM POOL DEPTH (centimaters):	
3. BANK FULL WIDTH (Maasured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
□ > 4.0 meters (> 13') [30 pts] ≥ 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
0.1	15
COMMENTS DAWN 3,9 Depth 0,3 AVERAGE BANKFULL WIDTH (maters)	
This tnformation must also be completed	
RtPARIAN ZONE AND FLOODPLATN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
LR (Per Bank) LR (Most Predominant per Bank) LR  D Wide >10m D Mature Forest, Wetland D Conservation Tillage	
☐☐ Moderate 5-10m ☐☐ Immature Forest, Shrub or Old ☐☐☐ Urban or Industrial	
Field	
Narrow Com Residential, Park, New Field Crop	
☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Moist Channel, isolated pools, no flow (Intermitten)	)
☐ Subsurface flow with isolated pools (Interstitial)	
COMMENTS EPhonesal	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None	
□ None □ 1.0 □ 2.0 □ 3.0 □ 3.0 □ 3.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	

QHEI PERFORMED? - 🗍 Yes 🗷 No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: Mill Creek-	Distance from Evaluated Stream ~ Imi
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
SGS Quadrangle Name: Peoria	NRCS Soil Map Page: NRCS Soil Map Stream Order
ounty: Union Towns	hip/city. Raymond.
MISCELLANEOUS	Ů,
ase Flow Conditions? (Y/N): Date of last precipitation:	5/29/2019 Quantity: 0.25"
notograph Information:	
evated Turbidity? (Y/N): Canopy (% open):	<u> </u>
/ere samples collected for water chemistry? (Y/N):(Note lab	sample no. or id and attach results) Lab Number:
eld Measures: Temp (°C) / Dissolved Oxygen (mg/l)	pH (S.U.)Conductivity (µmhos/cm)
the sampling reach representative of the stream (Y/N) $\underline{\hspace{1cm}}$ If not,	please explain:
dditional comments/description of pollution impacts:	
BIOTIC EVALUATION	
	r collections optional. NOTE: all voucher samples must be labeled with the
	a sheets from the Primary Headwater Habitat Assessment Manual)
ish Observed? (Y/N) Voucher? (Y/N) Salamanders O rogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquat	bserved? (Y/N) Voucher? (Y/N)
rods or Ladholes Observed? (Y/N) - Volicher? (Y/N) - Adii at	ic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest fo	I OF STREAM REACH (This <u>must</u> be completed): It site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest fo	I OF STREAM REACH (This <u>must</u> be completed): It site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest fo	I OF STREAM REACH (This <u>must</u> be completed):  If site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest fo	I OF STREAM REACH (This <u>must</u> be completed): It site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest fo	I OF STREAM REACH (This <u>must</u> be completed): In site evaluation and a narrative description of the stream's location
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# Chiefp Primary Headwater Habitat Evaluation Form

50
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SITE NAME LOCATION WAS VILLE STATION EXPANSION PROJECT / Union County, Dhis SITE NUMBER STREAM REACH (RI) O LAT. 40.332443 NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	
STREAM CHANNEL   NONE/NATURAL CHANNEL   RECOVERED   RECOVERING   RECENT OR NO RECOMMODIFICATIONS: Man made mitigation channel	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	HHEI Metric Points Substrate Max = 40
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):    > 30 centimeters [20 pts]	Pool Depth Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]	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 FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  Check ONLY one box): None  1.0  Check ONLY one box): None  3.0	
0.5	

QHEI PERFORMED? - Tyes No QHEI Score(II	f Yes, Altach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
J WWH Name:	
CWH Name:	Distance from Evaluated Stream
EWH Name: Will Cycle	Distance from Evaluated Stream ~ 1,5 mi
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WA	TERSHED AREA. CLEARLY MARK THE SITE LOCATION
SGS Quadrangle Name: NRCS	Soil Map Page: NRCS Soil Map Stream Order
county: Township / City	Raymond
MISCELLANEOUS	J
ase Flow Conditions? (Y/N): Y Date of last precipitation: 8/29	/2019 Quantity D.25"
	additity.
hotograph Information:	
levated Turbidity? (Y/N): N Canopy (% open): 100	
Vere samples collected for water chemistry? (Y/N): (Note lab sample	
ield Measures: Temp (°C) 24-9 Dissolved Oxygen (mg/l) pl	/
s the sampling reach representative of the stream (Y/N) If not, please e	explain:
dditional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher collection	
ID number. Include appropriate field data sheets	from the Primary Headwater Habitat Assessment Manual)
ID number. Include appropriate field data sheets in the Observed? (Y/N) Voucher? (Y/N) Salamanders Observed	from the Primary Headwater Habitat Assessment Manual)  ? (Y/N)  Voucher? (Y/N)
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### Marysville-Union County Solar Generation Tie Line Project

### **Ecological Survey Report**

Prepared for:

MYR Energy Services, Inc. 55 East Monroe Street Chicago, IL 60603

Prepared by:

Stantec Consulting Services Inc. 10200 Alliance Road, Suite 300 Cincinnati, OH 45242

January 24, 2023

## **Sign-off Sheet**

This document entitled Marysville-Union County Solar Generation Tie Line Project Ecological Survey Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of MYR Energy Services, Inc. Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

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(signature)

Daniel J. Godec

**Daniel Godec** 

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Introduction January 24, 2023

#### 1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) and MYR Energy Services, Inc. are proposing construction activities associated with the Marysville-Union County Solar Generation Tie Line Project. The Project includes the installation of new electric transmission structures near the existing AEP Marysville Station facility, as well as north of State Route 347 near the Marysville Station facility in order to tie into/interconnect with the planned Independent Power Producer (IPP) Union Solar Project. The portion of the Project located south of State Route 347 was previously surveyed for ecological resources by Stantec Consulting Services Inc. (Stantec) under contract with AEP as part of the Marysville Station Expansion Project in 2017 and 2020. The portion of the Project which was not previously surveyed by Stantec (hereafter referred to as the Project area) begins northeast of the intersection of State Route 347 and Patrick-Brush Run Road and extends northwest approximately 0.25 miles in Liberty Township, Union County, Ohio (Figure 1, Appendix A). The Project area was surveyed for wetlands, waterbodies, open water features, and potential threatened, endangered, and rare species habitat by Stantec biologists on January 5, 2023. The approximate locations of features located up to 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project area. The approximate locations of these features are shown on the Figure 2 maps in Appendix A as "approximate" wetlands, streams (waterways), open waters, and upland drainage features.

Methods January 24, 2023

### 2.0 METHODS

#### 2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, and aerial imagery mapping. No NWI-mapped features are located within the Project area. Stantec completed a wetland delineation study in accordance with the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE 2010). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

#### 2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high-water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2020) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline of each waterway and/or the OHWM of each waterway was identified and surveyed using a handheld sub-meter accuracy global positioning system (GPS) unit and mapped with geographic information system (GIS) software. Additionally, the locations of ponds/open water features and upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

#### 2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by federally listed or state-listed species that have the potential to occur within Union County.

Results January 24, 2023

## 3.0 RESULTS

#### 3.1 TERRESTRIAL HABITAT

Stantec completed field surveys on January 5, 2023, for threatened and endangered species or their habitats. Figure 3 (Appendix A) shows the vegetation communities/habitats identified within the Project area and the locations of any identified rare, threatened, or endangered species habitat observed within the Project area during the time of the habitat assessment surveys. Representative photographs of the vegetation communities/habitats and land cover types identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 3, Appendix A). Information regarding the vegetation communities/habitats/land cover types identified within the Project area is provided in Table 1.

Table 1. Vegetation Communities and Land Cover Types Found within the Marysville-Union County Solar Generation Tie Line Project Area, Union County, Ohio

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Agricultural Land	Extreme Disturbance/Ruderal Community dominated by planted row crop species such as corn (Zea mays), soybean (Glycine max), and common wheat (Triticum aestivum).	No	9.51
Old Field	Extreme Disturbance/Ruderal Community dominated by opportunistic invaders and/or native highly tolerant taxa. Common plant species included velvetleaf (Abutilon theophrasti), Canada goldenrod (Solidago canadensis), Allegheny blackberry (Rubus allegheniensis), Japanese bristlegrass (Setaria faberi), Indianhemp (Apocynum cannabinum), white avens (Geum canadense), and Fuller's teasel (Dipsacus fullonum).	No	0.51
Residential Lawn	Extreme Disturbance/Ruderal Community dominated by opportunistic invaders and/or native highly tolerant taxa. Common plant species included common plantain (Plantago major), Kentucky bluegrass (Poa pratensis), perennial ryegrass (Lolium perenne), white clover (Trifolium repens), and common dandelion (Taraxacum officinale).	No	0.32
Existing Roadway	Extreme Disturbance/existing gravel or paved road without vegetation.	No	0.14

Results January 24, 2023

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Mixed Early Successional/ Second Grown Deciduous Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and/or opportunistic invaders). Common plant species included common hackberry (Celtis occidentalis), American sycamore (Platanus occidentalis), bitternut hickory (Carya cordiformis), Allegheny blackberry, American elm (Ulmus americana), northern red oak (Quercus rubra), black walnut (Juglans nigra), and eastern redcedar (Juniperus virginiana)	No	0.66
Palustrine Emergent Wetland	Moderate Disturbance/Natural Community (dominated by native herbaceous species and/or opportunistic invaders). Common plant species included butterweed (Packera glabellla), redroot amaranth (Amaranthus retroflexus), cursed buttercup (Ranunculus scleratus), and purple deadnettle (Lamium purpureum).	No	0.05
		TOTAL	11.19

#### 3.2 WETLANDS

One palustrine emergent wetland was delineated within the Project area during the field surveys completed on January 5, 2023. Table 2 provides information about the wetland delineated within the Project area. Two additional wetland determination sample points were evaluated within the Project area in the locations most likely to meet the criteria to be considered a wetland. Representative photographs of the wetland and wetland determination sample points are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). The completed ORAM and wetland determination data forms are included in Appendix D.

Results January 24, 2023

Table 2. Summary of Wetland Resources Found within the Marysville-Union County Solar Generation Tie Line Project Area, Union County, Ohio

		Location				Delineated	ORAM⁵		Nearest	Existing	Proposed		Proposed	Impacts
Wetland ID	Latitude	Longitude	Photo Location <sup>1</sup>	Isolated?²	Habitat Type <sup>3,4</sup>	Area within	Score	Category	Proposed Structure Number	Structure Number in Wetland	Structure Number in Wetland	Structure Installation Method	Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland 1	40.3367	-83.4399	7	Yes	PEM	0.05	14	1	N/A	N/A	N/A	N/A	TBD	TBD
					TOTAL:	0.05		TOTAL:					TBD	TBD

<sup>&</sup>lt;sup>1</sup> Appendix B - Figure 2 and Appendix D – Wetland and Waterbody Delineation Photographs

<sup>&</sup>lt;sup>2</sup> Pending USACE jurisdictional review

<sup>&</sup>lt;sup>3</sup> Habitat type based on Cowardin et al. (1979).

<sup>&</sup>lt;sup>4</sup> PEM = Palustrine Emergent Wetland

<sup>&</sup>lt;sup>5</sup> ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetland v. 5.0 (Mack 2001).

Results January 24, 2023

#### 3.3 STREAMS

One ephemeral stream was identified in the Project area during Stantec's January 5, 2023 site visit. Figure 2 (Appendix A) shows the location of the stream identified by Stantec within the Project area. Representative photographs of the stream are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). A completed HHEI data form for the identified stream is included in Appendix D. Information regarding the identified stream is provided in Table 3.

Table 3. Summary of Stream Resources Found within the Marysville-Union County Solar Generation Tie Line Project Area, Union County, Ohio

	Location				Dalinantad	Damlefull	ОНММ	Field Evalu		uation	Ohio a		-	oosed oacts	
Stream ID	Latitude	Longitude	Stream Type	Stream Name <sup>1</sup> Length (feet)			Bankfull Width (feet)	Width (feet)	Method	Score <sup>2,3</sup>	Category/ Rating/ OAC Use Designation <sup>2.3,4</sup>	EPA 401 Eligibility	Stream Crossing?	Fill Type	Area (acre)
Stream 1	40.337532	-83.443837	Ephemeral	UNT to Mill Creek	65	2	1.5	HHEI	15	Class I Primary Headwater	Eligible	TBD⁵	TBD <sup>5</sup>	TBD⁵	
				TOTAL:	65								TOTAL:	0	

<sup>&</sup>lt;sup>1</sup>UNT = Unnamed Tributary

<sup>&</sup>lt;sup>2</sup>Based on the designated use evaluation presented in the Field Methods for Evaluating Primary Headwater Habitat Streams in Ohio, Version 4.0 (OEPA 2020).

Based on the designated use evaluation presented in the Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (OEPA 2006).

<sup>&</sup>lt;sup>4</sup>Based on Ohio Administrative Code (OAC) 3745-1-16.

<sup>&</sup>lt;sup>5</sup>TBD – To be determined. Impact information is unknown at this time.

Results January 24, 2023

## 3.4 OPEN WATERS

No open waters were identified within the Project area during Stantec's January 5, 2023 site visit.

## 3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Federally Listed and Ohio State-Listed Species within the Marysville-Union County Solar Generation Tie Line Project Area, Union County, Ohio

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
	1			Mammals		
Indiana Bat/Myotis sodalis	E	E	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2022b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Potentially suitable foraging and roosting habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. No potential	<ul> <li>ODNR – This Project lies within the range of the Indiana bat. Therefore, if suitable habitat occurs within the Project area and trees need to be cut, the ODNR recommends cutting only occur between October 1 and March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible. If trees are present within the project area, and trees must be cut during the summer months, the ODNR recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. If state listed bats are documented, ODNR recommends cutting only occur from October 1 through March 31. In addition, the ODNR recommends a desktop habitat assessment, followed by field a field assessment if needed, is conducted to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that a potential hibernaculum is present within the Project area or within 0.25 miles of the Project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the ODNR recommends a 0.25-mile tree cutting and subsurface disturbance buffer be established around the potential hibernaculum entrance. However, limited summer or winter tree cutting may be acceptable after consultation with the ODNR. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this Project is not likely to impact this species.</li> <li>USFWS – The Indiana bat occurs throughout the State of Ohio. The Indiana bat may be found</li> </ul>	Potentially suitable foraging and roosting habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. A desktop bat hibernacula habitat assessment was completed by Stantec and no potential bat hibernacula were identified within the Project area or its vicinity (Figure 4; Appendix A). No potential hibernacula were observed within the Project area.  Avoidance Dates: April 1 – September 30

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
					wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats. If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted between June 1 and August 15 for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year.	
Northern Long-eared Bat/Myotis septentrionalis	E	T	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2020). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	within the Project	ODNR – This Project lies within the range of the northern long-eared bat. Therefore, if suitable habitat occurs within the Project area and trees need to be cut, the ODNR recommends cutting only occur between October 1 and March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible. If trees are present within the project area, and trees must be cut	Potentially suitable foraging habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. A desktop bat hibernacula habitat assessment was completed by Stantec and no potential bat hibernacula were identified within the Project area or its vicinity (Figure 4; Appendix A). No potential hibernacula were observed within the Project area.  Avoidance Dates: April 1 – September 30

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
					area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the ODNR recommends a 0.25-mile tree cutting and subsurface disturbance buffer be established around the potential hibernaculum entrance. However, limited summer or winter tree cutting may be acceptable after consultation with the ODNR. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this Project is not likely to impact this species.	
					USFWS – If no caves or abandoned mines may be disturbed and tree removal is unavoidable, seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) is recommended. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule.	
Little Brown Bat/Myotis lucifugus	E	N/A	This bat uses a wide range of habitats and man-made structures for roosting, including buildings and attics. Less frequently, they use hollows of trees. Winter hibernation sites typically consist of caves, tunnels, abandoned mines. Foraging habitat for this species generally occurs over water, along the edges of lakes and stream, or in woodlands near waterbodies (NatureServe 2022).	Potentially suitable foraging and roosting habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. No potential hibernacula were observed within the Project area.	ODNR - This Project lies within the range of the little brown bat. Therefore, if suitable habitat occurs within the Project area and trees need to be cut, the ODNR recommends cutting only occur between October 1 and March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible. If trees are present within the project area, and trees must be cut during the summer months, the ODNR recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. If state listed bats are documented, ODNR recommends cutting only occur from October 1 through March 31. In addition, the ODNR recommends a desktop habitat assessment, followed by field a field assessment if needed, is conducted to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that a potential hibernaculum is present within the Project area or within 0.25 miles of the Project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the ODNR recommends a 0.25-mile tree cutting and	Potentially suitable foraging and roosting habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. A desktop bat hibernacula habitat assessment was completed by Stantec and no potential bat hibernacula were identified within the Project area or its vicinity (Figure 4; Appendix A). No potential hibernacula were observed within the Project area.  Avoidance Dates: April 1 – September 30

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
					subsurface disturbance buffer be established around the potential hibernaculum entrance. However, limited summer or winter tree cutting may be acceptable after consultation with the ODNR. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this Project is not likely to impact this species.  USFWS - No comments received.	
Tricolored Bat/Perimyotis subflavus	E	PE	This species is found throughout Ohio and is associated with forested landscapes, foraging near trees and along waterways. Maternity and summer roosts usually occur in dead or live tree foliage, or in the south, in clumps of Spanish moss. Maternity colonies may also use tree cavities or man-made structures, such as buildings or bridges. Caves, mines, and rock crevices may be used as winter hibernacula and/or summer night roosts between foraging (NatureServe 2022).	growth deciduous forest) was observed within the Project area. No potential	ODNR - This Project lies within the range of the tricolored bat. Therefore, if suitable habitat occurs within the Project area and trees need to be cut, the ODNR recommends cutting only occur between October 1 and March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 inches if possible. If trees are present within the project area, and trees must be cut during the summer months, the ODNR recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. If state listed bats are documented, ODNR recommends cutting only occur from October 1 through March 31. In addition, the ODNR recommends a desktop habitat assessment, followed by field a field assessment if needed, is conducted to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that a potential hibernaculum is present within the Project area or within 0.25 miles of the Project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the ODNR recommends a 0.25-mile tree cutting and subsurface disturbance buffer be established around the potential hibernaculum entrance. However, limited summer or winter tree cutting may be acceptable after consultation with the ODNR. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this Project is not likely to impact this species.  USFWS - No comments received.	Potentially suitable foraging and roosting habitat (mixed early successional/second growth deciduous forest) was observed within the Project area. A desktop bat hibernacula habitat assessment was completed by Stantec and no potential bat hibernacula were identified within the Project area or its vicinity (Figure 4; Appendix A). No potential hibernacula were observed within the Project area.  Avoidance Dates: April 1 – September 30

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
				Birds		
Northern Harrier/Circus hudsonius	E	N/A	Harriers hunt low over grasslands, with wings held in a distinctive dihedral (V-shape). This is a common migrant and winter species; nesters are much rarer, although they occasionally breed in large marshes and grasslands (ODNR 2018). Northern harriers appear to be associated with large tracts of undisturbed habitat. They are uncommon in blocks of contiguous grassland less than 100 hectares (Slater and Rock 2005).	No suitable nesting habitat was observed within the Project area.	ODNR – The Project is within the range of the northern harrier. 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.	Northern harriers require large tracts of wetlands and/or grasslands that are 100 hectares (247 acres) or more for suitable breeding/nesting habitat (Slater and Rock 2005). No suitable nesting habitat (large tracts of wetlands and/or grasslands) were observed within the Project area. Therefore, no impacts are anticipated and avoidance dates are not applicable.
					<b>USFWS</b> - No comments received.	
	1			Mussels		
Northern Riffleshell/ Epioblasma torulosa rangiana	Е	E	This mussel is found in a wide variety of streams from small to large. Habitat for this species includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (NatureServe 2022).	No suitable habitat was observed within the Project area.	ODNR – The Project area is within the range of the northern riffleshell. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Rabbitsfoot/Quadrula cylindrica	E	Т	Typical habitat for this species is small to medium-sized rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Rabbitsfoot are also found in medium to large rivers in sand and gravel (NatureServe 2022).	No suitable habitat was observed within the Project area.	ODNR – The Project area is within the range of the rabbitsfoot. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Snuffbox/Epioblasma triquetra	E	Е	The snuffbox occurs in medium-sized streams to large rivers, generally on mud, rocky, gravel, or sand substrates in flowing water. They are often deeply buried in substrate and overlooked by collectors (NatureServe 2022). It is found in a wide range of particle sized substrates; however, swift shallow riffles with sand and gravel are where it is typically found	No suitable habitat was observed within the Project area.	ODNR – The Project area is within the range of the snuffbox. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
			(Parmalee and Bogan 1998; Watters et al. 2009).			
Rayed Bean/Villosa fabalis	Е	Е	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increased substrate stability (NatureServe 2022; Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No suitable habitat was observed within the Project area.	ODNR – The Project area is within the range of the rayed bean. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Clubshell/Pleurobema clava	E	E	The clubshell occurs in medium to small rivers and streams, containing clean, coarse sand and cobble substrates (USFWS 1994). The clubshell is usually found within the current, where it may live several inches underneath the surface. It is most common in the downstream ends of riffles and islands (Watters et al. 2009). The clubshell is mostly considered an Ohio River system species, including the Tennessee, Cumberland, Kanawha, and Wabash river drainages. However, it is also found within the Maumee River system of Lake Erie. Although historically the clubshell was originally described as occurring within Lake Erie, only one record of its occurrence there has been found (Watters et al. 2009).	No suitable habitat was observed within the Project area	ODNR – The Project area is within the range of the clubshell mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Elephant-ear/Elliptio crassidens crassidens	E	N/A	This mussel is found in muddy sand, sand, and rocky substrates in moderate currents. In some areas, it is common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (NatureServe 2022).	I NA CUITANA NANITAT	ODNR – The Project area is within the range of the elephant-ear. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.  USFWS – No comments received.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

### MARYSVILLE-UNION COUNTY SOLAR GENERATION TIE LINE PROJECT ECOLOGICAL SURVEY REPORT

Results January 24, 2023

Common Name/ Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comments (Appendix B)	Potential Impacts and Avoidance Dates
Pondhorn/Uniomerus tetralasmus	T		This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is tolerant of poor water conditions and can be found well buried in a substrate of fine silt and/or mud. It has been known to survive for extended periods of time when a pond or slough has temporarily dried up by burying itself deep into the substrate (NatureServe 2022).	No suitable habitat was observed within the Project area.	ODNR – The Project area is within the range of the pondhorn. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact this species.  USFWS – No comments received.	No suitable habitat was observed within the Project area. Additionally, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

<sup>1</sup>E=Endangered; T=Threatened; N/A= Not Applicable

<sup>2</sup>According to ODNR, State Listed Wildlife and Plant Species by County (ODNR 2022a).

<sup>3</sup>According to Information for Planning and Consultation website (USFWS 2022a).

Conclusions and Recommendations January 24, 2023

### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbody delineation and a preliminary habitat assessment for threatened and endangered species within the Project area on January 5, 2023. One palustrine emergent (PEM) wetland (Wetland 1) totaling approximately 0.05 acres was identified within the Project area. Additionally, one ephemeral stream (Stream 1) totaling approximately 65 linear feet in length was identified within the Project area. Completed data forms for the identified stream and wetland features are provided in Appendix D and representative photographs are provided in Appendix C.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time of the field work. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on December 5, 2022. The ODNR Office of Real Estate response dated January 10, 2023 (Appendix B) states that there are no records of state or federally listed plants or animals within one mile of the Project area.

The ODNR stated that the entire state of Ohio is within the range of the state-listed endangered Indiana bat, northern long-eared bat, little brown bat, and tricolored bat. If trees are present within the Project area, and trees must be cut, the ODNR recommends cutting only occur from October 1 – March 31, conserving trees with loose, shaggy bark and/or crevices holes, or cavities as well as trees with diameter at breast height (dbh)  $\geq 20$  inches if possible. If trees are present within the Project area and trees must be cut during the summer months, the ODNR recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. If state listed bats are documented, the ODNR recommends cutting only occur from October 1 through March 31.

The ODNR also recommended that a desktop habitat assessment be conducted, followed by a field assessment if needed, to determine if there are potential bat hibernacula present within 0.25 miles of the Project area. Stantec completed a desktop habitat desktop assessment in accordance with the 2022 Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2022b) utilizing available ODNR websites, including data on known abandoned or active mines (ODNR 2022b) and locations of known or suspected karst geology (ODNR 2022c). The desktop assessment did not identify any caves, abandoned underground mines, active underground mines, or other potential bat hibernacula within the Project area or a 3-mile buffer of it (Figure 4, Appendix A). Additionally, no potential bat hibernacula were identified within the Project area. Potentially suitable summer roosting habitat was identified within the Project area. AEP intends to conduct any necessary tree clearing between October 1 and March 31. If any tree clearing is required outside of that timeframe, AEP will conduct the required agency coordination and proceed accordingly with agency recommendations.

#### MARYSVILLE-UNION COUNTY SOLAR GENERATION TIE LINE PROJECT ECOLOGICAL SURVEY REPORT

Conclusions and Recommendations January 24, 2023

The ODNR states that the Project is within the range of the following federally listed and/or statelisted threatened and endangered mussel species: snuffbox, clubshell, northern riffleshell, rayed bean, rabbitsfoot, elephant-ear, and pondhorns. Furthermore, the ODNR states that this Project must not have an impact on freshwater native mussels at the Project site and this applies to both listed and non-listed mussel species. Per the Ohio Mussel Survey Protocol (ODNR and USFWS 2020), all Group 2, 3, and 4 streams require a mussel survey if impacts to them will be required for construction of the Project. Additionally, Group 1 streams and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (ODNR and USFWS 2020) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If impacts are unavoidable, a professional malacologist is recommended to conduct a mussel survey in the Project area. If mussels that cannot be avoided are found in the Project area, those mussels are to be collected and relocated by a professional malacologist and done in accordance with the Ohio Mussel Survey Protocol. Since no in-water work is proposed by AEP in a perennial stream, impacts to the above listed mussel species are not anticipated. As stated, no perennial streams were identified within the Project area.

The ODNR states that the Project is within the range of the state-listed endangered northern harrier. The northern harrier occasionally nests in large marshes and grasslands in Ohio. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species. However, no potentially suitable nesting habitat is present within the Project area for this species. Therefore, this Project is not likely to impact this species and nesting season avoidance dates are not applicable.

A technical assistance request letter was submitted to the USFWS on December 5, 2022. The USFWS response letter dated December 16, 2022, recommends that impacts to wetlands and other water resources be avoided or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation (Appendix B).

According to the USFWS response, all projects in the State of Ohio lie within range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio, presence of these species is assumed wherever suitable habitat occurs unless a presence/probable absence survey has been performed to document probable absence. The USFWS response letter states that, should the Project site contain trees ≥3 inches dbh, the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, the USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommended that summer presence/probable absence surveys be conducted between June 1 and August 15.

### MARYSVILLE-UNION COUNTY SOLAR GENERATION TIE LINE PROJECT ECOLOGICAL SURVEY REPORT

Conclusions and Recommendations January 24, 2023

Additionally, the USFWS states that they do not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the Project type, size, and location.

References January 24, 2023

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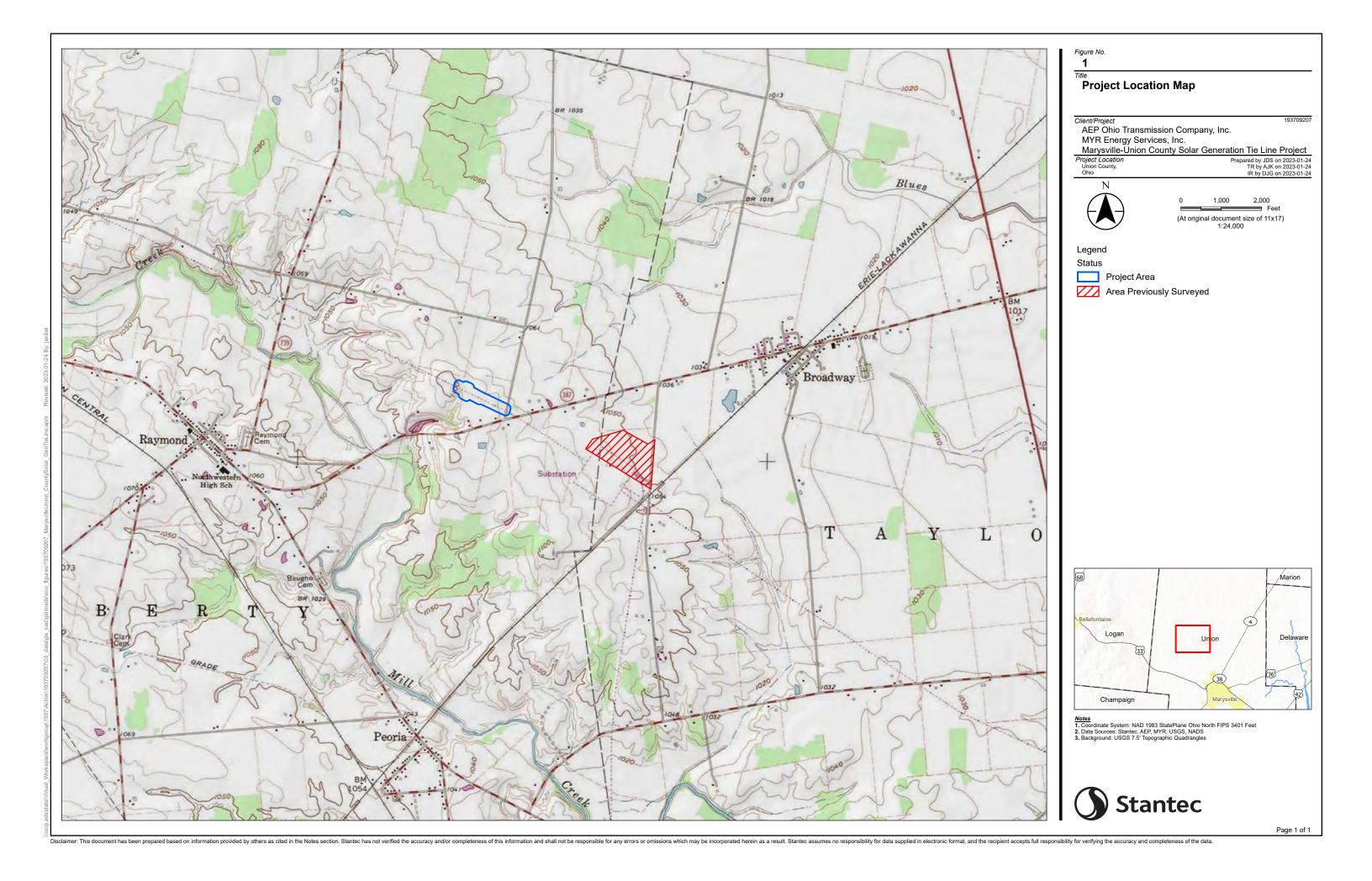
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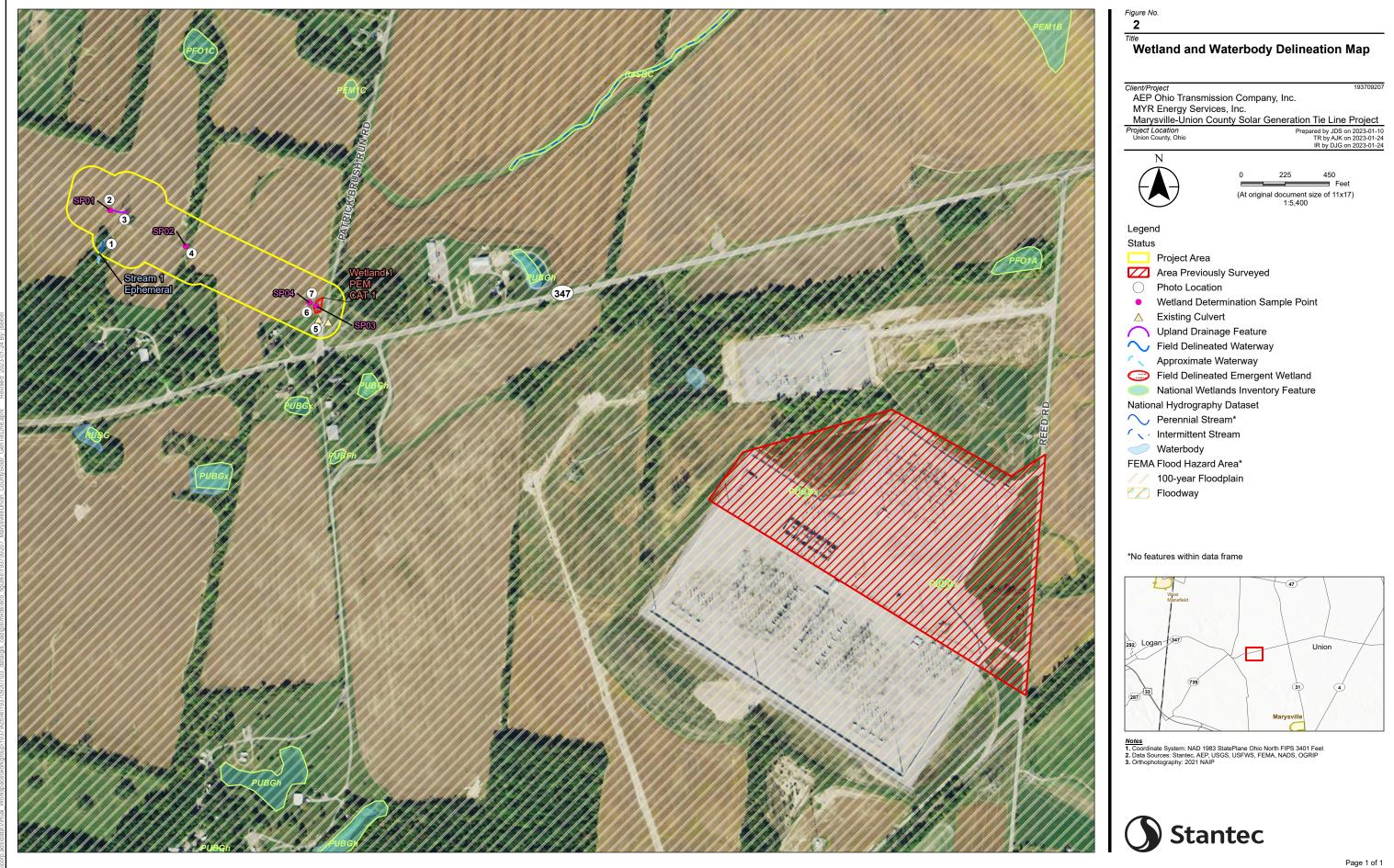
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# Appendix A FIGURES

# A.1 FIGURE 1 – PROJECT LOCATION MAP

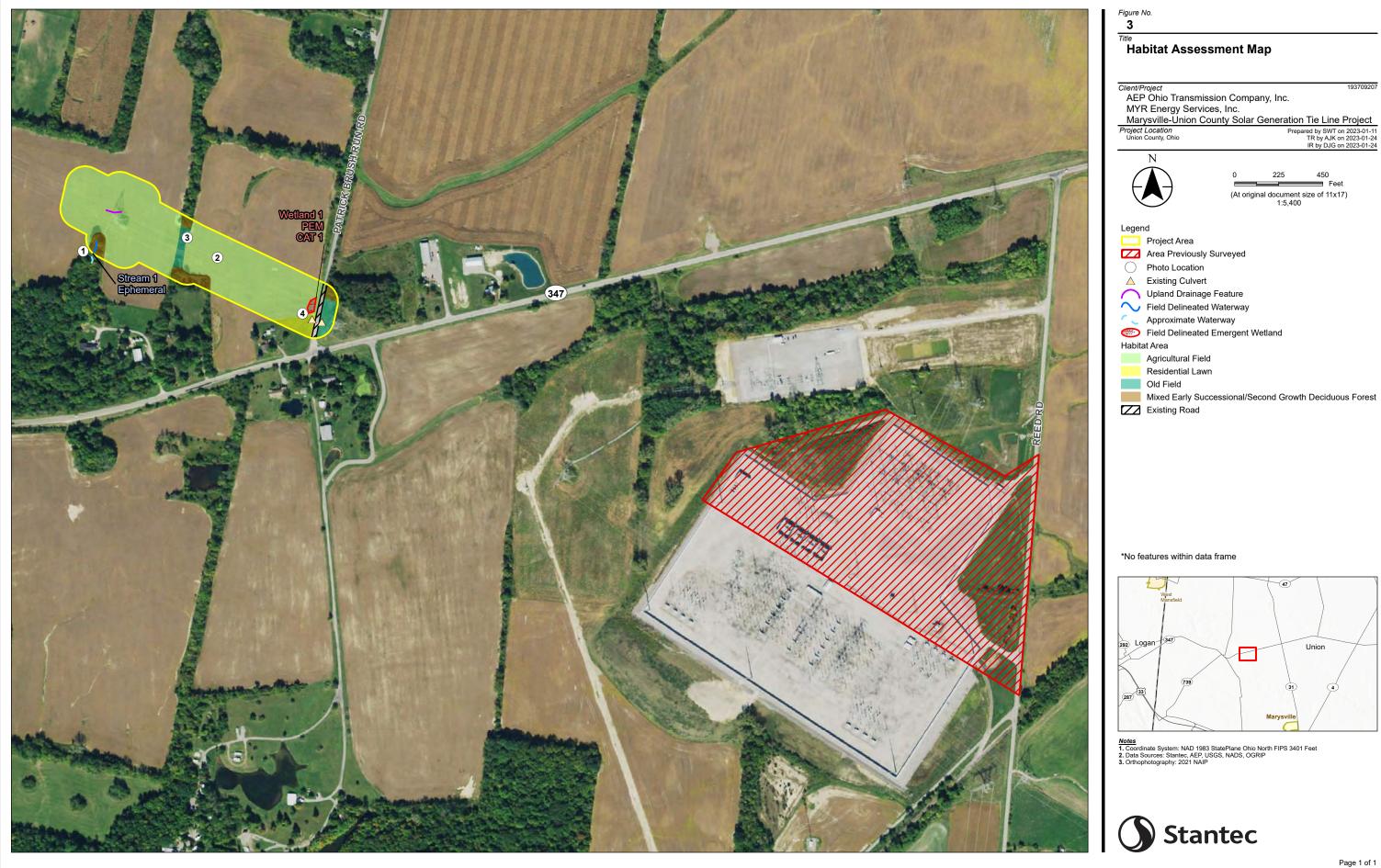


### A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP



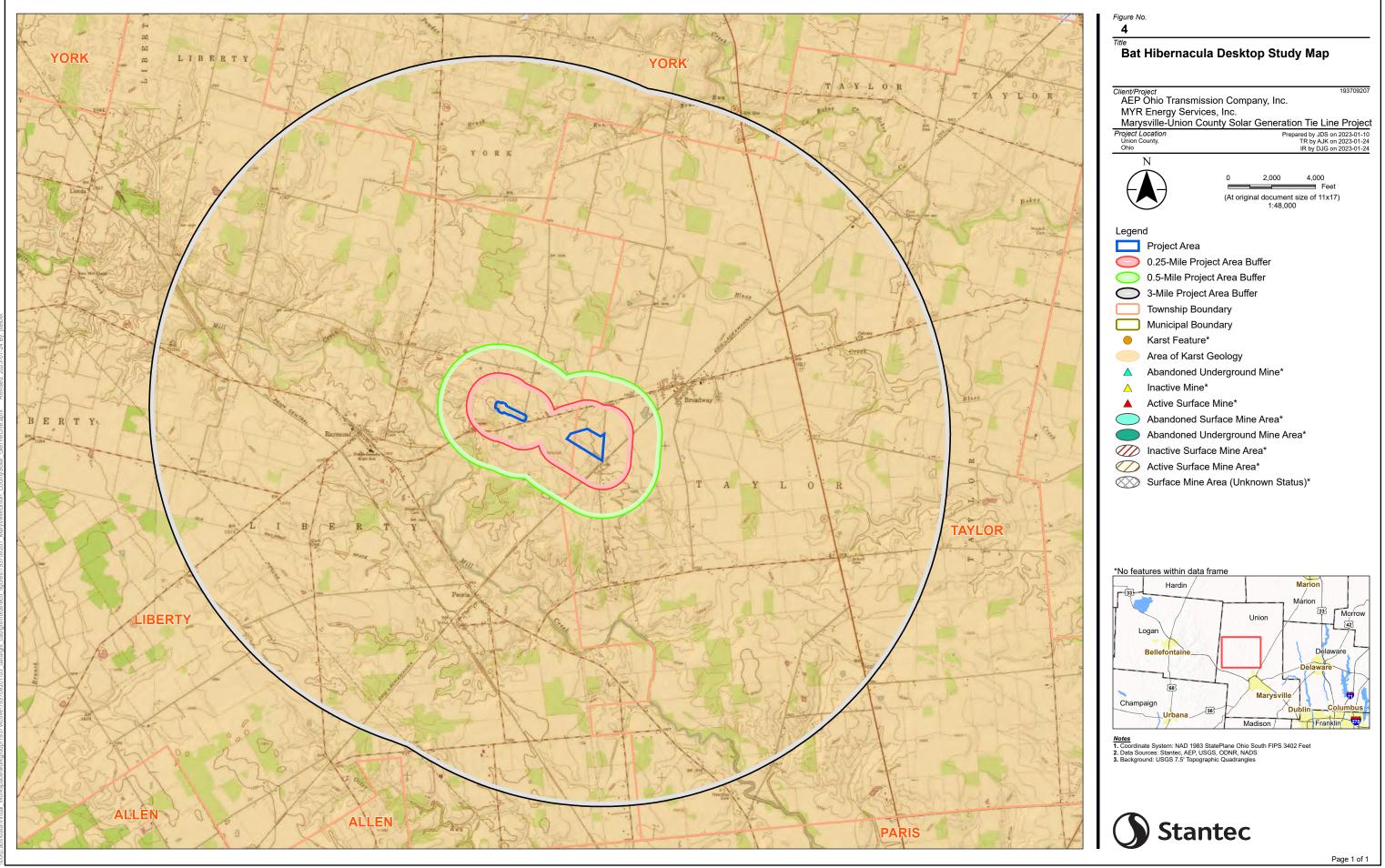
Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsibility for verifying the accuracy and completeness of the data.

## A.3 FIGURE 3 – HABITAT ASSESSMENT MAP



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsibility for verifying the accuracy and completeness of the data.

# A.4 FIGURE 4 – BAT HIBERNACULA DESKTOP STUDY MAP



# **Appendix B AGENCY CORRESPONDENCE**



# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Fax: (614) 267-4764

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

January 10, 2023

Daniel Godec Stantec Consulting Services Inc. 11687 Lebanon Road Cincinnati, OH 45241

Re: 22-1237; Marysville-Union County Solar Generation Tie Line Project

**Project:** The proposed project involves facilitating the interconnection of the Cadence Solar generating facility and storage facility into AEP's existing Marysville 345 kV Station facility.

Location: The proposed project is located in Taylor and Liberty Townships, Union 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 entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

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

Federally Endangered

snuffbox (*Epioblasma triquetra*)

clubshell (*Pleurobema clava*)

Northern riffleshell (*Epioblasma torulosa rangiana*)

rayed bean (Villosa fabalis)

#### Federally Threatened

rabbitsfoot (Quadrula cylindrica cylindrica)

#### State Endangered

elephant-ear (Elliptio crassidens crassidens)

#### State Threatened

pondhorn (*Uniomerus tetralasmus*)

Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

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

Due to the potential 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 <u>local floodplain administrator</u> 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 <a href="mike.pettegrew@dnr.ohio.gov">mike.pettegrew@dnr.ohio.gov</a> if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator

### **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



December 16, 2022

Project Code: 2023-0021802

Reference: Marysville-Union County Solar Generation Tie Line project

Dear Mr./Ms,

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

Federally Threatened and Endangered Species: The endangered Indiana bat (Myotis sodalis) and threatened northern long-eared bat (Myotis septentrionalis) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees  $\geq 3$  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.

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. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see https://ecos.fws.gov/ecp/species/9045), incidental take of Indiana bats is still prohibited without

a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

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

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

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

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

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

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

Sincerely,

Patrice Ashfield Field Office Supervisor

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

# Appendix C REPRESENTATIVE PHOTOGRAPHS

## C.1 WETLAND AND WATERBODY PHOTOGRAPHS



AEP Ohio Transmission Company, Inc. Marysville-Union County Solar Generation Tie Line Project Liberty Township, Union County, Ohio



Photograph Location 1. View of Stream 1. Photograph taken facing upstream/north.



Photograph Location 1. View of Stream 1. Photograph taken facing downstream/south.





Photograph Location 1. View of substrates of Stream 1.



Photograph Location 2. View of upland (agricultural field) at wetland determination sample point location SP01. Photograph taken facing east.





Photograph Location 2. View of upland (agricultural field) at wetland determination sample point location SP01. Photograph taken facing west.



Photograph Location 2. View of soil profile at wetland determination sample point location SP01.





Photograph Location 3. Representative view of an upland drainage feature within the Project area. Photograph taken facing east.



Photograph Location 3. Representative view of an upland drainage feature within the Project area. Photograph taken facing west.





Photograph Location 4. View of upland (old field habitat) at wetland determination sample point location SP02. Photograph taken facing north.



Photograph Location 4. View of upland (agricultural field) at wetland determination sample point location SP02. Photograph taken facing south.





Photograph Location 4. View of soil profile at wetland determination sample point location SP02.



Photograph Location 5. Representative view of existing culvert within the Project area. Photograph taken facing east.





Photograph Location 5. Representative view of existing culvert within the Project area. Photograph taken facing west.



Photograph Location 6. View of Wetland 1. Photograph taken facing north.





Photograph Location 6. View of Wetland 1. Photograph taken facing east.



Photograph Location 6. View of Wetland 1 and residential lawn habitat located south of it.

Photograph taken facing south.





Photograph Location 6. View of Wetland 1. Photograph taken facing west.



Photograph Location 6. View of soil profile at wetland determination sample point location SP03.





Photograph Location 7. View upland (agricultural field) at wetland determination sample point location SP04. Photograph taken facing southeast.



Photograph Location 7. View upland (agricultural field) at wetland determination sample point location SP04. Photograph taken facing northwest.





Photograph Location 7. View of soil profile at wetland determination sample point location SP04.

### **C.2 HABITAT PHOTOGRAPHS**





Photograph Location 1. Representative view of mixed early successional/second growth deciduous forest habitat within the Project area. Photograph taken facing northwest.



Photograph Location 1. Representative view of mixed early successional/second growth deciduous forest habitat within the Project area. Photograph taken facing southeast.





Photograph Location 2. Representative view of agricultural field habitat within the Project area. Photograph taken facing southeast.



Photograph Location 2. Representative view of agricultural field habitat within the Project area. Photograph taken facing south.





Photograph Location 3. Representative view of old field habitat within the Project area. Photograph taken facing north.



Photograph Location 3. Representative view of old field habitat within the Project area.

Photograph taken facing west





Photograph Location 4. Representative view of residential lawn and agricultural field habitats within the Project area. Photograph taken facing south.

## Appendix D DATA FORMS

#### D.1 WETLAND DETERMINATION DATA FORMS



## WETLAND DETERMINATION DATA FORM Midwest Region

Duningt/City											
Project/Site:	Marysville-Ur	nion County Solar Gene	ration Tie Line	e Project			Stantec Project #:	19370	9207	Date:	01/05/23
Applicant:	AEP Ohio	Transmission Comp	any, Inc.							County:	Union
Investigator #1:	Cyrus Chas	stain	•	Invest	igator #2:	Matt De	nzler			State:	Ohio
Soil Unit:		nwood silt loam, end mor	aine 2-6% slo		igato: //2:		IWI/WWI Classification	· NA		Wetland ID:	N/A
Landform:	•	nwood siit loam, cha moi	anic, 2-070 310	•	cal Relief:			. 147 (			
	Dip	1 22 1	40.0000					D - 4		Sample Point:	
Slope (%):	0-2%		40.33807		ongitude:			Datum:		Community ID:	
		ditions on the site typ			year? (If no	, explain in i			No	Section:	
Are Vegetation	☑ , Soil ☑, ﹝	or Hydrology □sigr	nificantly dis	sturbed?			Are normal circumsta	•	?	Township:	
Are Vegetation	🗆 , Soil 🗀,	or Hydrology □natι	urally proble	ematic?			✓ Yes	NΦ		Range:	Dir:
<b>SUMMARY OF</b>											
Hydrophytic Ve	netation Pres	sent?		□ Yes	. ☑ No			Hydric Soils	Present?		☐ Yes ☑ No
Wetland Hydrol				☐ Yes						Within A Wetla	
Remarks:	Ag Field	:		_ 103	<u> </u>			is This Carri	Jillig i Ollic	VVIIIIII A VVCue	and: — res — No
Remarks.	Ag Fleid										
HYDROLOGY											
Wetland Hydr	ology Indica	ators (Check here if	indicators	are not n	resent	)⊡					
Primary:		ators (Oncor norch	indicators (	are not p	1030III	<i>)</i> —			Secondary:		
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves		Occordary.	B6 - Surface So	oil Cracks
	A2 - High Wa				B13 - Aqu						
	A3 - Saturation				B14 - True					C2 - Dry-Seaso	
	B1 - Water M				C1 - Hydr					C8 - Crayfish B	
	B2 - Sedimer	nt Deposits					spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift De	posits			C4 - Pres	ence of Re	duced Iron		✓		Stressed Plants
	B4 - Algal Ma	at or Crust			C6 - Rece	ent Iron Re	duction in Tilled Soils			D2 - Geomorph	nic Position
	B5 - Iron Dep				C7 - Thin	Muck Surf	ace			D5 - FAC-Neuti	ral Test
		on Visible on Aerial Ima			D9 - Gauç						
	B8 - Sparsely	y Vegetated Concave S	urface		Other (Ex	plain in Re	marks)				
Field Observat	ions:										
Surface Water	Present?	☐ Yes ☑ No	Depth:	0	(in.)						
Water Table Pr		☐ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Pr	esent?	Yes ☑ No
Saturation Pres		☐ Yes ☑ No			` '						
Saturation Pres	ent?	□ Yes ⊡ No	Depth:	U	(in.)						
Describe Record	lad Data (etr										
	icu Dala (Sili	eam gauge, monitorir	ıg well, aeria	al photos,	previous i	inspection	ıs), if available:		N/A		
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Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0 6 NRCS Hydric	Estion (Describe to Depth 6 14 Soil Field In A1- Histosol	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end morbeence of indical Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen	% slopes concentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6	ox Features	Type C s for Problen	Location  M praitic Soils <sup>1</sup> Prairie Redox	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic E	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2  ndicators (check he	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor bsence of indica Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S5 - Sand	% slopes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix	ox Features	Type  C s for Problem A16 - Coast S7 - Dark S	Location  M	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic E; A3 - Black Hi	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2  ndicators (check he pipedon istic	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor bsence of indica Matrix Moist)  4/2  5/2      ors are n	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S6 - Stripi	% slopes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix	Ox Features	ation: PL=Pore Lining  Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-N	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth 0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic EI A3 - Black Hi A4 - Hydroge	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 adicators (check he pipedon istic en Sulfide	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor bsence of indica Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen \$4 - Sand \$5 - Sand \$6 - Stripp F1 - Loarn	% slopes oncentration, D=  10YR   10YR    t )☑ ly Gleyed I ly Redox ly Red	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix	Ox Features	ation: PL=Pore Lining Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic E; A3 - Black Hi	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2       adicators (check he pipedon istic en Sulfide d Layers	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S6 - Stripi	% slopes concentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix	ox Features	ation: PL=Pore Lining Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	bition (Describe to Depth 6 14	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2       adicators (check he pipedon istic en Sulfide d Layers	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S6 - Stript F7 - Loam F2 - Loam	% slopes oncentration, D=  10YR   10YR    t )☑  ty Gleyed ly Redox ped Matrix my Muck Mny Gleyed eted Matrix my Gleyed ete	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix	ox Features	ation: PL=Pore Lining Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	bition (Describe to Depth 6 14	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers luck ed Below Dark Surface	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S5 - Sard S6 - Stripp F1 - Loam F3 - Deple	% slopes oncentration. D=  10YR t )☑ ly Gleyed I ly Redox ped Matrix ny Muck M ny Gleyed Metrix	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix inface	ox Features	ation: PL=Pore Lining Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic El A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplet A12 - Thick I	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers fluck Below Dark Surface Dark Surface	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor bsence of indica Matrix Moist) 4/2 5/2	aine, 2-6% tors.) (Type: C=C  % 100 60 ot presen S4 - Sand S6 - Stripi F1 - Loam F3 - Deple F6 - Redc	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features	ation: PL=Pore Lining Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N TF12 - Very	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	bition (Describe to Describe to Depth 6 14	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers fluck Below Dark Surface Dark Surface	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  (Type: C=C  %  100  60     ot presen  \$4 - Sand  \$5 - Strip  F1 - Loarr  F2 - Loarr  F3 - Peple  F7 - Deple  F7 - Deple	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features	Type C 5 for Problen A16 - Coast S7 - Dark S F12 - Iron-N Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay es
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic EI A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy M S3 - 5 cm Mt	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 adicators (check he pipedon istic en Sulfide d Layers fluck be Dark Surface Dark Surface Muck Mineral Jucky Peat or Peat	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  100  60    ot presen  \$4 - Sand  \$5 - Sarip  F1 - Loam  F2 - Loam  F3 - Peple  F6 - Redo	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features % 40 Indicators   ¹ Indicators of hydroph	Type  Type  C     5 for Problen  A16 - Coast  S7 - Dark S  F12 - Iron-N  TF12 - Very  Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic EI A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy M S3 - 5 cm Mt	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 dicators (check he pipedon istic en Sulfide d Layers Auck duck Below Dark Surface Dark Surface Muck Mineral	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  100  60    ot presen  \$4 - Sand  \$5 - Sarip  F1 - Loam  F2 - Loam  F3 - Peple  F6 - Redo	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features	Type  Type  C     5 for Problen  A16 - Coast  S7 - Dark S  F12 - Iron-N  TF12 - Very  Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Me Type:	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1 2 adicators (check he pipedon istic en Sulfide d Layers fluck be Dark Surface Dark Surface Muck Mineral Jucky Peat or Peat	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  100  60    ot presen  \$4 - Sand  \$5 - Sarip  F1 - Loam  F2 - Loam  F3 - Peple  F6 - Redo	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features % 40 Indicators   ¹ Indicators of hydroph	Type  Type  C     5 for Problen  A16 - Coast  S7 - Dark S  F12 - Iron-N  TF12 - Very  Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Me Type:	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers fluck ded Below Dark Surface bark Surface fluck Mineral ucky Peat or Peat  Compacted Clay	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  100  60    ot presen  \$4 - Sand  \$5 - Sarip  F1 - Loam  F2 - Loam  F3 - Peple  F6 - Redo	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features % 40 Indicators   ¹ Indicators of hydroph	Type  Type  C     5 for Problen  A16 - Coast  S7 - Dark S  F12 - Iron-N  TF12 - Very  Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay
Remarks:  SOILS  Map Unit Name Profile Descrip  Top Depth  0 6 NRCS Hydric	Bottom Depth 6 14 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A10 - 2 cm M A11 - Deplete A12 - Thick I S1 - Sandy M S3 - 5 cm Me Type:	Gwe1B2 - Glynwoo the depth needed to document the indi  Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers fluck ded Below Dark Surface bark Surface fluck Mineral ucky Peat or Peat  Compacted Clay	d silt loam, eator or confirm the at Color (I 10YR 10YR 	end mor beence of indica Matrix Moist) 4/2 5/2 ors are n	aine, 2-6%  100  60    ot presen  \$4 - Sand  \$5 - Sarip  F1 - Loam  F2 - Loam  F3 - Peple  F6 - Redo	% slopes oncentration, D=  10YR  10YR   1-  10YR   1-  1-  1-  1-  1-  1-  1-  1-  1	Depletion, RM=Reduced Matrix, CS=Covered Red Color (Moist) 4/6 Matrix ineral Matrix : face Surface Surface	ox Features % 40 Indicators   ¹ Indicators of hydroph	Type  Type  C     5 for Problen  A16 - Coast  S7 - Dark S  F12 - Iron-N  TF12 - Very  Other (Expla	Location  M	(e.g. clay, sand, loam silty clay loam clay



## WETLAND DETERMINATION DATA FORM Midwest Region

Sample Point: SP01 Project/Site: Marysville-Union County Solar Generation Tie Line Project Wetland ID: N/A **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 2. Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) 7. 8. Prevalence Index Worksheet 9 Total % Cover of: Multiply by: 10. x 1 = OBL spp. --Total Cover = x 2 = FACW spp. FAC spp. 0 x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) FACU spp. x 4 = 0 0 1. x 5 = UPL spp. 75 375 2. 3. Total 75 (A) 375 4. 5. Prevalence Index = B/A = 5.000 6. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation ☐ Yes 10 √ No. Dominance Test is > 50% Total Cover = 0 ☐ Yes ✓ No Prevalence Index is ≤ 3.0 \* ☐ Yes ✓ No Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ✓ No ☐ Yes Problem Hydrophytic Vegetation (Explain) \* Glycine max 60 UPL \* Indicators of hydric soil and wetland hydrology must be 2. Ν **UPL** Draba verna 5 present, unless disturbed or problematic. 3. Leucanthemum vulgare 10 Ν UPL 4. **Definitions of Vegetation Strata:** 5. --\_\_ 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8 Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. 10. 11 12. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 75 Woody Vine Stratum (Plot size: 30 ft radius) 1 2. 3. Hydrophytic Vegetation Present ☐ Yes ☑ No 4. 5. Total Cover = 0 Remarks: Additional Remarks:



## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:	Marysville - l	Jnion County Solar Gen	eration Tie Lii	ne Project	i		Stantec Project #:	19370	9207	Date:	01/05/23
Applicant:		Transmission Compa	any, Inc.							County:	Union
Investigator #1:				Invest	igator #2:					State:	Ohio
Soil Unit:		nt silt loam, end moraine,	0-2% slopes				IWI/WWI Classification:	NA .			N/A
Landform:	Depression				cal Relief:					Sample Point:	
Slope (%):	0-1%	Latitude:	40.33758	L	ongitude:			Datum:		Community ID:	
		ditions on the site typ				, explain in r			No	Section:	
		or Hydrology  ☐sigr					Are normal circumsta		?	Township:	
		or Hydrology □natι	urally proble	matic?			✓ Yes	NŪ		Range:	Dir:
SUMMARY OF											
Hydrophytic Ve	getation Pre	sent?		☐ Yes				Hydric Soils			☐ Yes ☑ No
Wetland Hydrol	ogy Present	?		☐ Yes	⊠ No			Is This Sam	pling Point \	Within A Wetla	and? 🔲 Yes 🛂 No
Remarks:											
<b>HYDROLOGY</b>											
Wetland Hydro	ology Indic	ators (Check here if	indicators	are not n	resent	)☑					
Primary		ators (Oncor norch	ilidioators t	are not p	1000111	<i>,</i>			Secondary:		
<u> </u>	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves			B6 - Surface So	oil Cracks
	A2 - High Wa				B13 - Aqu						
	A3 - Saturati	on			B14 - Tru					C2 - Dry-Seaso	
	B1 - Water N				C1 - Hydr					C8 - Crayfish B	
	B2 - Sedime						spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift De						educed Iron		닏		Stressed Plants
				=			duction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep				C7 - Thin				Ц	D5 - FAC-Neuti	ral lest
		on Visible on Aerial Ima			D9 - Gauç Other (Ex						
	Do - Sparser	y Vegetated Concave S	uriace		Other (Ex	piain in Ke	marks)				
Field Observed	•										
Field Observat											
Surface Water	Present?	☐ Yes ☑ No	Depth:	0	(in.)			Wetland Hy	drology Pr	resent?	Yes ☑ No
Water Table Pr	esent?	☐ Yes ☑ No	Depth:	0	(in.)			rrottana my	u.o.ogy		1.00 = 1.0
Saturation Pres	ent?	☐ Yes ☑ No	Depth:	0	(in.)						
Doscribo Pocord	lod Data (etr	eam gauge, monitorin	a woll poris	l photos	provious i	inenaction	s) if available:		N/A		
	eu Data (Sti	eam gauge, monitorin	ig well, aella	ii priotos,	previous i	mspection	is), ii avaliable.		14/74		
Remarks:											
SOILS											
SOILS Map Unit Name		Ble1A1 - Blount silt									
SOILS Map Unit Name Profile Descrip							Depletion, RM=Reduced Matrix, CS=Covered/	Coated Sand Grains; Loc	ration: PL=Pore Lining	3, M=Matrix)	
SOILS Map Unit Name								Coated Sand Grains; Loc DX Features	ration: PL=Pore Lining	g, M=Matrix)	Texture
SOILS Map Unit Name Profile Descrip	otion (Describe to			osence of indica Matrix					ation: PL=Pore Lining	g, M=Matrix)  Location	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top	Bottom	the depth needed to document the indi	cator or confirm the al	osence of indica Matrix	tors.) (Type: C=C		Redo	ox Features		1	
SOILS Map Unit Name Profile Descrip Top Depth	Bottom Depth 4	the depth needed to document the indi	Color (I	Matrix Moist) 4/2	% 100	concentration, D=	Color (Moist)	ox Features % 	Type 	Location 	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4	Bottom Depth 4 10	Horizon  1 2	Color (I 10YR 10YR	Matrix Moist)  4/2 4/2	% 100 95	oncentration, D=	Color (Moist) 3/6	% Features 5	Type  C	Location  M	(e.g. clay, sand, loam) silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 14	Horizon  1 2 3	Color (I 10YR 10YR 10YR	Matrix Moist) 4/2 4/2 4/2	% 100 95 50	oncentration, D=	Color (Moist) 3/6	% Features	Type C	Location M	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 14	Horizon  1 2 3	Color (I  10YR  10YR  10YR  10YR  10YR	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50	oncentration, D=i	Redd Color (Moist) 3/6	% 5	Type C	Location M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	Bottom Depth 4 10 14	Horizon  1 2 3	Color (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50 50	10YR	Redd Color (Moist) 3/6	5	Type C	Location M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	btion (Describe to  Bottom Depth 4 10 14	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50	noncentration, D=	Redd Color (Moist) 3/6	5	Type C	Location M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10	btion (Describe to  Bottom Depth 4 10 14	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50		Redo Color (Moist) 3/6	5	Type C	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 4 10	btion (Describe to  Bottom Depth 4 10 14	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50		Redd Color (Moist) 3/6	5	Type C	Location M	(e.g. clay, sand, loam) silty clay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 4 10	btion (Describe to  Bottom Depth 4 10 14	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6	% 100 95 50		Redo Color (Moist) 3/6	Section	Type C	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Bottom Depth 4 10 14 Soil Field Ir A1- Histosol	Horizon  1 2 3 ndicators (check her	Color (I 10YR 10YR 10YR 10YR 10YR	seence of indical Matrix Moist) 4/2 4/2 4/2 4/6	% 100 95 50 ot presen S4 - Sano		Redd Color (Moist) 3/6	Section	Type C s for Problen	Location  M praitic Soils <sup>1</sup> Prairie Redox	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to  Bottom Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E	Horizon  1 2 3 ndicators (check helpipedon	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    Drs are n	% 100 95 50 50 ot presen S4 - Sanc S5		Redd Color (Moist) 3/6	Section   Sect	Type C s for Problem A16 - Coast S7 - Dark S	Location  M matic Soils <sup>1</sup> E Prairie Redox urface	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to  Bottom Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H	Horizon  1 2 3 ndicators (check heipipedon istic	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	% 100 95 50 50 55 - Sanc S6 - Stripl	nocentration, D=	Redd Color (Moist) 3/6 Matrix	Section   Sect	Type C s for Problen A16 - Coast S7 - Dark S F12 - Iron-N	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to  Bottom Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic S A3 - Black H A4 - Hydroge	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix   Moist   Matrix   Matrix	% 100 95 50 50 ot presen S4 - Sanc S5 - Strip F1 - Loan	nocentration, D=	Redo Color (Moist) 3/6 Matrix	Statures   Statures	Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroga A5 - Stratifie	Horizon  1 2 3 ndicators (check her	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/6    ors are n	% 100 95 50 50 S4 - Sanc S6 - Strip F1 - Loan F2 - Loan F	In the second se	Redo Color (Moist)  3/6  Matrix	Section   Sect	Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm M	Horizon  1 2 3 ndicators (check here) pipedon istic sits Sulfide d Layers //uck	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/6	% 100 95 50 50 ot presen S4 - Sanc S5 - Satrip F1 - Loan F3 - Deple T5 - Deple T	ancentration, D=	Redo Color (Moist)  3/6  Matrix ineral Matrix	Statures   Statures	Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Depth	Horizon  1 2 3 ndicators (check helpipedon istic en Sulfide d Layers Muck ed Below Dark Surface	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/6    ors are n	% 100 95 50 50	oncentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface	Statures   Statures	Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS  Map Unit Name Profile Descrip  Top Depth  0  4  10    NRCS Hydric	btion (Describe to Depth	Horizon  1 2 3 dicators (check her pipedon istic en Sulfide d Layers Muck ed Below Dark Surface Dark Surface	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	% 100 95 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	Statures   Statures	Type C s for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam
SOILS  Map Unit Name Profile Descrip  Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy M	Horizon  1 2 3 ndicators (check her pipedon istic en Sulfide d Layers //uck ed Below Dark Surface //uck Mineral	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/6    ors are n	% 100 95 50	oncentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	Section   Sect	Type C s for Problen A16 - Coast S7 - Dark S F12 - IronN TF12 - Very Other (Expla	Location  M Prairie Redox urface Manganese Mass Shallow Dark Siain in Remarks)	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam silty clay loam es
SOILS  Map Unit Name Profile Descrip  Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrogd A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy M S3 - 5 cm M	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	100 95 50 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	ox Features % 5 Indicators of hydropt	Type  C s for Problen A16 - Coast F7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam es er ere present, unless disturbed or problematic
SOILS  Map Unit Name Profile Descrip  Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy M	Horizon  1 2 3	Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	100 95 50 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	Section   Sect	Type  C s for Problen A16 - Coast F7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam silty clay loam silty clay loam silty clay loam es
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Horizon  1 2 3	cator or confirm the at Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	100 95 50 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	ox Features % 5 Indicators of hydropt	Type  C s for Problen A16 - Coast F7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam es er ere present, unless disturbed or problematic
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Horizon  1 2 3 ndicators (check here) pipedon istic en Sulfide d Layers // duck de Below Dark Surface // duck Mineral // Lucky Peat or Peat N/A	cator or confirm the at Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	100 95 50 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	ox Features % 5 Indicators of hydropt	Type  C s for Problen A16 - Coast F7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam es er ere present, unless disturbed or problematic
SOILS Map Unit Name Profile Descrip Top Depth 0 4 10 NRCS Hydric	btion (Describe to Describe to Depth 4 10 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Horizon  1 2 3 ndicators (check here) pipedon istic en Sulfide d Layers // duck de Below Dark Surface // duck Mineral // Lucky Peat or Peat N/A	cator or confirm the at Color (I 10YR 10YR 10YR 10YR 10YR	Matrix Moist)  4/2  4/2  4/2  4/6    ors are n	100 95 50 50	ancentration, D=	Redo Color (Moist) 3/6 Matrix ineral Matrix inface Surface Surface	ox Features % 5 Indicators of hydropt	Type  C s for Problen A16 - Coast F7 - Dark S F12 - Iron-N TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam es er ere present, unless disturbed or problematic



Project/Site:

#### WETLAND DETERMINATION DATA FORM Midwest Region

Wetland ID: N/A

Sample Point: SP02 Marysville - Union County Solar Generation Tie Line Project **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 2. Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 3. 4. Total Number of Dominant Species Across All Strata: 3 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) 7. 8. Prevalence Index Worksheet 9 Total % Cover of: Multiply by: 10. x 1 = OBL spp. --Total Cover = x 2 = FACW spp. 0 FAC spp. x 3 = 15 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 65 260 1. x 5 = UPL spp. 40 200 2. 3. Total 110 (A) 475 4. 5. Prevalence Index = B/A = 4.318 6. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ☐ Yes ✓ No Rapid Test for Hydrophytic Vegetation ☐ Yes 10 √ No. Dominance Test is > 50% Total Cover = 0 ☐ Yes ✓ No Prevalence Index is ≤ 3.0 \* ☐ Yes ✓ No Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No ☐ Yes Problem Hydrophytic Vegetation (Explain) \* Rubus allegheniensis 10 **FACU** \* Indicators of hydric soil and wetland hydrology must be FACU 2. 20 Dipsacus fullonum present, unless disturbed or problematic. **FACU** 3. Solidago canadensis 15 Ν 4. Lamium purpureum 40 UPL **Definitions of Vegetation Strata:** Υ 5. Setaria faberi 20 **FACU** 6 Apocynum cannabinum 5 Ν **FAC** Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8 Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. 10. 11 12. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 110 Woody Vine Stratum (Plot size: 30 ft radius) 1 2. 3. Hydrophytic Vegetation Present ☐ Yes ☑ No 4. 5. Total Cover = 0 Remarks: Additional Remarks:



## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:		Union County Solar Gen		ne Project	t		Stantec Project #:	19370	9207	Date:	01/05/23
Applicant:		Transmission Comp	any, Inc.							County:	Union
Investigator #1:				Invest	igator #2:			NIA		State:	Ohio Wattanal 4
Soil Unit:		ınt silt loam, end moraine,	2-4% slopes		al Daliafo		NWI/WWI Classification:	NA .			Wetland 1
Landform: Slope (%):	Depressior 0-2%		40 22675		cal Relief:		046	Datum:		Sample Point:	
		ditions on the site typ	40.33675	time of	ongitude:				No	Community ID: Section:	PEM
		or Hydrology  sign				o, explain in r	Are normal circumsta			Township:	_
		or Hydrology □ signor Hydrology □ natu					✓ Yes	N.		Range:	Dir:
SUMMARY OF		or riyurology — natt	arany proble	matio:			_ 100	110-		range.	DII.
Hydrophytic Ve		sent?		✓ Yes	s □ No			Hydric Soils	Present?		
Wetland Hydrol				✓ Yes						Within A Wetla	
Remarks:	Farmed we								3		
LIVERGLOOV											
HYDROLOGY		. (0)				`_					
		ators (Check here if	indicators a	are not p	resent	)☑			0		
<u>Primary:</u> ☑	_	Water		П	B9 - Wate	er-Stained	Leaves		Secondary:	B6 - Surface So	nil Cracks
	A2 - High Wa				B13 - Aqu						
	A3 - Saturati				B14 - Tru					C2 - Dry-Seaso	
	B1 - Water N				C1 - Hydr					C8 - Crayfish B	
	B2 - Sedime B3 - Drift De						spheres on Living Roots educed Iron		□		Visible on Aerial Imagery Stressed Plants
							duction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep			=	C7 - Thin					D5 - FAC-Neutr	
		ion Visible on Aerial Ima			D9 - Gau						
✓	B8 - Sparsel	y Vegetated Concave S	urtace		Other (Ex	plain in Re	marks)				
Field Observat	ione										
Surface Water		□ V □ N-	D4-	2	(in )						
Water Table Pr		☑ Yes □ No	Depth:		(in.)			Wetland Hy	drology Pr	resent?	Yes 🗆 No
Saturation Pres		<ul><li>✓ Yes</li><li>✓ Yes</li><li>✓ No</li></ul>	Depth:		(in.)						
Saturation Pres	entr	Yes □ No	Depth:	U	(in.)						
	led Data (str	eam gauge, monitorir	ıg well, aeria	al photos,	previous	inspectior	ıs), if available:		N/A		
							*				
Remarks:					•						
				-	•	'					
SOILS		Ble1B1 - Blount silt	loam end i	moraine	-						
SOILS Map Unit Name		Ble1B1 - Blount silt			2-4% slo	pes		Coated Sand Grains: Loc	ation: PI =Pore Lining	n M=Matriy)	
SOILS Map Unit Name Profile Descrip	otion (Describe to			bsence of indica	2-4% slo	pes	Depletion, RM-Reduced Matrix, CS-Covered/		ation: PL=Pore Lining	3, M=Matrix)	Texture
SOILS Map Unit Name Profile Descrip Top	Bottom	the depth needed to document the indi	cator or confirm the al	bsence of indica Matrix	2-4% slo	pes	Depletion, RM=Reduced Matrix, CS=Coveredi Redo	ox Features			Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth	Bottom  Depth	the depth needed to document the indi	cator or confirm the al	Matrix Moist)	2-4% slo	pes	Depletion, RM-Reduced Matrix, CS-Covered/		ation: PL=Pore Lining  Type	J. M=Matrix)  Location	(e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 3	the depth needed to document the indi Horizon	Color (I	Matrix Moist)	2-4% slo tors.) (Type: C=C	pes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered/ Redo Color (Moist)	ox Features % 	Type 	Location 	(e.g. clay, sand, loam) silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth	Bottom  Depth	the depth needed to document the indi	cator or confirm the al	Matrix Moist)	2-4% slo	pes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Redo Color (Moist)	ox Features %	Туре	Location	(e.g. clay, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0 3	Bottom Depth 3 7	Horizon  1 2	Color (I 10YR 10YR	Matrix Moist) 4/2 3/2	2-4% slo tors.) (Type: C=C	pes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered/Reduced Matrix, CS=Covered/Reduced Color (Moist)  3/6	% 2	Type  C	Location  M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3	Bottom Depth 3 7	the depth needed to document the indi Horizon  1 2	Color (I 10YR 10YR 10YR	Matrix Moist)  4/2  3/2	2-4% slo tors.) (Type: C=C  % 100 98	pes concentration, D=1	Depletion, RM=Reduced Matrix, CS=Coveredi Redu Color (Moist)  3/6	% 2	Type C	Location  M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3	Bottom Depth 3 7	Horizon  1 2	Color (I 10YR 10YR	Matrix Moist)  4/2 3/2	2-4% slo tors.) (Type: C=C  % 100 98	pes concentration, D=1	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6	% 2	Type C	Location M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3	Bottom Depth 3 7	Horizon  1 2	Color (f 10YR 10YR	Matrix Moist)  4/2  3/2	2-4% slo tors.) (Type: C=C  % 100 98	pes concentration, D=	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6	x Features	Type C	Location M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3	btion (Describe to  Bottom Depth  3  7	the depth needed to document the indi Horizon  1 2	Color (I 10YR 10YR	Matrix Moist)  4/2  3/2	2-4% slo tors.) (Type: C=C  % 100 98	pes concentration, D=1	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6	0x Features	Type C	Location M	(e.g. clay, sand, loam) silty clay loam clay
SOILS  Map Unit Name Profile Descrip Top Depth 0 3	btion (Describe to  Bottom Depth 3 7	Horizon  1 2	Color (I	Matrix Moist)  4/2 3/2	2-4% slo tors) (Type: C=C  % 100 98	pes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6		Type C	Location M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to  Bottom Depth 3 7	Horizon  1 2	Color (I	beence of indicate Matrix Moist) 4/2 3/2	2-4% slo tors) (Type: C=C  % 100 98	pes concentration, D=	Depletion, RM-Reduced Matrix, CS=Covered# Reduced Color (Moist) 3/6	Section	Type C s for Problem	Location M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to  Bottom Depth  3  7  Soil Field Ir  A1- Histosol A2 - Histic E	Horizon  1 2 ndicators (check he	Color (I	Matrix Moist)  4/2  3/2      Drs are n	2-4% slo tors.) (Type: C=C  % 100 98 oot presen \$4 - Sanc \$5 - Sanc	pes oncentration, D=	Depletion, RM=Reduced Matrix, CS=Covered Reduced Color (Moist) 3/6 Watrix		Type C s for Probler A16 - Coast S7 - Dark S	Location  M matic Soils <sup>1</sup> E Prairie Redox	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to  Bottom Depth  3  7 Soil Field Ir  A1- Histosol A2 - Histic E A3 - Black H	Horizon  1 2 ndicators (check he	Color (I	Matrix Moist)  4/2  3/2     ors are n	2-4% slo tors.) (Type: C=C  % 100 98 ot presen S4 - Sanc S6 - Strip	pes concentration, D= 10YR t )	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6 Matrix		Type C 5 for Probler A16 - Coast F7 - Dark S F12 - Iron-N	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Bottom Depth 3 3 7 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge	Horizon  1 2	Color (I	Matrix Moist)  4/2  3/2       Drs are n	2-4% slo tors) (Type: C=C  % 100 98 ot presen \$4 - Sanc \$5 - Sanc \$6 - Strip F1 - Loan	pes concentration, D= 10YR 10YR t )	Depletion, RM-Reduced Matrix, CS=Covered# Reduced Color (Moist) 3/6 Watrix ineral	Section   Sect	Type C s for Probler A16 - Coast \$7 - Dark \$ F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip  Top Depth  0 3 NRCS Hydric	Bottom Depth 3 7 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers	Color (I	Matrix Moist)  4/2  3/2      Drs are n	2-4% slo tors.) (Type: C=C  % 100 98 ot presen \$4 - Sanc \$5 - Sarc \$6 - Strip F1 - Loan F2 - Loan	pes oncentration, D= 10YR t )☑ ly Gleyed I by Redox ped Matrix ny Muck M ny Gleyed I ny Redox	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6 Matrix ineral Matrix		Type C s for Probler A16 - Coast \$7 - Dark \$ F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Bottom Depth 3 3 7	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers	Color (I	Matrix Moist)  4/2  3/2       Drs are n	2-4% slo tors) (Type: C-C  % 100 98 oot presen \$4 - Sanc \$5 - Sanc \$6 - Strip F1 - Loan F3 - Depli	pes concentration, D= 10YR 10YR t )	Depletion, RM=Reduced Matrix, CS=Covered Reduced Color (Moist) 3/6 Watrix ineral Matrix	Section   Sect	Type C s for Probler A16 - Coast \$7 - Dark \$ F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Depth 3 3 7 3 5 oil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrogd A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I A12 - Thick I	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers duck ed Below Dark Surface Dark Surface	Color (I	Matrix Moist)  4/2  3/2	2-4% slo tors) (Typer: C=C  % 100 98 ot presen \$4 - Sanc \$6 - Strip F1 - Loan F2 - Loan F3 - Depli	pes oncentration, D=  10YR t )	Depletion, RM=Reduced Matrix, CS=Covered/ Reduced Color (Moist) 3/6 Watrix inneral Matrix crface	Section   Sect	Type C s for Probler A16 - Coast \$7 - Dark \$ F12 - Iron-M TF12 - Very	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip  Top Depth  0 3 NRCS Hydric	Bottom Depth 3 7 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers Wuck ed Below Dark Surface Dark Surface Dark Surface Wuck Mineral	Color (I	Matrix Moist)  4/2  3/2	2-4% slo tors) (Type: C=C  % 100 98 ot presen S4 - Sanc S5 - Sanc S6 - Stric F1 - Loan F2 - Loan F3 - Deply F6 - Redc F7 - Deply	pes oncentration, D=  10YR t )	Depletion, RM-Reduced Matrix, CS-Covered/ Reduced Color (Moist)  3/6 Watrix ineral Matrix (rface Surface		Type C s for Probler A16 - Coast S7 - Dark S F12 - IronM TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay
SOILS  Map Unit Name Profile Descrip  Top Depth  0 3 NRCS Hydric	Bottom Depth 3 7 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers duck ed Below Dark Surface Dark Surface	Color (I	Matrix Moist)  4/2  3/2      ors are n	2-4% slo tors) (Type: C=C  % 100 98 ot presen S4 - Sanc S5 - Sanc S6 - Stric F1 - Loan F2 - Loan F3 - Deply F6 - Redc F7 - Deply	pes oncentration, D=  10YR 10YR t )	Depletion, RM-Reduced Matrix, CS-Covered/ Reduced Color (Moist)  3/6 Watrix ineral Matrix (rface Surface		Type C s for Probler A16 - Coast S7 - Dark S F12 - IronM TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay es
SOILS  Map Unit Name Profile Descrip  Top Depth  0 3 NRCS Hydric	btion (Describe to Depth 3 7 3 7 3 7 7 3 7 7 3 7 7 7 7	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers Wuck ed Below Dark Surface Dark Surface Dark Surface Wuck Mineral	Color (I	Matrix Moist)  4/2  3/2      ors are n	2-4% slo  100  98  ot presen  \$4 - Sanc  \$5 - Sanc  \$5 - Sanc  \$7 - Deply  F8 - Redo	pes oncentration, D=  10YR 10YR t )	Depletion, RM-Reduced Matrix, CS-Covered/ Reduced Color (Moist)  3/6 Watrix ineral Matrix (rface Surface		Type C 5 for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Bottom Depth 3 3 7 3 3 5 5 cm Me	Horizon  1 2 ndicators (check he pipedon listic en Sulfide d Layers Muck ed Below Dark Surface Dark Surface Muck Mineral ucky Peat or Peat	cator or confirm the at	beence of indical Matrix Moist)  4/2  3/2        Drs are n	2-4% slo tors) (Type: C=C  % 100 98 oot presen \$4 - Sanc \$5 - Sanc \$6 - Strip F1 - Loan F3 - Depli F6 - Redc F7 - Depli F8 - Redc	pes oncentration, D=  10YR t )	Depletion, RM=Reduced Matrix, CS=Covered Red COlor (Moist)  3/6  Watrix ineral Matrix (rface Surface sions)	ox Features % 2 Indicators  Indicators of hydroph	Type C 5 for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay es urface
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Bottom Depth 3 3 7 3 3 5 5 cm Me	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers Muck ed Below Dark Surface Muck Mineral ucky Peat or Peat  Compacted Clay	cator or confirm the at	beence of indical Matrix Moist)  4/2  3/2        Drs are n	2-4% slo tors) (Type: C=C  % 100 98 oot presen \$4 - Sanc \$5 - Sanc \$6 - Strip F1 - Loan F3 - Depli F6 - Redc F7 - Depli F8 - Redc	pes oncentration, D=  10YR t )	Depletion, RM=Reduced Matrix, CS=Covered Red COlor (Moist)  3/6  Watrix ineral Matrix (rface Surface sions)	ox Features % 2 Indicators  Indicators of hydroph	Type C 5 for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay es urface
SOILS Map Unit Name Profile Descrip Top Depth 0 3 NRCS Hydric	btion (Describe to Bottom Depth 3 3 7 3 3 5 5 cm Me	Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers Muck ed Below Dark Surface Muck Mineral ucky Peat or Peat  Compacted Clay	cator or confirm the at	beence of indical Matrix Moist)  4/2  3/2        Drs are n	2-4% slo tors) (Type: C=C  % 100 98 oot presen \$4 - Sanc \$5 - Sanc \$6 - Strip F1 - Loan F3 - Depli F6 - Redc F7 - Depli F8 - Redc	pes oncentration, D=  10YR t )	Depletion, RM=Reduced Matrix, CS=Covered Red COlor (Moist)  3/6  Watrix ineral Matrix (rface Surface sions)	ox Features % 2 Indicators  Indicators of hydroph	Type C 5 for Probler A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very Other (Expla	Location  M	(e.g. clay, sand, loam) silty clay loam clay es urface



## WETLAND DETERMINATION DATA FORM Midwest Region

Sample Point: SP03 Project/Site: Marysville - Union County Solar Generation Tie Line Project Wetland ID: Wetland 1 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant Number of Dominant Species that are OBL, FACW, or FAC: \_\_\_\_1 (A) 2. 3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) 7. 8. Prevalence Index Worksheet 9 Total % Cover of: Multiply by: 10. x 1 = OBL spp. --10 Total Cover = x 2 = FACW spp. 40 80 FAC spp. 0 x 3 = 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) FACU spp. x 4 = 5 20 1. x 5 = UPL spp. 25 2. 3. 135 \_\_\_\_(B) Total 60 (A) 4. 5. Prevalence Index = B/A = 2.250 6. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ✓ Yes ☐ No Rapid Test for Hydrophytic Vegetation ✓ Yes 10 ☐ No Dominance Test is > 50% Total Cover = 0 √ Yes ☐ No Prevalence Index is ≤ 3.0 \* ☐ Yes ☑ No Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ☑ No ☐ Yes Problem Hydrophytic Vegetation (Explain) \* Packera glabella 40 **FACW** \* Indicators of hydric soil and wetland hydrology must be FACU 2. 5 Ν Amaranthus retroflexus present, unless disturbed or problematic. 3. Ranunculus sceleratus 10 N OBL 4. Lamium purpureum 5 N UPL **Definitions of Vegetation Strata:** 5. --\_\_ --6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8 Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. 10. 11 12. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 60 Woody Vine Stratum (Plot size: 30 ft radius) 1 2. 3. Hydrophytic Vegetation Present ☑ Yes ☐ No 4. 5. Total Cover = 0 Remarks: Additional Remarks:



## WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:	Marysville - l	Union County Solar Gen	eration Tie Lii	ne Project	i		Stantec Project #:	19370	9207	Date:	01/05/23	
Applicant:		Transmission Compa	any, Inc.							County:	Union	
Investigator #1:				Invest	igator #2:					State:	Ohio	
Soil Unit:		ınt silt loam, end moraine,	2-4% slopes				IWI/WWI Classification:	NA			N/A	
Landform:	Terrace				cal Relief:					Sample Point:		
Slope (%):	0-1%		40.3368		ongitude:			Datum:		Community ID:		
		ditions on the site typ			year? (If no	, explain in r			No	Section:		
		or Hydrology ☐sign					Are normal circumstar		?	Township:		
		or Hydrology □natu	ırally proble	ematic?			✓ Yes	NΦ		Range:		Dir:
SUMMARY OF												
Hydrophytic Veg	•			☐ Yes				Hydric Soils				Yes 🗹 No
Wetland Hydrol	ogy Present	!?		☐ Yes	☑ No			Is This Sam	oling Point \	Within A Wetla	and?	Yes 🛂 No
Remarks:												
HYDROLOGY												
Wetland Hydro	oloav Indic	ators (Check here if	indicators a	are not p	resent	)☑						
Primary:						,			Secondary:			
	A1 - Surface				B9 - Wate					B6 - Surface So		
	A2 - High W				B13 - Aqu					B10 - Drainage		
	A3 - Saturati B1 - Water N				B14 - True C1 - Hydre					C2 - Dry-Seaso C8 - Crayfish B		ble
	B2 - Sedime						spheres on Living Roots			C9 - Saturation		erial Imagery
	B3 - Drift De						educed Iron			D1 - Stunted or		
					C6 - Rece	ent Iron Re	duction in Tilled Soils			D2 - Geomorph	ic Position	
	B5 - Iron De				C7 - Thin					D5 - FAC-Neutr	al Test	
		ion Visible on Aerial Ima			D9 - Gaug							
	B8 - Sparsel	y Vegetated Concave S	urface		Other (Ex	plain in Re	marks)					
F: 1101 /												
Field Observat												
Surface Water I		☐ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Pr	esent?	Yes ☑	No
Water Table Pre		☐ Yes ☑ No	Depth:		(in.)			,				
Saturation Pres	ent?	☐ Yes ☑ No	Depth:	0	(in.)							
Describe Record	led Data (str	eam gauge, monitorin	g well, aeria	l photos,	previous i	nspection	s), if available:		N/A			
	Ag Field	<u> </u>	<u> </u>	<u> </u>	•	-	,,					
r Remarks:	Au Fleiu											
Remarks:	Ay Fleiu											
	Ay Fleiu											
SOILS		Ble1B1 - Blount silt	loam, end r	moraine.	2-4% slo	pes						
SOILS Map Unit Name	:	Ble1B1 - Blount silt					Depletion. RM=Reduced Matrix. CS=Covered/	Coated Sand Grains: Loc	ation: PL=Pore Lining	ı. M=Matrix)		
SOILS Map Unit Name Profile Descrip	tion (Describe to			osence of indicat			Depletion, RM=Reduced Matrix, CS=Covered/K		ation: PL=Pore Lining	ı, M=Matrix)	Т	exture
SOILS Map Unit Name Profile Descrip Top	otion (Describe to	the depth needed to document the indi	cator or confirm the al	osence of indicate Matrix	tors.) (Type: C=C		Redo	x Features		I		exture /. sand. loam)
SOILS Map Unit Name Profile Descrip Top Depth	etion (Describe to Bottom Depth	the depth needed to document the indi	cator or confirm the al	Matrix Moist)	tors.) (Type: C=Co		Color (Moist)	x Features %	Туре	, M=Matrix)  Location	(e.g. clay	,, sand, loam)
SOILS Map Unit Name Profile Descrip Top Depth 0	e:  btion (Describe to Bottom Depth 16	the depth needed to document the indi Horizon	Color (I	Matrix Moist) 3/2	% 100	oncentration, D=	Color (Moist)	% Features	Type 	Location 	(e.g. clay	/, sand, loam) <mark>ay loam</mark>
SOILS Map Unit Name Profile Descrip Top Depth 0	btion (Describe to Bottom Depth 16	Horizon  1	Color (f	Matrix Moist) 3/2	% 100	oncentration, D=	Color (Moist)	% Features	Type 	Location 	(e.g. clay	/, sand, loam) ay loam 
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth  16	the depth needed to document the indi Horizon 1	Color (No. 104)	Matrix Moist) 3/2	% 100	oncentration, D=	Color (Moist)	% Features %	Type  	Location  	(e.g. clay	/, sand, loam) ay loam  
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the indi  Horizon  1	Color (I 10YR	Matrix Moist)  3/2	% 100	oncentration, D=	Redo	%	Type	Location	(e.g. clay	y, sand, loam) ay loam  
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon  1	Color (f	Matrix Moist) 3/2	% 100	oncentration, D=	Redo Color (Moist)	x Features %    	Type	Location	(e.g. clay	y, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	the depth needed to document the indi  Horizon  1	Color (I 10YR	Matrix Moist)  3/2	% 100	oncentration, D=	Redo	%	Type	Location	(e.g. clay	y, sand, loam) ay loam  
SOILS Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon  1	Color (I	Matrix Moist)  3/2	% 100	oncentration, D=	Redo Color (Moist)				(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon  1	Color (I	Matrix Moist) 3/2	% 100		Redo Color (Moist)	%	Type	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0	Bottom Depth 16	Horizon  1	Color (I	seence of indicate Matrix Moist) 3/2	% 100 ot present	oncentration, D=	Redo Color (Moist)	% Features	Type s for Problem	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip  Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field It A1- Histosol	Horizon  1	Color (I	Matrix Moist)  3/2     ors are n	% 100 ot present S4 - Sand	oncentration, D=	Redo Color (Moist)	x Features	Type 5 for Problen	Location	(e.g. clay	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E	Horizon  1	Color (I	Matrix Moist)  3/2      Drs are n	% 100 ot present S4 - Sand S5 - Sand	oncentration, D=	Redo Color (Moist)	x Features	Type s for Problem A16 - Coast S7 - Dark S	Location	(e.g. clay	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H	Horizon  1	Color (I	Matrix Moist)  3/2	% 100	oncentration, D=	Redo Color (Moist)	x Features % Indicators	Type	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge	Horizon  1	Color (I	Matrix Moist)  3/2	% 100 ot present \$4 - Sand \$5 - Sand \$6 - Stripp F1 - Loarr	oncentration, D=	Redo		Type 5 for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroga A5 - Stratifie	Horizon  1	Color (I	Matrix Moist)  3/2	% 100	oncentration, D=	Redo Color (Moist)	x Features % Indicators	Type 5 for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm M	Horizon  1	Color (I	Matrix Moist)  3/2       Drs are n	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix		Type 5 for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A10 - 2 cm M	Horizon  1	Color (I	Matrix Moist)  3/2	% 100	encentration, D=	Redo Color (Moist)		Type 5 for Problem A16 - Coast S7 - Dark S F12 - Iron-M TF12 - Very	Location	(e.g. clay	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	Horizon  1	Color (I	Matrix Moist)  3/2	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	x Features %	Type	Location	es es	/, sand, loam) ay loam
SOILS  Map Unit Name Profile Descrip  Top Depth  0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	Horizon  1	Color (I	Matrix Woist)  3/2      ors are n	% 100 ot present \$5 - \$ and \$6 - \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	x Features %	Type	Location	es es	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy N S3 - 5 cm M	Horizon  1	Color (I	Matrix Woist)  3/2      ors are n	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	x Features %	Type	Location	es es	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Bottom Depth 16 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm N A11 - Deplet A12 - Thick I S1 - Sandy N	Horizon  1	Color (I	Matrix Woist)  3/2	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	SX Features % Indicators   ¹ Indicators of hydropt	Type	Location	es urface	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy N S3 - 5 cm M	Horizon  1	Color (I	Matrix Woist)  3/2	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	SX Features % Indicators   ¹ Indicators of hydropt	Type	Location	es urface	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy N S3 - 5 cm M	Horizon  1	Color (I	Matrix Woist)  3/2	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	SX Features % Indicators   ¹ Indicators of hydropt	Type	Location	es urface	/, sand, loam) ay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric	Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydrog A5 - Stratifie A10 - 2 cm M A11 - Deplet A12 - Thick I S1 - Sandy N S3 - 5 cm M	Horizon  1	Color (I	Matrix Woist)  3/2	% 100	encentration, D=	Redo Color (Moist) Matrix ineral Matrix crface Surface	SX Features % Indicators   ¹ Indicators of hydropt	Type	Location	es urface	/, sand, loam) ay loam



## WETLAND DETERMINATION DATA FORM Midwest Region

Sample Point: SP04 Project/Site: Marysville - Union County Solar Generation Tie Line Project Wetland ID: N/A **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name Ind.Status % Cover Dominant 2. --Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) 3. 4. Total Number of Dominant Species Across All Strata: 2 (B) 5. 6. Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B) 7. 8. Prevalence Index Worksheet 9 Total % Cover of: Multiply by: 10. x 1 = OBL spp. --Total Cover = FACW spp. x 2 = FAC spp. 0 x 3 = 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 20 80 1. x 5 = UPL spp. 80 400 2. 3. Total 100 (A) 480 4. 5. Prevalence Index = B/A = 4.800 6. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ☐ Yes ✓ No Rapid Test for Hydrophytic Vegetation ☐ Yes 10 √ No. Dominance Test is > 50% Total Cover = 0 ☐ Yes ✓ No Prevalence Index is ≤ 3.0 \* ☐ Yes ☑ No Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 5 ft radius) ✓ No ☐ Yes Problem Hydrophytic Vegetation (Explain) \* Glycine max 80 UPL \* Indicators of hydric soil and wetland hydrology must be Υ 2. 20 **FACU** Cardamine hirsuta present, unless disturbed or problematic. 3. 4. **Definitions of Vegetation Strata:** 5. --\_\_ 6 Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. 7. 8 Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9. 10. 11 12. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. 13. 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 100 Woody Vine Stratum (Plot size: 30 ft radius) 1 2. 3. Hydrophytic Vegetation Present ☐ Yes ☑ No 4. 5. Total Cover = 0 Remarks: Additional Remarks:

#### D.2 ORAM DATA FORM

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

#### Instructions

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

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

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

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

# **Background Information**

Name: yms Chartain	
Date: 1/5/2023	
Affiliation: Stantec Consulting Services, Inc	
Address: 10200 Alliance Proad, Suite 300 Cincinnati, OH 45	242
Phone Number:	
513 - 913 - 9115	
Cours Chartain & Starter Lom	
Name of Wetland: Wetland 1	
Vegetation Communit(ies):	
HGM Class(es):	
Location of Wetland: include man, address, north arrow, landmarks, distances, roads, etc.	
Romer Mass	,
Lat/Long or UTM Coordinate 40.376754 - 83.439116	100000000000000000000000000000000000000
USGS Quad Name Richword, Ohio	
County Union County	
Township	
Section and Subsection N/A	
Hydrologic Unit Code 050600010603	
Site Visit 1/5/2022	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey Ble1B1 - Blount Silt Loam, end moraine, 2 to 4 percent slopes	
Delineation report/man	
See Ecological Resources Inventory Report	

Name of Wetland: Wetland Wetland Size (acres, hectares):	1		h 2	
Sketch: Include north arrow, rel	ationship with other surf	ace waters, vegeta	tion zones, etc.	
	Crus?	nare	E Patrick Brush Run	12
_				
			347	
Comments, Narrative Discussio	on, Justification of Catego	ory Changes:		
Final score : ાનુ			Category:	I

#### 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.	V	
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.	/	
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.	/	
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.	/	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		/
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.	/	

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

#### **Narrative Rating**

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has	YES	(NO)
	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	Wetland should be evaluated for possible Category 3 status	Go to Question 2
	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).	Go to Question 2	0
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category	Go to Question 3
		3 wetland.  Go to Question 3	
3	Documented High Quality Wetland. Is the wetland on record in	YES	NO)
,	Natural Heritage Database as a high quality wetland?	Wetland is a Category 3 wetland	Go to Question 4
	1	Go to Question 4	~
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding	YES	(NO)
	waterfowl, neotropical songbird, or shorebird concentration areas?	Wetland is a Category 3 wetland	Go to Question 5
	\\	Go to Question 5	27
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES  Wetland is a Category 1 wetland  Go to Question 6	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,	YES	NO
1	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%?	Wetland is a Category 3 wetland	Go to Question 7
		Go to Question 7	
<u>7</u>	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of	YES Wetland is a Category 3 wetland	Go to Question 8a
	invasive species listed in Table 1 is <25%?	Go to Question 8a	
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics:	YES	NO NO
	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	Wetland is a Category 3 wetland.	Go to Question 8t
	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?	Go to Question 8b	

O.L	Notice for stal wallands to the walland a forested will and with	YES	(NO)
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	(10)
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES Go to Question 9b	(NO) Go to Question 10
9b	elevation, or along a tributary to Lake Erie that is accessible to fish?	YES	NO
90	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?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
1		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence,	YES	NO
	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.	Go to Question 9d	Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 10
	. *		- 2
10	Lake Blain Cond Busines (Oak Onesians) to the western discount in	Go to Question 10	NO)
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	Wetland is a Category 3 wetland.	Go to Question 11
	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.	Go to Question 11	
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species

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

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

Site:	Wetlan	11	Rater(s):	Cyrus Chastain		Date: 1/5/2023
		Metric 1. Wetland A	rea (size)	•		
D	0					
max 6 pts.	subtotal	Select one size class and assign scor >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20 10 to <25 acres (4 to <10.10 3 to <10 acres (1.2 to <4ha) 0.3 to <3 acres (0.12 to <1.20 0.1 to <0.3 acres (0.04 to <0	0.2ha) (5 pts) ha) (4 pts) ) (3 pts) 2ha) (2pts)			
		<0.1 acres (0.04ha) (0 pts)		in the second		
1	1	Metric 2. Upland bu				
max 14 pts.	subtotal	2a. Calculate average buffer width. S WIDE. Buffers average 50r MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or LOW. Old field (>10 years) MODERATELY HIGH. Res	n (164ft) or more 25m to <50m (82 2 10m to <25m (3 everage <10m (<3 Select one or double forest, prain , shrub land, your idential, fenced p	around wetland perime to <164ft) around wetl 2ft to <82ft) around we (2ft) around wetland pe ouble check and avera rie, savannah, wildlife a ng second growth fores asture, park, conserva	eter (7) land perimeter (4) etland perimeter (1) erimeter (0) ge. area, etc. (7) st. (5) tion tillage, new fallow	field. (3)
	1	HIGH. Urban, industrial, op		ropping, mining, const	ruction. (1)	
6	. 7	Metric 3. Hydrology	•			
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5) Other groundwater (3) Verecipitation (1) Seasonal/Intermittent surface Perennial surface water (lak) 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in)  x <0.4m (<15.7in) (1)	ce water (3) te or stream) (5) ly one and assign	3d. <u>Dura</u>	Part of wetland/upla Part of riparian or u ation inundation/satura Semi- to permanent Regularly inundated Seasonally inundated	(1) se and other human use (1) and (e.g. forest), complex (1) pland corridor (1) ation. Score one or dbl check tly inundated/saturated (4) d/saturated (3)
		3e. Modifications to natural hydrologic	regime. Score o	ne or double check an		
-	×	None or none apparent (12) Recovered (7) Recovering (3) X Recent or no recovery (1)	Check all distur ditch tile dike weir stormwate	er input	point source (nonstr filling/grading road bed/RR track dredging other	ormwater)
3	LO	Metric 4. Habitat Alt	eration a	nd Developn	nent.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only				
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)				
		4c. Habitat alteration. Score one or do	ouble check and a	average.		
	( O	A. L. Carlotte and	mowing grazing clearcutting selective of	cutting oris removal	shrub/sapling remove herbaceous/aquatice sedimentation dredging farming nutrient enrichment	
last revised	1 Februa	y 2001 jjm				

Site:	Wetland	1 Rater	(s): Cyrus C	Chastian	Date:	1/5/2023	
		1			É		
	10						
	subtotal first p	age				1	
O	10	Metric 5. Special Wetlan	ds.	X-			T
max 10 pt	s. subtotal	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-u					
		Lake Plain Sand Prairies (Oak Open		nogy (o)			
		Relict Wet Prairies (10)					
		Known occurrence state/federal thre					
		Significant migratory songbird/water Category 1 Wetland. See Question					
		Metric 6. Plant commun			moars	nhv.	
4	14	Wetric 6. Plant commun	ities, iiit	erspersion, inicrote	pogic	.p., 3/	
max 20 pts		Ga. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	7		18, 100
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	471 acres)	contiguous	s area
	91	Aquatic bed	1	Present and either comprises sm	all part of w	etland's	
		Emergent  Shrub		vegetation and is of moderate of significant part but is of low qua		omprises a	
		O Forest	2	Present and either comprises sig	nificant par	t of wetlan	d's
		D Mudflats		vegetation and is of moderate of	quality or co	mprises a	small
		Open water		part and is of high quality			Handla
		Other	3	Present and comprises significan vegetation and is of high quality		ore, or wer	uand s
		Select only one.		vegetation and is of high quality	jia		
		High (5)	Narrative D	escription of Vegetation Quality			
		Moderately high(4)	low	Low spp diversity and/or predomi		onnative o	r
		Moderate (3)  Moderately low (2)	mod	Native spp are dominant compon		regetation	
		Low (1)	mod	although nonnative and/or distu			
		None (0)		can also be present, and specie			to
		6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generally	w/o presen	ce of rare	
		or deduct points for coverage	high	threatened or endangered spp A predominance of native specie	s with non	native snn	
		Extensive >75% cover (-5)	9	and/or disturbance tolerant nati			
		Moderate 25-75% cover (-3)		absent, and high spp diversity			
		Sparse 5-25% cover (-1)		the presence of rare, threatene	d, or endar	ngered spp	)
		Nearly absent <5% cover (0) Absent (1)	Mudflat and	d Open Water Class Quality			
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)			
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	cres)	2	
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	8 acres)		
		Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	High 4ha (9.88 acres) or more			
		Amphibian breeding pools	Microtopoo	graphy Cover Scale			
			0	Absent			
			1	Present very small amounts or if of marginal quality	لس		
			2	Present in moderate amounts, be quality or in small amounts of h			
-	,		3	Present in moderate or greater a	mounts		
. 1	1		-	and of highest quality			

End of Quantitative Rating. Complete Categorization Worksheets.

# **ORAM Summary Worksheet**

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
<b>3</b>	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	6	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE	14	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

## **Wetland Categorization Worksheet**

Choices	Circle one		Evaluation of Categorization Result of ORAM		
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<b>®</b>	Is quantitative rating score less than the Category 2 scoring threshold (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized 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	(3)	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>N</b> O	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM		
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	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>(10)</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	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, loca or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.		

	Final Category			
Choose one	(Category 1)	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

### D.3 HHEI DATA FORM

Primary Headwater Habitat Field Evaluation Form HHEI Score (sum of metrics 1+2+3)	1
SITE NAMELOCATION May ville - Union County Gold Coencration Tie Line  SITE NUMBER Stream 1 RIVER BASIN Ohio RIVER CODE DRAINAGE AREA (mf) <0.1 m  LENGTH OF STREAM REACH (ft) 65 LAT 40.331532 LONG -43.443837 RIVER MLE  DATE (11/05/2023 SCORER M) COMMENTS Exhumal chima from by Drainage  NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	_
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	1150
TYPE  BLDR SLABS [16 pts]  BOULDER (>256 mm) [16 pts]  BERROCK [16 pts]	HEI etric ints strate c = 40
	Depth = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):    > 4.0 meters (> 13') [30 pts]	0.000
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY + NOTE: River Left (L) and Right (R) as looking downstream+	
RIPARIAN WIDTH L R (Per Bank) L R  Mature Forest, Wetland Moderate 5-10m Narrow <5m None RESIDENT THOSE. River Lett(L) and regint (R) as sooking downstreams  FLOODPLAIN QUALITY (Most Predominant per Bank) L R  L R  Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial Residential, Park, New Field Open Pasture, Row Crop Fenced Pasture  COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing   Moist Channel, isolated pools, no flow (intermittent)  Subsurface flow with isolated pools (interstitial)   Dry channel, no water (ephemeral)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None     1.0     2.0     3.0       0.5     1.5     ≥ 2.5     >3	
STREAM GRADIENT ESTIMATE  Flat (0.5 \$2100 \$1) Flat to Moderate  Moderate  Moderate (2 \$2100 \$1) Moderate to Severe  Severe  Severe (10 \$2100 \$1)	

OWNSTREAM DESCONATED USE(S)    OWN Name: Mill Creck   Distance from Evaluated Stream   Distance fro	ADDITIONAL STREAM INFORMATION	ON (This Information Must Also be Completed):
WHY Name:   Distance fromEvaluated Stream   Distance fromEv	QHEI PERFORMED? TYES No QHEI Scor	e (If Yes, Attach Completed QHEI form)
CWH Name:   Distance from Evaluated Stream	DOWNSTREAM DESIGNATED USE(S)	- 4
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.  JISGS Quadrangle Name: Peoria, Ohio NRCS Soil Map Page: NRCS Soil Map Stream Order: NRCS Soil Ma		
MAPPING: ATTACH COPIES OF MAPS, INCLIDING THE ENTIRE WATER SHED AREA. CLEARLY MARK THE SITE LOCATION.  JSGS Quadrangle Name: Pooria, Ohio NRCS Soil Map Page:NRCS Soil Map Stream Order:  Liberty NRCS Soil Map Stream Order:  MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation:	CWH Name:	
Union Township/City_Liberty  MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: 01/0s/2/25 Quantity:	ASS-00 DEPOCKACIANA	
MISCELLANEOUS  Base Flow Conditions? (Y/N): N Date of last precipitation: 01/03/2135 Quantity: Photo-documentation Notes: Elevated Turbidity?(Y/N): N Canopy (% open): 50 Were samples collected for water chemistry?(Y/N): N Lab Sample # or D (attach results): Fleid Measures: Temp ("C) N/A Dissolved Oxygen (mg/l) pH (S.U.) N/A Conductivity (umhos/cm) is the sampling reach representative of the stream (Y/N) Y If not, explain:  BIOLOGICAL OBSERVATIONS (Record all observations below)  Fish Observed? (Y/N) N Species observed (if known):  Frogs or Tadpokes Observed? (Y/N) N Species observed (if known):  Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGOF		
Base Flow Conditions? (Y/N).   Date of last precipitation: 01/03/2635 Quantity: Photo-documentation Notes: Elevated TurbidRy?(Y/N):   Canopy (% open): 50  Were samples collected for waterchemistry?(Y/N):   N	USGS Quadrangle Name: Peoria, Ohio	NRCS Soil Map Page: NRCS Soil Map Stream Order:
Base Flow Conditions? (YM): Date of last precipitation:	County: Union	Township/City:Liberty
Photo-documentation Notes:  Elevated Turbidity?(Y/N): N		
Elevated Turbidity?(Y/N): N Canopy (% open): 50  Were samples collected for water chemistry?(Y/N): N Lab Sample \$ or ID (attach results):	Base Flow Conditions? (Y/N):/ Date of last precip	itation: 01/03/2625 Quantity:
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BIOL OGICAL OBSERVATIONS  (Record all observations below)  First Observed? (Y/N) N Species observed (if known):  Fings or Tadpoles Observed? (Y/N) N Species observed (if known):  Salamanders Observed? (Y/N) N Species observed (if known):  Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGOF	s the sampling reach representative of the stream (Y/N) _	Y If not, explain:
(Record all observations below)  Fish Observed? (Y/N) N Species observed (if known):  Frogs or Tadpoles Observed? (Y/N) N Species observed (if known):  Salamanders Observed? (Y/N) N Species observed (if known):  Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGOF	Additional comments/description of pollution impacts:	
Salamanders Observed? (Y/N) N Species observed (if known):  Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGVF  OW  Lief feet Throughout	(Record	all observations below)
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGPF  Lief React Throughout		
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DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGOF  Lief feet Three description of the stream's location	프랑스 (1916년 1917년 1914년 - 1914년 - 1915년 - 1일 1917년 - 19	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGDF  Lief fact Throughout	Aquatic Macroinvertebrates Observed? (Y/N) N Spec	cies observed (it known):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  MESSGDF  Lief fleet Throughout  Ag	Comments Regarding Biology:	
Ag Bern 3	Include important landmarks and other features of Agent MESSGD	of interest for site evaluation and a narrative description of the stream's location
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