



Legal Department

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
AEP.com

July 31, 2018

Hector Garcia
Christen M. Blend
Senior Counsel –
Regulatory Services
(614) 716-3410 (P)
(614) 716-1915 (P)
hgarcia1@aep.com
cmblend@aep.com

Chairman Asim Z. Haque
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215

Re: PUCO Case No. 18-1170-EL-BLN
In the Matter of the Letter of Notification for the
Shannon-Astor 138 kV Transmission Line Extension Project

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification for the above-captioned project ("Project") by AEP Ohio Transmission Company, Inc. This filing and notice is in accordance with O.A.C. 4906-6-05

A copy of this filing will also be submitted to the executive director or the executive director's designee. A copy will be provided to the Board Staff, including an electronic copy.

If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Christen Blend
Christen Blend (0086881), Counsel of Record
Hector Garcia (0084517)
Counsel for AEP Ohio Transmission Company, Inc.

cc: John Jones, Counsel OPSB Staff
Jon Pawley, OPSB Staff

Letter of Notification for Shannon-Astor 138 kV Transmission Line Extension Project



An **AEP** Company

BOUNDLESS ENERGY™

PUCO Case No. 18-1170-EL-BLN

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

Submitted by:
AEP Ohio Transmission Company, Inc.

July 31, 2018

Letter of Notification

AEP Ohio Transmission Company, Inc. Shannon-Astor 138 kV Transmission Line Extension Project

4906-6-05

AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco”) provides the following information in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(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 Letter of Notification.

AEP Ohio Transco proposes the Shannon-Astor 138 kV Transmission Line Extension Project (“Project”) located in the Cities of Columbus and Reynoldsburg, Truro Township, Franklin County, Ohio. The Project includes a 0.7-mile extension of new 138kV transmission line from the existing Shannon-Astor 138 kV transmission line to a new distribution facility. Two structures on the existing Shannon-Astor 138kV line will also be replaced as maintenance. Although their replacement does not require the Ohio Power Siting Board’s (“OPSB”) approval, the structures have been included in this application for reference purposes. The location of the Project is shown on Figure 1.1 in Appendix A. Technical features of this Project are discussed in Section B9.

The Project meets the requirements for a letter of notification (“LON”) because it is within the types of projects defined by Item (1)(b) of Appendix A to O.A.C. 4906-1-01, *Application Requirement Matrix For Electric Power Transmission Lines*. This item states:

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

(b) Line(s) greater than 0.2 miles in length but not greater than two miles in length.

The Project has been assigned PUCO Case No. 18-1170-EL-BLN.

B(2) Statement of Need

The Project is a PJM Interconnection LLP (“PJM”) Supplemental RTEP project (identifier s1594), which was submitted to PJM in March 2018 (see Appendix B). The Project was referenced on page 5 of AEP Ohio Transco’s 2018 LTFR (see Appendix B, page 5 of 74), in section FE-T9 (Planned Electric Transmission Lines). AEP Ohio Transco has requested a new 138 kV delivery point capable of serving 3-50 MVA transformers at the chosen site. This delivery point will

provide a new distribution capacity source to relieve existing distribution circuits loaded above 90%, to relieve load from Reynoldsburg station, and to serve new load in a potential growth area. Without this new source, distribution overloads will be experienced in the near future and the ability to serve new distribution load in the area will remain very limited.

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 Project is located near the intersection of Brice Rd. and Interstate 70 in Columbus and Reynoldsburg, Ohio. Figure 1.1 in Appendix A shows the location of the proposed Project in relation to existing AEP Ohio Transco facilities, including the existing Shannon-Astor 138 kV transmission line.

B(4) Alternatives Considered

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

A siting effort was conducted to identify a proposed route and considered impacts associated with socioeconomic, ecological, construction, and engineering aspects of the Project. The Project endpoints are defined as the existing Shannon-Astor 138kV transmission line and a proposed distribution station located just south of Interstate 70. Figures 1.1 and 1.2 in Appendix A show the Project area and endpoints. Due to the short project length (< 1 mile) and constraints, alternative routes were limited within the study area. The proposed route was ultimately selected because the line avoids impacts on existing land uses and maximizes distance from schools, commercial development, and residential areas. The following describes the proposed route and the study area's constraints.

Residential and commercial development are the primary siting constraints within the study area. Residences and a junior high school are located north of I-70 and residences, institutions, and commercial development are located south of Tussing Rd, which were considered avoidance areas. With the exception of crossing Interstate 70, the proposed route is a direct route from the existing Shannon-Astor line to the proposed distribution station, which minimizes route length and potential socioeconomic impacts. The proposed route avoids many of the constraints associated with the built environment by paralleling the southern I-70 corridor, which also minimizes new visual impacts by paralleling existing infrastructure. New visual impacts are further minimized by locating the proposed route adjacent to an existing distribution line.

Potential ecological impacts did not vary significantly within the study area and are expected to be minimal due to the highly-developed nature of the study area.

Engineering and construction constraints identified within the study area are minimal with no steep slopes or significant elevation changes present. Given the relatively level terrain and existing paved roads and/or parking lots located throughout the study area, access roads to proposed structures within the study area are comparable and not considered a significant construction constraint. To minimize potential traffic interruptions during construction, the existing structures crossing I-70 will be replaced and re-located adjacent to the existing centerline, and construction will be coordinated with The Ohio Department of Transportation (“ODOT”).

Given the factors above, the proposed route (1) reasonably minimizes adverse impacts on residential areas and the natural and cultural environment; (2) minimizes special design requirements and unreasonable costs; and (3) permit the line to be constructed and operated in a timely, safe, and reliable manner.

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.

AEP Ohio Transco informs affected property owners and tenants about its projects through several different mediums. Within seven days of filing this LON, AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of O.A.C. 4906-6-08(A)(1)-(6). Further, AEP Ohio Transco mailed a letter, via first class mail, to affected landowners, tenants, contiguous owners, and any other landowner AEP Ohio Transco approached for an easement necessary for the construction, operation, or maintenance of the facility. The letter complies with all the requirements of O.A.C. 4906-6-08(B). AEP Ohio Transco also maintains a website (<http://aeptransmission.com/ohio/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. A paper copy of the LON will be served to the public library in each political subdivision affected by this proposed Project. Lastly, AEP Ohio Transco retains ROW land agents who discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

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

Construction is planned to start in the fourth quarter of 2018. The in-service date (completion date) of the Project is expected to be December 2019.

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.

An aerial map of the Project area is included as Figure 1.2. To visit the Project from Columbus, take I-70 E/I-71 N, keep right to continue on I-70, take exit 110A for Brice Road South, merge

onto Brice Road, turn left onto Tussing Road, and turn left onto New Jersey Court. The Project is located to the north at the end of the road.

B(8) Property Agreements

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

A list of properties and obtained easements, options, and or land use agreements for the Project are provided in the table below.

Property Parcel Number	Easement Agreement/ Option Obtained (Yes/No)
060-007892	No
010-007362	No
010-200001	No
550-102592	No
550-111182	No
550-297847	Yes
540-181267	Yes

B(9) Technical Features

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

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

The Project will involve the construction 0.1-mile of new single-circuit and 0.6-mile of new double-circuit 138kV transmission line with a 100-foot ROW. Two existing structures crossing I-70 will be offset east of the existing centerline and existing structures 146 and 149 will be replaced as maintenance. New structures will include one two-pole steel angle structure, two single-circuit steel monopole tangents, two two-pole dead-end steel structures, and ten double-circuit steel monopole tangents with an average structure height of 85-90 feet. Conductors will be 795 kcmil 26/7 ACSR with polymer insulators and a 7#8 Alumoweld static wire for lighting strikes.

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)(b)(i) Calculated Electric and Magnetic Field Strength Levels

This section is not applicable. There are no occupied residences or institutions located within 100 feet of the Project.

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

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

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 2018 capital cost estimate for the proposed Project, comprised of applicable tangible and capital costs, is approximately \$6,000,000, using a Class 4 estimate.

B(10) Social and Economic 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.

The Project is located within the City of Columbus, Truro Township, Franklin County, Ohio. Field observations by AEP Ohio Transco's consultant indicate the Project area is primarily comprised of maintained lawn and paved surface/industrial land. Limited areas of old field, early successional deciduous forest, open water, and palustrine emergent wetland were identified within the Project area. Approximately 0.5 acres of tree clearing will be required for the Project.

There are currently one church and one early childhood education center located within 1,000 feet of the Project area. The church and early childhood education center are located along Americana Parkway. There are currently 77 active residences located within 1,000 feet of the Project area, all of which are located north of I-70. The nearest cemetery (Powell Cemetery) is located approximately one mile south of the Project area. Blacklick Woods Metro Park is located approximately 500 feet northeast of the Project endpoint, across I-70.

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 is not located within a registered agricultural district, based on coordination with the Franklin County Auditor's Office in July 2018. Based on field survey observations, there is no agricultural land in the Project area (see Figure 3 in Appendix C).

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.

Cultural resources survey reports for the Project were completed by AEP Ohio Transco's consultant in June 2018 and are being reviewed by the Ohio History Connection ("OHC"). The results of the survey activity will be coordinated directly with the OPSB.

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.

Best management practices will be implemented and maintained to minimize erosion and control sediment to protect surface water quality during storm events. If applicable (based on the final Project disturbance area), a project-specific Storm Water Pollution Prevention Plan (SWPPP) will be prepared and a Notice of Intent (NOI) will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000004.

Three wetlands, one stream, and one open water feature are located in the Project area (see Appendix C). Project construction activities are not expected to result in the discharge of fill material in the stream or wetlands. Timber mats/timber mat bridges will be utilized at these locations if equipment crossings are required, and temporary impacts associated with timber mats/timber mat bridges are expected to be <0.10-acre. Therefore, the Project is not expected to 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 Project is not crossed by Federal Emergency Management Agency ("FEMA") 100-year floodplains. Therefore, no floodplain permitting is required for the Project. There are no other known local, state or federal permitting requirements that must be met prior to commencement of the Project.

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

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

The United States Fish and Wildlife Service (“USFWS”) Ohio Ecological Services Field Office list of federally endangered, threatened, and candidate species in Ohio by County (available at <https://www.fws.gov/midwest/ohio/EndangeredSpecies/pdf/SpeciesListByCountyApril2018.pdf>) was reviewed to determine the threatened and endangered species currently known to occur, or that potentially occur, in Franklin County. This USFWS publication listed the following threatened or endangered species as occurring or potentially occurring in Franklin County: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), Scioto madtom (*Noturus trautmani*; federally endangered), clubshell (*Pleurobema clava*; federally endangered), northern riffleshell (*Epioblasma torulosa rangiana*; federally endangered), rabbitsfoot (*Quadrula cylindrica cylindrica*; federally threatened), rayed bean (*Villosa fabalis*; federally endangered), snuffbox (*Epioblasma triquetra*; federally endangered), and running buffalo clover (*Trifolium stoloniferum*; federally endangered). No potential winter hibernacula or potentially suitable summer roosting habitat for the Indiana bat or northern long-eared bat was observed during threatened and endangered species habitat assessment field surveys completed within the Project area. Additionally, no potentially suitable habitat for other federally listed species was observed within the Project area.

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 January 25, 2018 response letter from the USFWS (see Appendix C) indicated that the proposed Project is within the range of the Indiana bat and northern long-eared bat in Ohio, but if tree clearing occurs between October 1 and March 31, they do not anticipate the Project having any adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species. No winter hibernacula or potentially suitable roost trees were observed in the Project area during field surveys. Summer foraging habitat were observed in the Project area. Although no potentially suitable roost trees were observed, AEP will avoid summer roosting and foraging habitat to the extent possible and will determine if any summer tree clearing is necessary in areas potentially containing suitable roost habitat and proceed accordingly. The USFWS letter did not include any comments specific to other federally listed species.

Several state-listed threatened species, endangered species, and species of concern are listed by the Ohio Department of Natural Resources (<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/state-listed%20species/franklin.pdf>) as occurring, or potentially occurring in Franklin County. These state-listed species are addressed in detail in the Ecological

Resources Inventory Report included in Appendix C. No Project-related impacts to any state-listed threatened or endangered species are anticipated.

Coordination letters were submitted via email to the Ohio Department of Natural Resources (“ODNR”) Division of Wildlife (“DOW”) Ohio Natural Heritage Program (“ONHP”) and the ODNR - Office of Real Estate in January 2018, 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/ONHP and the ODNR – Office of Real Estate was received on March 9, 2018 (see Appendix C).

According to the ODNR - Office of Real Estate, the Project is within the vicinity of the Indiana bat. If suitable Indiana bat habitat occurs within the Project area and trees must be cut, the ODNR recommends cutting between October 1 and March 31. If cutting must occur during summer month, ODNR recommends a mist net survey be conducted between June 1 and August 15 prior to any cutting. No winter hibernacula or potentially suitable roost trees were observed in the Project area during field surveys. Summer foraging habitat were observed in the Project area. Although no potentially suitable roost trees were observed, AEP will avoid summer roosting and foraging habitat to the extent possible and will determine if any summer tree clearing is necessary in areas potentially containing suitable roost habitat and proceed accordingly.

The ODNR - Office of Real Estate also indicated that the Project is within the range of the following aquatic state-listed endangered and/or threatened species: Scioto madtom (*Noturus trautmani*; a state endangered and federally endangered fish), popeye shiner (*Notropis ariommus*; a state endangered fish), northern brook lamprey (*Ichthyomyzon fossor*; a state endangered fish), spotted darter (*Etheostoma maculatum*; a state endangered fish), shortnose gar (*Lepisosteus platostomus*; a state endangered fish), tonguetied minnow (*Exoglossum laurae*; a state threatened fish), the paddlefish (*Polyodon spathula*; a state threatened fish), and Tippecanoe darter (*Etheostoma tippecanoe*; a state threatened fish), and 15 mussel species. Due to the Project location, and that there is no in-water work proposed in a perennial stream, the ODNR states that this Project is not likely to impact these species.

According to the ODNR, the Project is within the range of the upland sandpiper (*Bartramia longicauda*; a state endangered bird). Upland sandpipers nest in large grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). No suitable nesting habitat was observed in the Project area and therefore no impacts to this species are anticipated. The ODNR stated that, if this type of habitat will not be impacted, this Project is not likely to impact this species.

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.

LETTER OF NOTIFICATION FOR THE SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT

The ODNR DOW/OHNP responded in a letter dated March 9, 2018 indicating that the Walter A. Tucker State Nature Preserve and Blacklick Woods Metropark (both managed by the Columbus & Franklin Co. Metro Parks) are located within a one-mile radius of the Project area. The Tucker State Nature Preserve is a 55-acre nature preserve located within Blacklick Woods Metropark and is located approximately 0.4-mile northeast of the eastern terminus of the Project. Blacklick Woods Metro Park is located approximately 0.1-mile northeast of the eastern terminus of the Project and includes 643 acres of woods, fields, seasonal swamp ponds, a small prairie and a golf course. Blacklick Woods Metropark and the Walter A. Tucker State Nature Preserve will not be directly impacted by the Project and viewshed impacts are not expected given the existing I-70 highway corridor and mature vegetation between the parks and Project. Correspondence received from the USFWS indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat in the Project vicinity (see Appendix C).

The FEMA Flood Insurance Rate Map was consulted to identify any floodplains/flood hazard areas that have been mapped in the Project area (specifically, map number 39045C0025G). Based on this map, no mapped FEMA floodplains are located in the Project area. Therefore, no floodplain permits will be required for this Project.

Wetland and stream delineation field surveys were completed within the Project area by AEP Ohio Transco's consultant in June 2018. The results of the wetland and stream delineations are presented in the Ecological Resources Inventory Report included in Appendix C. Three palustrine emergent wetlands, one intermittent stream, and one open water were identified within the Project area (see Appendix C). The proposed transmission line construction activities are not expected to result in the discharge of fill material into the wetlands, stream, or open water.

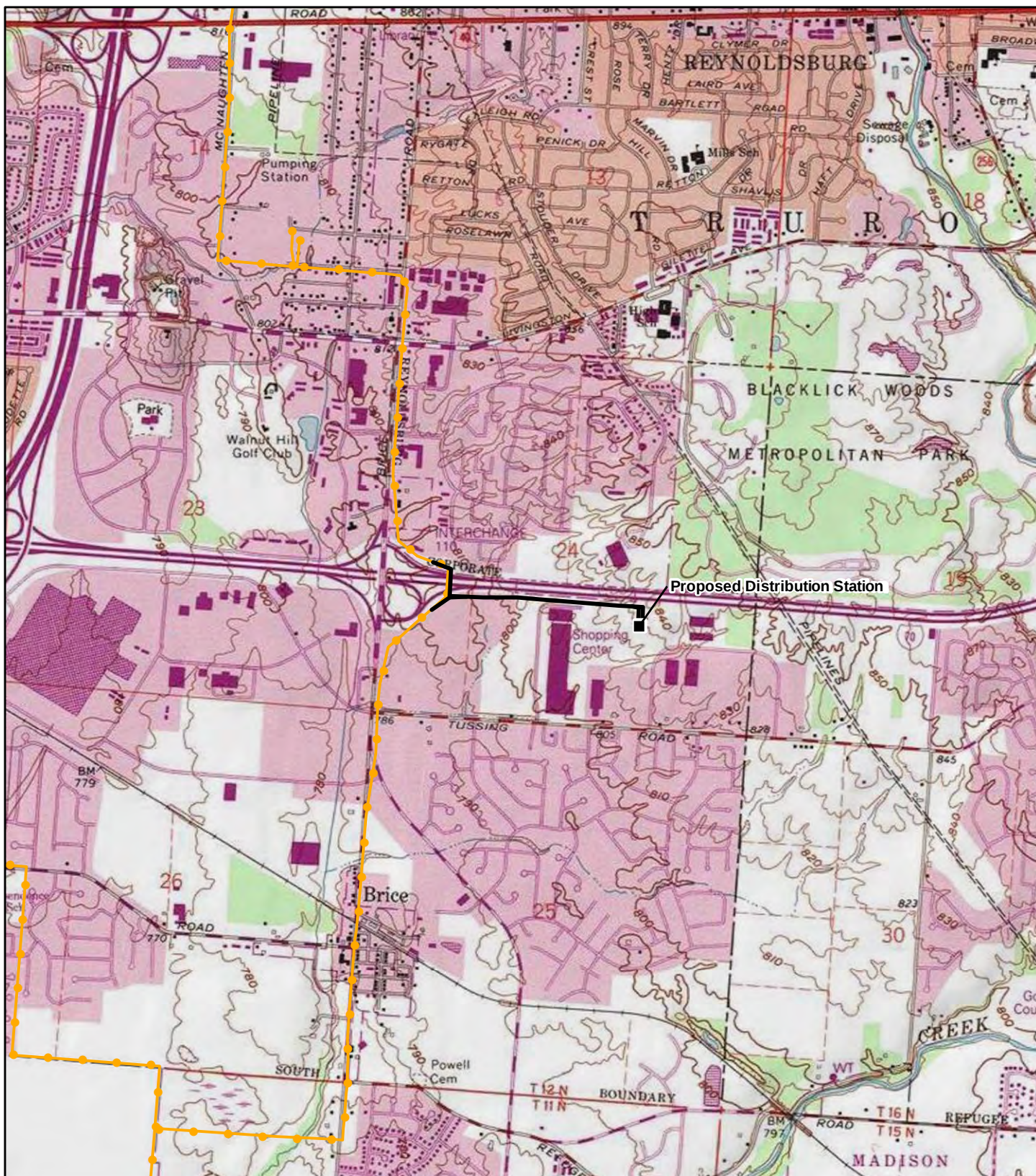
A SWPPP will be completed for the Project and AEP Ohio Transco will submit a NOI application to the Ohio Environmental Protection Agency (OEPA), pursuant to Ohio regulations (OEPA Permit No. OHC000005).

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 AEP Ohio Transco's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Maps and Figures



Legend

- Proposed Distribution Station
- Existing 138 kV Transmission Line
- Proposed 138 kV Transmission Line Extension

Locator Map



Figure 1.1
Project Location Map

Shannon-Astor
138 kV Transmission Line
Extension Project



0 1,000 2,000
Feet

Data Sources Include: Stantec, AEP, NADS,
USGS 7.5' Topographic Quadrangle - Reynoldsburg, OH (1983)
NAD 1983 StatePlane Ohio South FIPS 3402 Feet

July 31, 2018



Legend

- Proposed Distribution Station
- Existing Structure
- Existing Structure to be Replaced as Maintenance
- Existing 138 kV Transmission Line
- Proposed 138 kV Transmission Line Extension

Data Sources Include: Stantec, AEP, OGRIP, NADS, 2017 NAIP
NAD 1983 StatePlane Ohio South FIPS 3402 Feet

July 31, 2018

Locator Map



Figure 1.2 Project Layout Map



Shannon-Astor
138 kV Transmission Line
Extension Project



0 250 500
Feet

**Appendix B PJM RTEP Submittal and 2018 AEP Ohio Transco
LTFR**



AEP Transmission Zone: Supplemental Brice Station

Previously Presented: 3/27/2018 SRRTEP

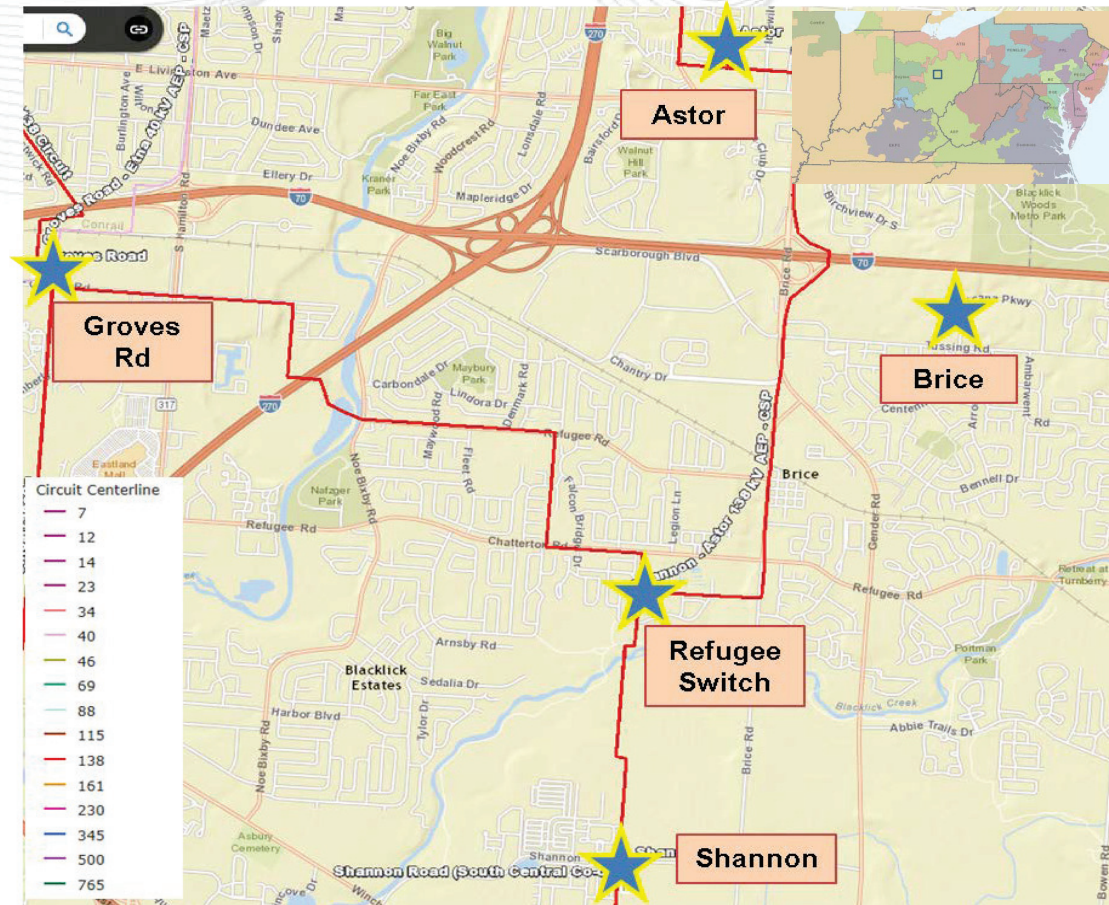
Problem Statement:

Customer Service:

AEP-Ohio has requested a new 138kV delivery point capable of serving 3-50 MVA transformers to address their concerns as listed below.

- Two Distribution circuits from Astor are nearing 90% capabilities. Load transfer options are exhausted.
- One Distribution circuit from Shannon is forecasted to exceed 90% capability in 2018 and 100% capability in 2019 with confirmed additions of block loads. Only temporary load transfers can be utilized as the forecasted loads for all feeders in the area would be exhausted.
- Reynoldsburg 34.5kV/13.2kV Station (served from Distribution line) is radially fed and has no method for recovery in the event of a full station outage. This area has a history of reliability problems and complaints.
- AEP Ohio has been approached numerous times about relocating Reynoldsburg Station by the City of Reynoldsburg for economic development purposes.
- Reynoldsburg and Pataskala areas along I-70 are active residential and commercial load growth centers. No appreciable capacity left on existing facilities.
- With load transfers from Shannon Station to this station, would have ability to utilize the freed up capacity on the Shannon circuits to pick up load from of the areas served by the northern circuits out of Bixby that are starting to have capacity issues.
- With the addition of the Brice Station, we would have sufficient facilities in a very marketable location to push economic development opportunities.

Continued on next slide...



Continued from previous slide...

Operational Flexibility and Efficiency

Columbus is a large urban load center. AEP-Ohio routinely utilizes larger than average Distribution transformers in this area due to load density needs, distribution line routing difficulties, and other reasons. Use of such large Distribution transformers as well as unique combinations of transformer windings operated in parallel tends to put large amounts of customer load at risk. For this reason, circuit breakers will be installed at Brice.

Specifically, in the area of the new Brice station installation, the new station will cut into an existing 3 terminal line. A longer term solution will be required to address the 3 terminal line issue but, in the meantime, it is necessary to avoid increasing load and line exposure to this outdated configuration.

Selected Solution

Cut into existing Astor-Groves-Shannon 138kV circuit with 0.69 miles of new double circuit 795 ACSR (257 MVA rating). **(S1594.1) Estimated Cost: \$0.8M**

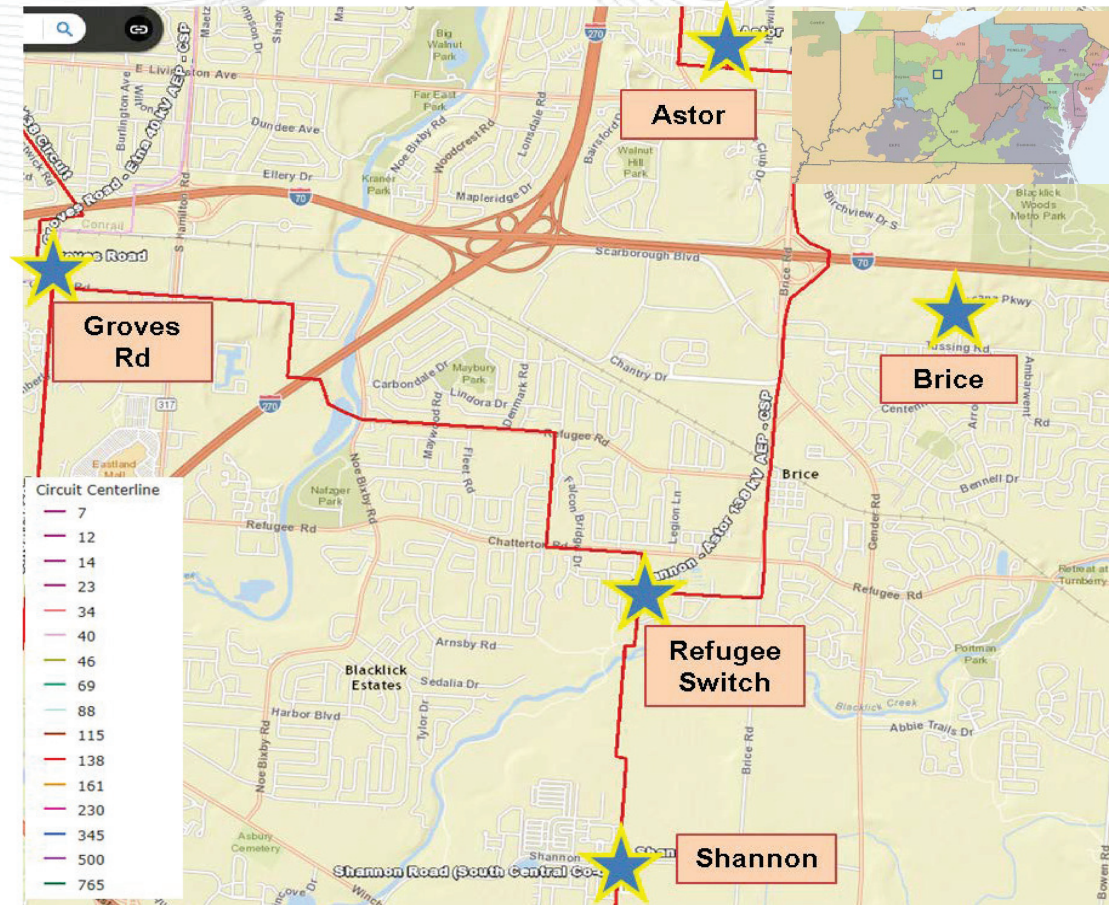
Construct a new Brice station as a ring bus laid out for breaker and a half. Install 3-138kV 3000A 40kA CB's. **(S1594.2) Estimated Cost: \$1.5M**

Total Estimated Transmission Cost: \$2.3M (\$4.0M for Distribution Cost)

Projected In-service: 10/21/2019

Project Status: Scoping

AEP Transmission Zone: Supplemental Brice Station





Legal Department

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
AEP.com

May 31, 2018

Ms. Barcy F. McNeal
Docketing Division Chief
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, Ohio 43215-3793

Christen M. Blend
Senior Counsel –
Regulatory Services
(614) 716-1915 (P)
(614) 716-2950 (F)
cmblend@aep.com

RE: *In the Matter of the Long-Term Forecast Report of AEP Ohio Transmission Company, Inc. and Related Matters*, Case No. 18-1501-EL-FOR

Dear Ms. McNeal:

On April 16, 2018, AEP Ohio Transmission Company, Inc. (the “Company”) initiated this docket by filing its Long-Term Forecast Report (LTFR). In working with Staff and in reviewing the filing for accuracy and completeness, the Company identified several corrections to Forms FE-T9 and FE-T10 related to planned electric transmission lines and proposed substations that will operate at 125 kilovolts (kV) or higher. The Company therefore submits the attached corrected, supplemental Forms FE-T9 and FE-T10 for facilities above 125 kV. This filing supersedes and replaces the Company’s previously-filed Forms FE-T9 and FE-T10 in their entirety.

Additionally, at Staff’s request, the Company intends to file an additional supplement to its Forms FE-T9 and FE-T10 next month to provide information regarding planned electric transmission lines and proposed substations that will operate at 69 kV. At that time, the Company will submit an additional affidavit, as required by Ohio Adm. Code 4901:5-1-03(D), to support the complete supplemental filing.

If there are any additional questions, please do not hesitate to contact me. Thank you for your attention to this matter.

Respectfully submitted,

/s/ Christen M. Blend
Christen M. Blend

PUCO FORM FE-T9
AEP OHIO TRANSMISSION COMPANY
SPECIFICATION OF PLANNED ELECTRIC TRANSMISSION LINES

Filed May 31, 2018

1.	LINE NAME AND (PJM NUMBER):	Astor-Brice (S1594.1)
2.	POINTS OF ORIGIN AND TERMINATION	Astor, Brice; INTERMEDIATE STATION - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.7 Miles / 100ft / double circuit
4.	VOLTAGE: DESIGN / OPERATE	138/138 kV, both circuits
5.	APPLICATION FOR CERTIFICATE:	LON in 2018
6.	CONSTRUCTION:	To be completed approx. October 2019
7.	CAPITAL INVESTMENT:	Total is approximately \$2 Million (s1594.1)
8.	PLANNED SUBSTATION:	NAME - Brice; TRANS. VOLTAGE - 138/13kV; ACREAGE - ~3; LOCATION - 6870 American Parkway
9.	SUPPORTING STRUCTURES:	Overhead
10.	PARTICIPATION WITH OTHER UTILITIES	None
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	Connect new customer delivery point.
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Customer delivery point could not be energized.
13.	MISCELLANEOUS:	N/A

Appendix C Ecological Resources Inventory Report



**Shannon-Astor 138 kV
Transmission Line Extension
Project, Franklin County, Ohio**

**Ecological Resources Inventory
Report**

Prepared for:

AEP Ohio Transmission Company, Inc.
700 Morrison Road
Gahanna, Ohio 43230

Prepared by:

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

July 31, 2018

Sign-off Sheet

This document entitled Ecological Resources Inventory Report, Shannon-Astor 138 kV Transmission Line Extension Project, Franklin County, Ohio was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of AEP Ohio Transmission Company, Inc (the "Client"). 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.



Prepared by _____

(signature)

Betsy Ewoldt



Reviewed by _____

(signature)

Dan Godec

Table of Contents

1.0	INTRODUCTION	1
2.0	METHODS.....	2
2.1	WETLAND DELINEATION.....	2
2.2	STREAM DELINEATION	2
2.3	RARE SPECIES.....	2
3.0	RESULTS	3
3.1	TERRESTRIAL HABITAT.....	3
3.2	WETLANDS.....	4
3.3	STREAMS	5
3.4	OPEN WATERS.....	5
3.5	RARE, THREATENED, OR ENDANGERED SPECIES HABITAT	6
4.0	CONCLUSIONS AND RECOMMENDATIONS.....	14
5.0	REFERENCES.....	16

LIST OF TABLES

Table 1. Vegetation Communities and Land Cover Found within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio	3
Table 2. Summary of Wetland Resources Found within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio	4
Table 3. Summary of Stream Resources Found within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio	5
Table 4. Summary of Potential Ohio State-Listed Species within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio	6
Table 5. Summary of Potential Federally-Listed Species within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio	12

LIST OF APPENDICES

APPENDIX A	FIGURES	A.1
A.1	Figure 1 – Project Location Map.....	A.1
A.2	Figure 2 – Wetland and Waterbody Delineation Map.....	A.2
A.3	Figure 3 – Habitat Assessment Map	A.3
APPENDIX B	AGENCY CORRESPONDENCE	B.1
APPENDIX C	REPRESENTATIVE PHOTOGRAPHS	C.1
APPENDIX D	DATA FORMS.....	D.1

**ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION
PROJECT, FRANKLIN COUNTY, OHIO**

D.1	HHEI Data Forms.....	D.1
D.2	Wetland Determination Data Forms.....	D.2

**ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION
PROJECT, FRANKLIN COUNTY, OHIO**

Introduction
July 31, 2018

1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is planning to construct/extend approximately 4,300 feet of new 138 kilovolt (kV) transmission line eastward from the existing Shannon-Astor 138 kV transmission line. The new 138 kV transmission line is being extended to energize a proposed electric distribution substation in Franklin County, Ohio (Figure 1, Appendix A). The Project is located off Americana Parkway, just south of Interstate 70, in the City of Columbus, and just north of Interstate 70 in the City of Reynoldsburg. 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) scientists on June 14, 2018. The approximate locations of features located up to 50 feet outside of the Project area limits were also recorded during the field surveys, where landowner access was permitted. However, no data forms were completed for features that did not extend into the Project area. These features are shown on the Figure 2 map in Appendix A as “approximate” wetlands, streams (waterways), open waters, and upland drainage features.

Methods
July 31, 2018

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. 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
July 31, 2018

3.0 RESULTS

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on June 14, 2018 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 habitats and locations of any identified rare, threatened or endangered species 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 Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin 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
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 included black locust (<i>Robinia pseudoacacia</i>), eastern cottonwood (<i>Populus deltoides</i>), pignut hickory (<i>Carya glabra</i>), green ash (<i>Fraxinus pennsylvanica</i>), pin oak (<i>Quercus palustris</i>), honeysuckle (<i>Lonicera</i> spp.), wild grape (<i>Vitis vulpina</i>), and spicebush (<i>Lindera benzoin</i>).	No	0.87
Old Field	Extreme Disturbance/Ruderal Community (dominated by planted non-native herbaceous species, opportunistic invaders, or native highly tolerant taxa). Common plant species included tall fescue (<i>Schedonorus arundinaceus</i>), red clover (<i>Trifolium pratense</i>), dogbane (<i>Apocynum cannabinum</i>), Queen Anne's lace (<i>Daucus carota</i>), Fuller's teasel (<i>Dipsacus fullonum</i>), autumn olive (<i>Elaeagnus umbellata</i>), and curly dock (<i>Rumex crispus</i>).	No	1.52

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results

July 31, 2018

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
Paved/Parking Lot	Extreme Disturbance/existing gravel and/or paved road.	No	4.53
Maintained Lawn	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders and/or native highly tolerant taxa.) Common plant species included tall fescue, Kentucky bluegrass (<i>Poa pratensis</i>), dandelion (<i>Taraxacum officinale</i>), and red clover (<i>Trifolium pratense</i>).	No	3.84
Palustrine Emergent Wetland	Moderate Disturbance/Natural Community (dominated by native herbaceous species and/or opportunistic invaders).	No	0.05
Open Water	Existing Stormwater Retention Pond	No	0.12
Total			10.93

3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project area on June 14, 2018. 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 is provided in Table 2.

Table 2. Summary of Wetland Resources Found within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio

Wetland Name	Photo Location Number¹	Isolated?	Wetland Classification²	ORAM Score⁴	ORAM Category⁴	Delineated Area (acres) within Project Area
Wetland 1	2	No	PEM ³	34.5	2	0.013
Wetland 2	4	No	PEM ³	18	1	0.018
Wetland 3	5	No	PEM ³	24.5	1	0.015
Total						0.046

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results

July 31, 2018

Wetland Name	Photo Location Number ¹	Isolated?	Wetland Classification ²	ORAM Score ⁴	ORAM Category ⁴	Delineated Area (acres) within Project Area
¹ Appendix C – Representative Photographs						
² Wetland classification is based on Cowardin et al. (1979).						
³ PEM = Palustrine Emergent Wetland						
⁴ ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetlands v. 5.0 (Mack 2001).						

3.3 STREAMS

Stantec completed field surveys for waterbodies within the Project area on June 14, 2018. Stantec completed field surveys within the Project area on June 14, 2018, for streams. One intermittent stream was delineated within the Project area. Figure 2 (Appendix A) shows the locations of the stream identified within the Project area.

Table 3. Summary of Stream Resources Found within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio

Stream Name	Photo Location Number ¹	Receiving Waters	Stream Flow Regime ²	Stream Evaluation Method	Stream Evaluation Score	OHWM Width (feet) ³	Delineated Length (feet) within Project Area
Stream 1	3	Blacklick Creek	Intermittent	HHEI	59	8	136
TOTAL							136
¹ Appendix C – Representative Photographs as shown on Figure 2 (Appendix A)							
² Stream classification is based on Federal Register/Vol. 67, No. 10 (USACE 2002)							
³ OHWM = Ordinary High Water Mark							

3.4 OPEN WATERS

One open water body (Open Water 1) was delineated within the Project area during the field surveys completed on June 14, 2018. The open water area was a stormwater retention pond located behind a fenced area within the Project area and extended beyond the Project area to the north. There were no outlets or inlets to the open water identified within the Project area.

Results
July 31, 2018

3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Ohio State-Listed Species within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Birds								
Upland Sandpiper	<i>Bartramia longicauda</i>	E	No	No	Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (ODNR 2018b). Large areas of grassland/lightly-moderately grazed pasture habitats (≥ 20 acres) are required to be suitable as upland sandpiper nesting habitat (McCormac and Kennedy 2004; NatureServe 2017; USFWS 2001).	No	No suitable habitat is present within the Project area. Therefore, no impacts are anticipated.	If upland sandpiper habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.
Insects								
Regal Fritillary	<i>Speyeria idalia</i>	E	Yes	No	Occurs in tall grass prairie remnants (Lotts and Naberhaus 2016). This species prefers open grassland, savannah, and old field habitats; all with varying degrees of hydrology. Heavily treed areas are not utilized due to the impediment of movement and migration (NatureServe 2017).	Yes	A small amount of potentially suitable habitat is present within the Project area (old field habitat). Impacts are possible though not likely due to the overall rarity of this species and lack of known occurrences within Project vicinity.	No comments were received from ODNR.
Fish								
Spotted Darter	<i>Etheostoma maculatum</i>	E	Yes	No	This fish is found in medium sized rivers and streams. They are typically found in areas of swift current at the top or bottom end of a riffle where there are many very large boulders or flab slabs or rock. They spend most of their time hiding under the upstream edge of these large rocks watching for food (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	E	No	No	Adult northern brook lampreys are found in clear brooks with fast flowing water and either sand or gravel bottoms. Juveniles or ammocoetes are found in slow moving water buried in soft substrate of medium to large streams. Water sources must be free flowing (free of dams for both life phases (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Shortnose Gar	<i>Lepisosteus platostomus</i>	E	Yes	No	This fish is found in large rivers and associated overflow ponds and backwaters (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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.
Popeye Shiner	<i>Notropis ariommus</i>	E	Yes	No	This fish is found in extremely clear waters in moderate sized streams. These streams usually have slow to moderate flow and many long slow pools (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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.
Scioto Madtom	<i>Noturus trautmani</i>	E	Yes	No	Prefers tail end of riffles over sand and gravel substrate (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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	<i>Etheostoma tippecanoe</i>	T	Yes	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 2018b).	No	No suitable habitat is present within the Project area. 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.
Tonguetied Minnow	<i>Exoglossum laurae</i>	T	Yes	No	Habitat includes rocky pools and runs of cool to warm water. They prefer clear creeks and small to medium sized rivers of moderate gradient with unsilted bottoms of gravel, cobble, and/or boulder. Spawning occurs in gravel nests in slow to moderate current (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Paddlefish	<i>Polyodon spathula</i>	T	Yes	No	This fish is found in the Ohio River and its larger tributaries, preferring sluggish pools and backwater areas (ODNR 2018b).	No	No suitable habitat is present within the Project area. 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Mussels								
Elephant-Ear	<i>Elliptio crassidens crassidens</i>	E	Yes	No	An inhabitant of channels in large creeks to rivers with moderate to swift currents, primarily on sand and limestone or rock substrates (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Purple Cat's Paw	<i>Epioblasma obliquata obliquata</i>	E	Yes	No	This mussel can be found in medium to large rivers with moderate gradient and riffles. Substrates can be sand to gravel (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	No	Habitat includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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	<i>Epioblasma triquetra</i>	E	Yes	No	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 2017). 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 is present within the Project area. 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.
Long-solid	<i>Fusconaia subrotunda subrotunda</i>	E	Yes	No	This mussel is found in the gravel substrates of shoals and riffles of large rivers, as well as impounded areas (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Washboard	<i>Megaloniaias nervosa</i>	E	Yes	No	This species is typically a large river species, living in the main channel and in some of the overbank areas of reservoirs, but in some instances, it may also become established in medium-sized and even small rivers. It is found in areas with a slow current with muddy to coarse gravel substrates (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Clubshell	<i>Pleurobema clava</i>	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, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Ohio Pigtoe	<i>Pleurobema cordatum</i>	E	Yes	No	This mussel prefers strong currents of large rivers with substrates of sand and gravel though is somewhat tolerant of lentic systems (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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	<i>Quadrula cylindrica cylindrica</i>	E	Yes	No	The 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. Found in medium to large rivers in sand and gravel shoals (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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	<i>Villosa fabalis</i>	E	Yes	No	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (NatureServe 2017; 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 is present within the Project area. 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.
Black Sandshell	<i>Ligumia recta</i>	T	Yes	No	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more. Found in sand, gravel, or silt (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Threehorn Wartyback	<i>Obliquaria reflexa</i>	T	Yes	No	This species is typical of large rivers where there is moderately strong current and a stable substrate composed of gravel, sand, and mud (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Fawnsfoot	<i>Truncilla donaciformis</i>	T	Yes	No	This species occurs in both large and medium-sized rivers at normal depths varying from less than three feet up to 15 to 18 feet in big rivers such as the Tennessee. A substrate of either sand or mud is suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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	<i>Unio merus tetralasmus</i>	T	Yes	No	This species typically inhabits 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 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 2017).	No	No suitable habitat is present within the Project area. 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.
Fanshell	<i>Cyprogenia stegaria</i>	E	Yes	No	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Butterfly	<i>Ellipsaria lineolata</i>	E	Yes	No	This mussel prefers stable substrate containing rock, gravel and sand in swift currents of large rivers (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.
Sharp-ridged Pocketbook	<i>Lampsilis ovata</i>	E	Yes	No	This species is very generalized in habitat preference, adapting well to both impoundment situations as well as free-flowing, shallow rivers. It may be found in big rivers (reservoirs) at depths of 5 to 6 m and in small streams in less than 0.6 m water. Although usually found in moderate to strong current, it can survive in standing water. The most suitable substrate consists of a mixture of gravel and coarse sand mixed with some silt or mud (NatureServe 2017).	No	No suitable habitat is present within the Project area. 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	State Listing ¹	Known to Occur Within Franklin County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Amphibians								
Midland Mud Salamander	<i>Pseudotriton montanus diastictus</i>	T	Yes	No	Muddy springs, slow floodplain streams, and swamps along slow streams; backwater ponds and marshes created by beaver activity (NatureServe 2017).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments were received from ODNR.
Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	E	Yes	No	Rocky, clear creeks and rivers, usually where there are large shelter rocks. This species prefers cool waters with temperatures usually lower than 20 degrees Celsius. High amounts of instream cover are needed for reproduction. Nests are located beneath large flat rocks or submerged logs (NatureServe 2017).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	No comments were received from ODNR.
Mammals								
Indiana Bat	<i>Myotis sodalis</i>	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 2007a; 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 or potentially suitable roost trees were observed within the Project area. Potential Indiana bat foraging habitat is present within the Project area. AEP anticipates that any necessary tree clearing will take place during winter months. Therefore, no impacts to this species are anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.	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 summer months, the DOW 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
¹ E=Endangered; T=Threatened ² According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR 2018a). ³ According to Ohio Natural Heritage Program (Appendix B).								

Results
July 31, 2018

Table 5. Summary of Potential Federally-Listed Species within the Shannon-Astor 138 kV Transmission Line Extension Project Area, Franklin County, Ohio

Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Franklin County?	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Mammals							
Indiana Bat	<i>Myotis sodalis</i>	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 2007a; 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).	No	No potential hibernacula or potentially suitable roost trees were observed within the Project area. Potential Indiana bat foraging habitat is present within the Project area. AEP anticipates that any necessary tree clearing will take place during winter months. Therefore, no adverse effects to this species are anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.	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.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	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).	No	No potential hibernacula or potentially suitable roost trees were observed within the Project area. Potential Indiana bat foraging habitat is present within the Project area. AEP anticipates that any necessary tree clearing will take place during winter months. Therefore, no adverse effects to this species are anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.	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. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule.
Mussels							
Clubshell	<i>Pleurobema clava</i>	E	Yes	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, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams (NatureServe 2017).	No	No suitable habitat is present within the Project area. Therefore, no adverse effects are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	Habitat includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (NatureServe 2017).	No	No suitable habitat is present within the Project area. Therefore, no impacts are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	T	Yes	The 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. Found in	No	No suitable habitat is present within the Project area.	Due to the project type, size, and location, no adverse impacts to this or

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Results
July 31, 2018

Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Franklin County?	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
				medium to large rivers in sand and gravel shoals (NatureServe 2017).		Therefore, no impacts are anticipated.	any other federally listed species is anticipated.
Rayed Bean	<i>Villosa fabalis</i>	E	Yes	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (NatureServe 2017; 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 is present within the Project area. Therefore, no impacts are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
Snuffbox	<i>Epioblasma triquetra</i>	E	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 2017). 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 is present within the Project area. Therefore, no impacts are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
Fish							
Scioto Madtom	<i>Noturus trautmani</i>	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 eat various aquatic invertebrates like most other madtom species (ODNR 2018b).	No	No suitable habitat is present within the Project area. Therefore, no impacts are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
Plants							
Running Buffalo Clover	<i>Trifolium stoloniferum</i>	E	No	Running buffalo clover habitat most commonly consists of mesic woodland in partial to filtered sunlight, where there is a pattern of moderate periodic disturbance for a prolonged period, such as mowing, trampling, or grazing. It has also been found in a variety of disturbed woodland habitats, floodplains, streambanks, grazed woodlots, cemeteries, lawns, old logging roads, and jeep trails (USFWS 2007b, USFWS 2015).	No	No suitable habitat is present within the Project area. Therefore, no impacts are anticipated.	Due to the project type, size, and location, no adverse impacts to this or any other federally listed species is anticipated.
¹ E=Endangered; T=Threatened ² According to USFWS (2018).							

Conclusions and Recommendations
July 31, 2018

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 June 14, 2018. During the field surveys, three wetlands and one stream were 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.

A technical assistance/environmental review request letter was sent to ODNR Ohio Natural Heritage Program (ODNR-ONHP) and the ODNR-Office of Real Estate. The response received from the ODNR-Office of Real Estate (Appendix B) notes that the Project area is within the range of state listed endangered Indiana bat, purple cat's paw, clubshell, northern riffleshell, rayed bean, rabbitsfoot, snuffbox, long solid, Ohio pigtoe, pocketbook, washboard, elephant-ear, black sandshell, Scioto madtom, popeye shiner, northern brook lamprey, spotted darter, shortnose gar, and upland sandpiper. The response also notes that the Project area is within range of state listed threatened threehorn wartyback, pondhorn, fawnsfoot, tonguetied minnow, paddlefish, and Tippecanoe darter. Due to factors such as lack of habitat, project location, and since no in-water work is proposed in a perennial stream, the response concludes that the Project will not likely impact these species.

If suitable Indiana bat roost habitat occurs within the Project area, ODNR recommends trees be conserved. If suitable habitat occurs in 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 summer months, 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. No suitable winter hibernacula or summer roost trees were observed in the Project area. AEP will determine if any summer tree clearing is necessary in areas containing suitable foraging habitat and will proceed accordingly.

The ODNR-Office of Real Estate also notes that the Walter A. Tucker State Nature Preserve – Columbus & Franklin Co. Metro Parks, and the Blacklick Woods Metro Park – Columbus & Franklin Co. Metro Parks, are located within a one-mile radius of the Project area. However, the Project area does not occur within either of the noted parks.

A technical assistance request letter was also submitted to the USFWS. The USFWS response letter states that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project area (Appendix B). The USFWS 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.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

Conclusions and Recommendations
July 31, 2018

The Project area includes potentially suitable foraging habitat for the following federally listed threatened and endangered species: Indiana bat and northern long-eared bat. However, no suitable winter hibernacula or summer roost trees for these species were observed in the Project area. 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, 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.

The USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the project type, size, and location (Appendix B).

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

References

July 31, 2018

5.0 REFERENCES

- Badra, P. J., and R. R. Goforth. 2001. Surveys for the clubshell (*Pleurobema clava*) and other rare clams in Michigan: Final Report – 2000. Michigan Natural Features Inventory Technical Report 2001-07.
- Brack, Virgil Jr., Dale W. Sparks, John O. Whitaker Jr., Brianne L. Walters, and Angela Boyer. 2010. Bats of Ohio. Indiana State University Center for North American Bat Research and Conservation.
- Lotts, Kelly and Thomas Naberhaus. 2016. Butterflies and Moths of North America. Available at <http://www.butterfliesandmoths.org/species/Speyeria-idalia>. Accessed July 5, 2017.
- Mack, J.J. 2001. Ohio Rapid Assessment Method for Wetlands, Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- McCormac, J.S. and Kennedy. 2004. Birds of Ohio. Lone Pine Publishing, Auburn, WA. 360 pp.
- NatureServe. 2017. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, VA. U.S.A. Available <http://explorer.natureserve.org>. Accessed June 14, 2017.
- Ohio Department of Natural Resources (ODNR) Division of Wildlife. 2018a. State Listed Wildlife Species by County. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species/state-listed-species-by-county>. Accessed July 5, 2018.
- ODNR, Division of Wildlife. 2018b. Species Guide Index. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/>. Accessed July 5, 2018.
- Ohio Environmental Protection Agency (OEPA). 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI).
- OEPA. 2012. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 3.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 117 pp.
- Parmalee, P. W. and A. E. Bogan. 1998. The Freshwater Mussels of Tennessee. University of Tennessee Press: Knoxville, Tennessee. 328 pp.
- U.S. Army Corps of Engineers (USACE), Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterway Experiment Station, Vicksburg, Mississippi.

ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION PROJECT, FRANKLIN COUNTY, OHIO

References

July 31, 2018

- USACE. 2002. Issuance of Nationwide Permits; Notice, 67 Fed. Reg. 10. January 15, 2002. Federal Register: The Daily Journal of the United States. Available at <https://www.gpo.gov/fdsys/pkg/FR-2002-01-15/pdf/02-539.pdf>.
- USACE. 2005. *Guidance on Ordinary High Water Mark Identification* (Regulatory Guidance Letter, No. 05-05). Available online at <http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05-05.pdf>. Accessed July 5, 2018.
- USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*, ed. J.S. Wakely R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Service (USFWS). 1994. Clubshell (*Pleurobema clava*) and Northern Riffleshell (*Epioblasma torulosa rangiana*) Recovery Plan. Prepared for the U.S. Fish and Wildlife Service, Hadley, Massachusetts. 68 pp.
- USFWS. 2001. Upland Sandpiper Habitat Model. Available at http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/upland_sandpiper_model.htm. Accessed July 5, 2018.
- USFWS. 2007a. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 258 pp.
- USFWS. 2007b. Running buffalo clover (*Trifolium stoloniferum*) revised recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 76 pp.
- USFWS. 2015. Endangered Species. Running Buffalo Clover (*Trifolium stoloniferum*). Home page. Available at <http://www.fws.gov/midwest/endangered/plants/rbcl/index.html>. Accessed July 5, 2018.
- USFWS. 2016. Environmental Conservation Online System (ECOS): Species Profile for Northern Long-eared Bat (*Myotis septentrionalis*). Available online at https://ecos.fws.gov/tess_public/profile/speciesProfile?spcode=A0JE. Accessed July 5, 2017.
- USFWS. 2017. 2017 Range-wide Indiana Bat Summer Survey Guidelines, May 2017. Available at <https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>. Accessed July 5, 2018.
- USFWS. 2018. Federally Listed Species by Ohio Counties. Available at <https://www.fws.gov/midwest/ohio/EndangeredSpecies/pdf/SpeciesListByCountyApril2018.pdf>. Accessed July 5, 2018.
- Watters, G. T., M. A. Hoggarth, and D. H. Stansbery. 2009. The Freshwater Mussels of Ohio. The Ohio State University Press, Columbus, OH. 421 pp.

Figures
July 31, 2018

Appendix A **FIGURES**

A.1 **FIGURE 1 – PROJECT LOCATION MAP**

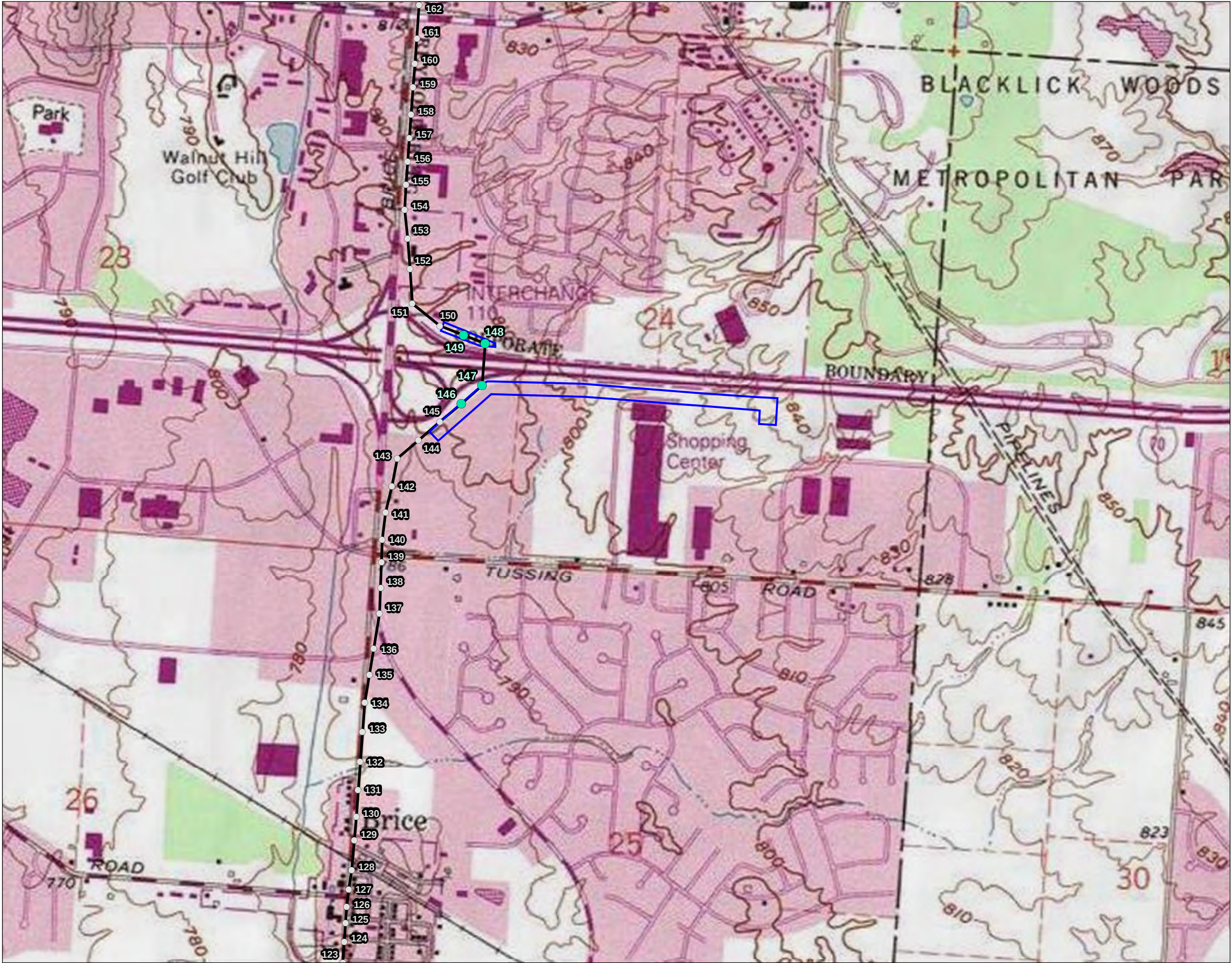


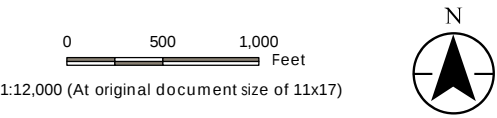
Figure No.
1

Title
Project Location Map

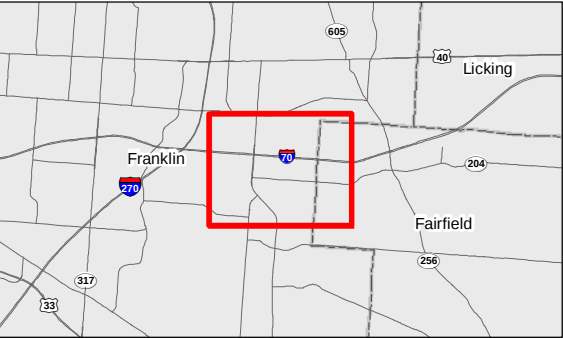
Client/Project
AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line
Extension Project

Project Location
Franklin County, Ohio

193705839
Prepared by BAE on 2018-06-25
Technical Review by JLH on 2018-07-16
Independent Review by DJG on 2018-07-16



- Legend**
- Existing Structure
 - Existing Structure to be Replaced
 - Existing Transmission Line
 - Project Area



- Notes**
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 2. Data Sources Include: Stantec, AEP, NADS, USGS
 3. Background: USGS 7.5' Topographic Quadrangle - Reynoldsburg (OH, 1985)



Figures
July 31, 2018

A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP



Figure No.

Wetland and Waterbody Delineation Map

Client/Project
AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line
Extension Project

Project Location	193705839
Franklin County, Ohio	Prepared by BE on 2018-06-22 Technical Review by JLH on 2018-07-16 Independent Review by DJG on 2018-07-16

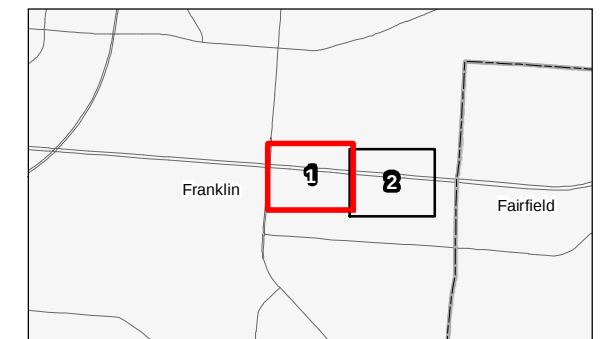
0 100 200 Feet
1:2,400 (At original document size of 11x17)



Legend

-  Existing Structure
-  Existing Structure to be Replaced
-  Existing Transmission Line
-  Project Area
-  Wetland Determination Sample Point
-  Culvert
-  Photo Location
-  Upland Drainage Feature
-  Approximate Upland Drainage Feature
-  Field Delineated Waterway
-  Approximate Waterway
-  Field Delineated Open Water
-  Approximate Open Water
-  Field Delineated Emergent Wetland
-  Approximate Wetland
-  FEMA Flood Hazard Area*
-  100-year Flood Zone
-  100-year Floodway

*No features within data frame



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, OGRIP, USGS, NADS
3. Orthophotography: 2017 NAIP



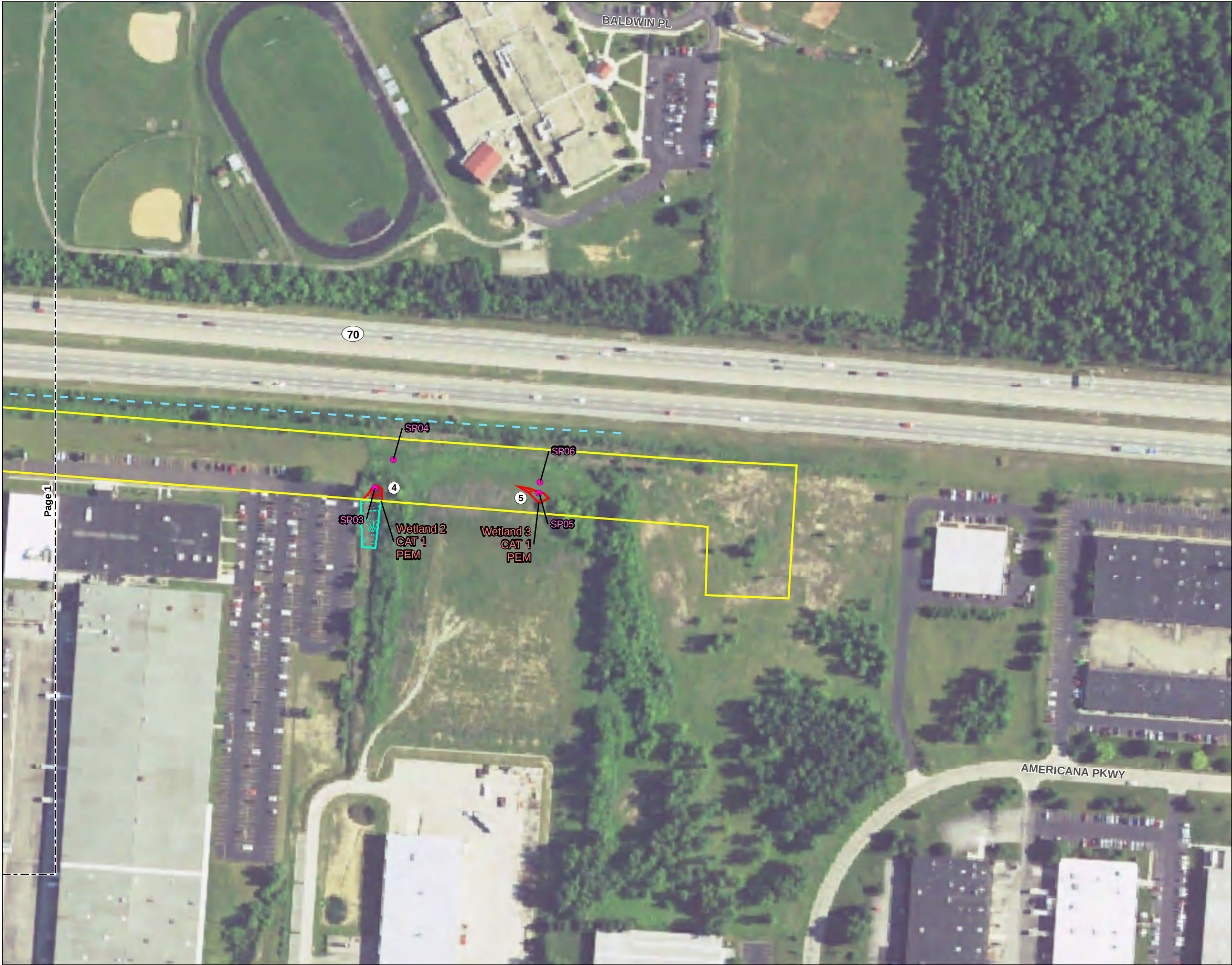


Figure No.
2

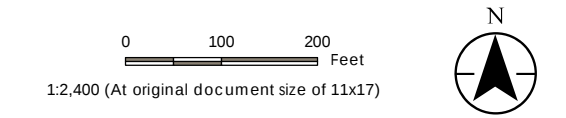
Title
Wetland and Waterbody
Delineation Map

Client/Project
AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line
Extension Project

Project Location
Franklin County, Ohio

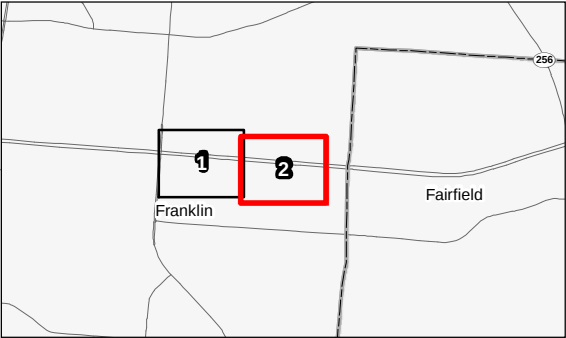
193705839

Prepared by BE on 2018-06-22
Technical Review by JH on 2018-07-16
Independent Review by DJG on 2018-07-16



- Legend
- Existing Structure
 - Existing Structure to be Replaced
 - Existing Transmission Line
 - Project Area
 - Wetland Determination Sample Point
 - Culvert
 - Photo Location
 - Upland Drainage Feature
 - Approximate Upland Drainage Feature
 - Field Delineated Waterway
 - Approximate Waterway
 - Field Delineated Open Water
 - Approximate Open Water
 - Field Delineated Emergent Wetland
 - Approximate Wetland
 - FEMA Flood Hazard Area*
 - 100-year Flood Zone
 - 100-year Floodway

*No features within data frame



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources Include: Stantec, AEP, OGRIP, USGS, NADS
- Orthophotography: 2017 NAIP



Figures
July 31, 2018

A.3 FIGURE 3 – HABITAT ASSESSMENT MAP

V:\1937\Active\193705839\03_data\08_cad\gis\mxd\eco_figures\fig3_habareaa.eco_193705839.mxd Revised: 2018-07-16 By: bwowdt

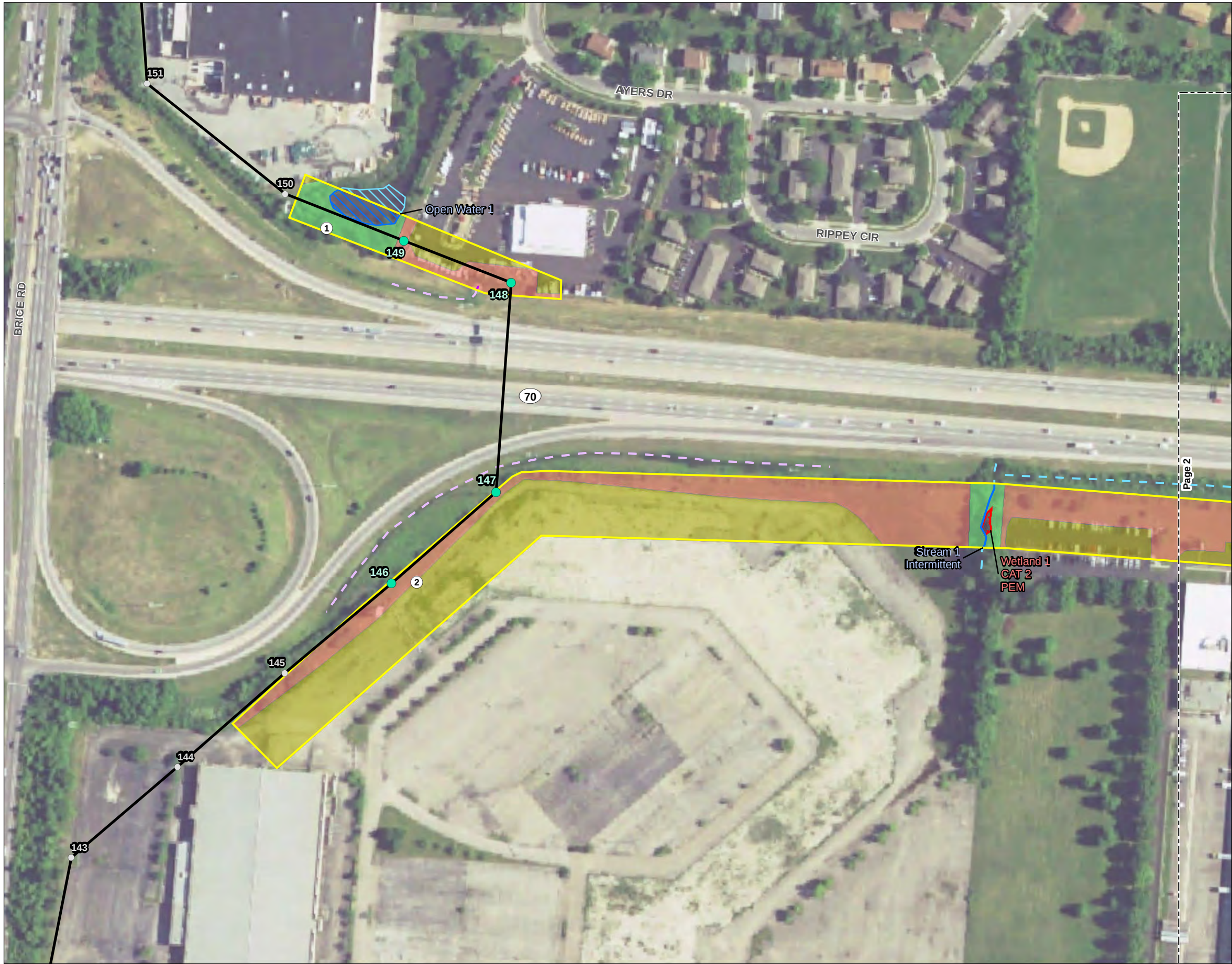


Figure No.
3

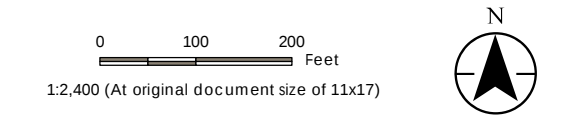
Title
Habitat Assessment Map

Client/Project
AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line
Extension Project

Project Location
Franklin County, Ohio

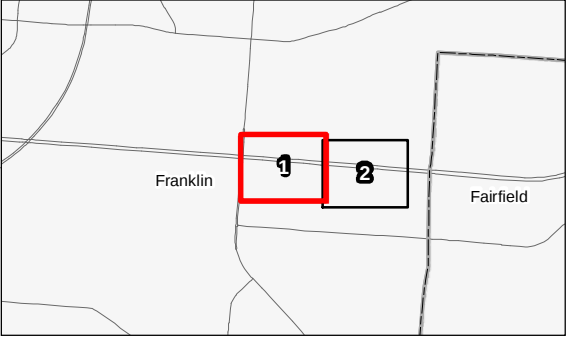
193705839

Prepared by BAE on 2018-06-25
Technical Review by JLH on 2018-07-16
Independent Review by DJG on 2018-07-16



Legend

Existing Structure	Habitat Area
Existing Structure to be Replaced	Mixed Early Successional/Second Growth Deciduous Forest
Existing Transmission Line	Maintained Lawn
Project Area	Old Field
Photo Location	Existing Paved/Parking Lot
Upland Drainage Feature	
Approximate Upland Drainage Feature	
Field Delineated Waterway	
Approximate Waterway	
Field Delineated Open Water	
Approximate Open Water	
Field Delineated Emergent Wetland	
Approximate Wetland	



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, OGRIP, USGS, NADS
3. Orthophotography: 2017 NAIP





Figure No.
3

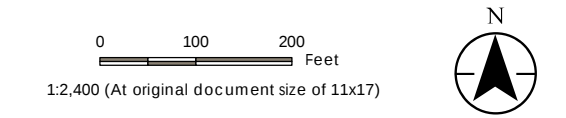
Title
Habitat Assessment Map

Client/Project
AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line
Extension Project

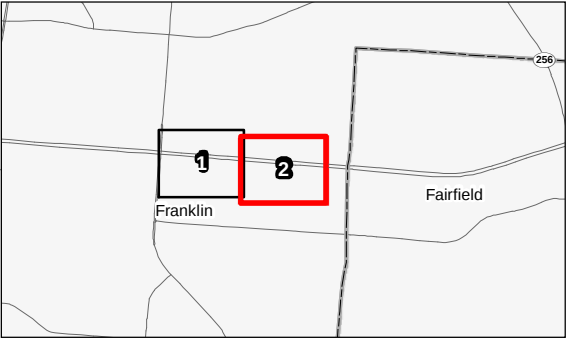
Project Location
Franklin County, Ohio

193705839

Prepared by BAE on 2018-06-25
Technical Review by JH on 2018-07-16
Independent Review by DJG on 2018-07-16



- Legend**
- | | |
|-------------------------------------|---|
| Existing Structure | Habitat Area |
| Existing Structure to be Replaced | Mixed Early Successional/Second Growth Deciduous Forest |
| Existing Transmission Line | Maintained Lawn |
| Project Area | Old Field |
| Photo Location | Existing Paved/Parking Lot |
| Upland Drainage Feature | |
| Approximate Upland Drainage Feature | |
| Field Delineated Waterway | |
| Approximate Waterway | |
| Field Delineated Open Water | |
| Approximate Open Water | |
| Field Delineated Emergent Wetland | |
| Approximate Wetland | |



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, OGRIP, USGS, NADS
3. Orthophotography: 2017 NAIP



Agency Correspondence
July 31, 2018

Appendix B AGENCY CORRESPONDENCE



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

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

March 9, 2018

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

Re: 18-219; AEP Brice Station 138 kV Transmission Line Extension Project

Project: The proposed project involves the construction of approximately 3,600 feet of new 138 kV transmission line from an existing 138 kV transmission line west of the proposed Brice Station facility.

Location: The proposed project is in the City of Reynoldsburg, Franklin County, Ohio.

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

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

Walter A. Tucker State Nature Preserve – Columbus & Franklin Co. Metro Parks
Blacklick Woods Metropark – Columbus & Franklin Co. Metro Parks

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

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 to include: 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 the purple cat's paw (*Epioblasma o. obliquata*), 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 species, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federal candidate mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federal endangered mussel, the long solid (*Fusconaia maculata maculata*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the pocketbook (*Lampsilis ovata*), a state endangered mussel, the washboard (*Megaloniais nervosa*), a state endangered mussel, the elephant-ear (*Elliptio crassidens crassidens*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the pondhorn (*Unio merus tetralasmus*), a state threatened mussel, and the fawnsfoot (*Truncilla donaciformis*), 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, the popeye shiner (*Notropis ariommus*), a state endangered fish, the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the tonguetied minnow (*Exoglossum laurae*), a state threatened fish, the paddlefish (*Polyodon spathula*) a state threatened 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 upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands,

seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of 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.

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

Godec, Daniel

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, January 25, 2018 8:32 AM
To: Godec, Daniel
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: AEP Ohio - Brice Station 138 kV Transmission Line Extension, Franklin Co.



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#: 03E15000-2018-TA-0519

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/nleeb/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 long-eared 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 john.kessler@dnr.state.oh.us.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson", is written over a faint, illegible typed name.

Dan Everson
Field Supervisor

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

**ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION
PROJECT, FRANKLIN COUNTY, OHIO**

Representative Photographs
July 31, 2018

Appendix C REPRESENTATIVE PHOTOGRAPHS

Wetland and Waterbody Photographs

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 1. View of fence around Open Water 1. Photograph taken facing northwest.



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

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 2. View of Wetland 1 and wetland determination sample point SP01.
Photograph taken facing west.



Photo Location 2. View of Wetland 1 and wetland determination sample point SP01.
Photograph taken facing south.

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 3. View of Stream 1. Photograph taken facing north (upstream).



Photo Location 3. View of Stream 1. Photograph taken facing south (downstream).

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 4. View of Wetland 2. Photograph taken facing east.



Photo Location 4. View of Wetland 2. Photograph taken facing south.

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 5. View of Wetland 3. Photograph taken facing east.



Photo Location 5. View of Wetland 3. Photograph taken facing west.

Habitat Photographs

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 1. Representative view of early successional deciduous forest habitat.
Photograph taken facing north.



Photo Location 2. Representative view of industrial land and maintained lawn. Photograph
taken facing northeast.

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 3. Representative view of old field habitat. Photograph taken facing west.



Photo Location 4. Representative view of old field habitat. Photograph taken facing east.

AEP Ohio Transmission Company, Inc.
Shannon-Astor 138 kV Transmission Line Extension Project
Franklin County, Ohio



Photo Location 4. Representative view of early successional deciduous forest habitat.
Photograph taken facing west.

Data Forms
July 31, 2018

Appendix D DATA FORMS

D.1 HHEI DATA FORMS



Primary Headwater Habitat Evaluation Form

59

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **Shannon-Astor 138kV Line Extension**

SITE NUMBER

RIVER BASIN

DRAINAGE AREA (mi²)

0.16

LENGTH OF STREAM REACH (ft) **136**LAT. **39.93184**LONG. **-82.82398**

RIVER CODE

RIVER MILE

DATE **06/14/18**SCORER **BAE**COMMENTS **Intermittent****NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions****STREAM CHANNEL MODIFICATIONS:**☐ NONE / NATURAL CHANNEL☐ RECOVERED☒ RECOVERING☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check **ONLY** two predominant substrate **TYPE** boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE

☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☒	☐

BLDR SLABS [16 pts]

BOULDER (>256 mm) [16 pts]

BEDROCK [16 pt]

COBBLE (65-256 mm) [12 pts]

GRAVEL (2-64 mm) [9 pts]

SAND (<2 mm) [6 pts]

PERCENT

0%
0%
0%
5%
15%
30%

TYPE

☒
☐
☐
☐
☐
☐

SILT [3 pt]

LEAF PACK/WOODY DEBRIS [3 pts]

FINE DETRITUS [3 pts]

CLAY or HARDPAN [0 pt]

MUCK [0 pts]

ARTIFICIAL [3 pts]

PERCENT

30%
0%
0%
20%
0%
0%

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock

5.00%

(A)

100%

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

9

TOTAL NUMBER OF SUBSTRATE TYPES:

5

**HHEI
Metric
Points**Substrate
Max = 40

14

A + B

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check **ONLY** one box):

☐
☐
☒

> 30 centimeters [20 pts]

> 22.5 - 30 cm [30 pts]

> 10 - 22.5 cm [25 pts]

☐
☐
☐

> 5 cm - 10 cm [15 pts]

< 5 cm [5 pts]

NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

20

Pool Depth
Max = 30

25

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check **ONLY** one box):

☐
☐
☒

> 4.0 meters (> 13') [30 pts]

> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]

> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]

☐
☐
☐

> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]

≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS

AVERAGE BANKFULL WIDTH (meters):

2.50

Bankfull
Width
Max=30

20

This information **must** also be completed**RIPARIAN ZONE AND FLOODPLAIN QUALITY**

☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH**FLOODPLAIN QUALITY**

L R

(Per Bank)

☐	☐
--------------------------	--------------------------

Wide >10m

☒	☒
-------------------------------------	-------------------------------------

Moderate 5-10m

☐	☐
--------------------------	--------------------------

Narrow <5m

☐	☐
--------------------------	--------------------------

None

☐	☐
--------------------------	--------------------------

COMMENTS

L R

(Most Predominant per Bank)

☐	☐
--------------------------	--------------------------

Mature Forest, Wetland

☒	☒
-------------------------------------	-------------------------------------

Immature Forest, Shrub or Old Field

☐	☐
--------------------------	--------------------------

Residential, Park, New Field

☐	☐
--------------------------	--------------------------

Fenced Pasture

L R

☐	☐
--------------------------	--------------------------

Conservation Tillage

☐	☐
--------------------------	--------------------------

Urban or Industrial

☐	☐
--------------------------	--------------------------

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

☐
☐

Moist Channel, isolated pools, no flow (Intermittent)

Dry channel, no water (Ephemeral)

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check **ONLY** one box):

☐
☐

None

0.5

☒
☐

1.0

1.5

☐
☐

2.0

2.5

☐
☐

3.0

>3

STREAM GRADIENT ESTIMATE☐ Flat (0.5 ft/100 ft)☒ Flat to Moderate☐ Moderate (2 ft/100 ft)☐ Moderate to Severe☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: Unnamed Tributary (Blacklick Creek RM 6.5) Distance from Evaluated Stream 2.4 miles
☐ CWH Name: Distance from Evaluated Stream
☐ EWH Name: Distance from Evaluated Stream

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Franklin Township / City: Reynoldsburg & Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 6/13/18 Quantity: 1.72 in.
Photograph Information: Upstream & Downstream
Elevated Turbidity? (Y/N): N Canopy (% open): 20%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

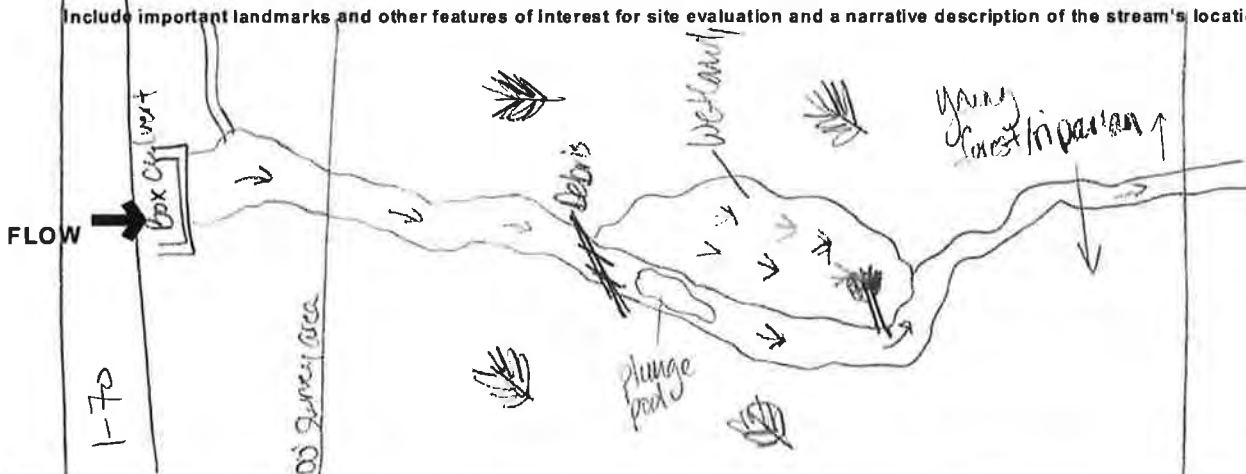
Additional comments/description of pollution impacts:

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
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



**ECOLOGICAL RESOURCES INVENTORY REPORT, SHANNON-ASTOR 138 KV TRANSMISSION LINE EXTENSION
PROJECT, FRANKLIN COUNTY, OHIO**

Data Forms
July 31, 2018

D.2 WETLAND DETERMINATION AND ORAM DATA FORMS

Wetland Determination Data Forms

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839	Date: 06/14/18
Applicant: AEP			County: Franklin
Investigator #1: Betsy Ewoldt		Investigator #2:	State: Ohio
Soil Unit: Crosby silt loam, 2 to 6 percent slopes	NW1/WWI Classification: N/A		Wetland ID: Wetland 1
Landform: Floodplain	Local Relief: Concave		Sample Point: SP01
Slope (%): 2	Latitude: 39.93182	Longitude: -82.82397	Community ID: PEM
Datum: --			Section: 24
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 12N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		Range: 21W Dir: --	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: Sample point located on floodplain shelf next to Stream 1.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

Field Observations: Surface Water Present? ☐ Yes ☐ No Depth: (in.) Water Table Present? ☐ Yes ☐ No Depth: (in.) Saturation Present? ☐ Yes ☐ No Depth: (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Crosby silt loam, 2 to 6 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	16	A	10YR	4/2	95	10YR	5/8	5	C	M	sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat	☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions
---	--

Indicators for Problematic Soils¹

☐ A16 - Coast Prairie Redox
☐ S7 - Dark Surface
☐ F12 - Iron-Manganese Masses
☐ TF12 - Very Shallow Dark Surface
☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
---------------------------------	------------------	-------------------	---

Remarks: **Sedimentation present near top layer of soil in the profile. Stream frequently floods this low lying area and deposits sediment here.**

Project/Site: **Shannon-Astor 138 kV Line Extension Project** Wetland ID: **Wetland 1** Sample Point: **SP01**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	10	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **10**

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Fraxinus pennsylvanica</i>	20	Y	FACW
2.	<i>Lindera benzoin</i>	10	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **30**

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Fraxinus pennsylvanica</i>	10	--	FACW
2.	<i>Leersia virginica</i>	40	Y	FACW
3.	<i>Lindera benzoin</i>	20	--	FACW
4.	<i>Elymus virginicus</i>	15	--	FACW
5.	<i>Glechoma hederacea</i>	5	--	FACU
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

Total Cover = **90**

Woody Vine Stratum (Plot size: 30 ft radius)

1.	<i>Vitis riparia</i>	20	--	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

Total Cover = **20**

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	145	x 2 =	290
FAC spp.	0	x 3 =	0
FACU spp.	5	x 4 =	20
UPL spp.	0	x 5 =	0

Total **150** (A) **310** (B)

Prevalence Index = B/A = **2.067**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☐ No Dominance Test is > 50%
☐ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839	Date: 06/14/18
Applicant: AEP			County: Franklin
Investigator #1: Betsy Ewoldt		Investigator #2:	State: Ohio
Soil Unit: Crosby silt loam, 2 to 6 percent slopes	NWI/WWI Classification: N/A		Wetland ID: Wetland 1
Landform: --	Local Relief: Convex		Sample Point: SP02
Slope (%): --	Latitude: 39.93194	Longitude: -82.82376	Community ID: Upland
Datum: --			Section: 24
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 12N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		Range: 21W Dir: --	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: Sample point located in mowed lawn area adjacent to and uphill from stream 1.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Crosby silt loam, 2 to 6 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%	Color (Moist)	%	Type	Location		
0	16	A	10YR	3/3	100	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat	☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	Indicators for Problematic Soils¹ ☐ A16 - Coast Prairie Redox ☐ S7 - Dark Surface ☐ F12 - Iron-Manganese Masses ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
---	---	---

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
---------------------------------	------------------	-------------------	---

Remarks: **[E.g. Soil profile matches the Elm Lake series soil. Elm Lake soils are a known hydric inclusion in the Merillan sandy loam map unit.]**

Project/Site: **Shannon-Astor 138 kV Line Extension Project**

Wetland ID: **Wetland 1**

Sample Point: **SP02**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.				#N/A
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.				--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)				
1.	<i>Poa pratensis</i>	40	Y	FAC
2.	<i>Schedonorus arundinaceus</i>	40	Y	FACU
3.	<i>Trifolium pratense</i>	10	N	FACU
4.	<i>Taraxacum officinale</i>	10	N	FACU
5.				#N/A
6.				#N/A
7.				#N/A
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Vegetation disturbed from recent mowing**

Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>40</u>	x 3 =	<u>120</u>
FACU spp.	<u>60</u>	x 4 =	<u>240</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 100 (A) 360 (B)

Prevalence Index = B/A = 3.600

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☐ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839	Date: 06/14/18
Applicant: AEP			County: Franklin
Investigator #1: Betsy Ewoldt		Investigator #2:	State: Ohio
Soil Unit: Kokomo silty clay loam, 0 to 2 percent slopes	NW1/WW1 Classification: N/A		Wetland ID: Wetland 2
Landform: Depression	Local Relief: Concave		Sample Point: SP03
Slope (%): 3	Latitude: 39.9315	Longitude: -82.81977	Community ID: PEM
Datum: --			Section: 24
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 12N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		Range: 21W Dir: --	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: Sample point located in depressional swale	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

Field Observations: Surface Water Present? ☒ Yes ☐ No Depth: 1 (in.) Water Table Present? ☒ Yes ☐ No Depth: 0 (in.) Saturation Present? ☒ Yes ☐ No Depth: 0 (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Kokomo silty clay loam, 0 to 2 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	16	A	10YR	4/2	90	10YR	4/6	10	C	PL	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat	☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions
---	--

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
---------------------------------	------------------	-------------------	---

Remarks:

Project/Site: **Shannon-Astor 138 kV Line Extension Project** Wetland ID: **Wetland 2** Sample Point: **SP03**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.				#N/A
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	<i>Salix interior</i>	20	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		20		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Carex crinita</i>	10	N	OBL
2.	<i>Carex annectens</i>	20	Y	FACW
3.	<i>Typha angustifolia</i>	60	Y	OBL
4.	<i>Carex squarrosa</i>	10	N	OBL
5.	<i>Eupatorium perfoliatum</i>	5	N	OBL
6.	<i>Scirpus atrovirens</i>	5	N	OBL
7.	<i>Toxicodendron radicans</i>	10	N	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		120		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Vegetation disturbed from parking lot abutting wetland to the west.**

Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	90	x 1 =	90
FACW spp.	40	x 2 =	80
FAC spp.	10	x 3 =	30
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0

Total **140** (A) **200** (B)

Prevalence Index = B/A = **1.429**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☐ No Dominance Test is > 50%
☐ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839	Date: 06/14/18
Applicant: AEP			County: Franklin
Investigator #1: Betsy Ewoldt		Investigator #2:	State: Ohio
Soil Unit: Kokomo silty clay loam, 0 to 2 percent slopes	NWI/WWI Classification: N/A		Wetland ID: Wetland 2
Landform: --	Local Relief: Convex		Sample Point: SP04
Slope (%): --	Latitude: 39.93166	Longitude: -82.81984	Community ID: Upland
Datum: --			Section: 24
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 12N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?	Range: 21W Dir: --
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No

Remarks: **Sample point in old field adjacent and uphill from wetland.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present) ☐

Primary:

- | | |
|--|---|
| ☐ A1 - Surface Water | ☐ B9 - Water-Stained Leaves |
| ☐ A2 - High Water Table | ☐ B13 - Aquatic Fauna |
| ☐ A3 - Saturation | ☐ B14 - True Aquatic Plants |
| ☐ B1 - Water Marks | ☐ C1 - Hydrogen Sulfide Odor |
| ☐ B2 - Sediment Deposits | ☐ C3 - Oxidized Rhizospheres on Living Roots |
| ☐ B3 - Drift Deposits | ☐ C4 - Presence of Reduced Iron |
| ☐ B4 - Algal Mat or Crust | ☐ C6 - Recent Iron Reduction in Tilled Soils |
| ☐ B5 - Iron Deposits | ☐ C7 - Thin Muck Surface |
| ☐ B7 - Inundation Visible on Aerial Imagery | ☐ D9 - Gauge or Well Data |
| ☐ B8 - Sparsely Vegetated Concave Surface | ☐ Other (Explain in Remarks) |

Secondary:

- | |
|--|
| ☐ B6 - Surface Soil Cracks |
| ☐ B10 - Drainage Patterns |
| ☐ C2 - Dry-Season Water Table |
| ☐ C8 - Crayfish Burrows |
| ☐ C9 - Saturation Visible on Aerial Imagery |
| ☐ D1 - Stunted or Stressed Plants |
| ☐ D2 - Geomorphic Position |
| ☐ D5 - FAC-Neutral Test |

Field Observations:

Surface Water Present? ☐ Yes ☒ No	Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
Water Table Present? ☐ Yes ☒ No	Depth: (in.)	
Saturation Present? ☐ Yes ☒ No	Depth: (in.)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

SOILS

Map Unit Name: **Kokomo silty clay loam, 0 to 2 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	16	A	10YR	3/3	100	--	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present) ☐

- | | |
|--|---|
| ☐ A1 - Histosol | ☐ S4 - Sandy Gleyed Matrix |
| ☐ A2 - Histic Epipedon | ☐ S5 - Sandy Redox |
| ☐ A3 - Black Histic | ☐ S6 - Stripped Matrix |
| ☐ A4 - Hydrogen Sulfide | ☐ F1 - Loamy Muck Mineral |
| ☐ A5 - Stratified Layers | ☐ F2 - Loamy Gleyed Matrix |
| ☐ A10 - 2 cm Muck | ☐ F3 - Depleted Matrix |
| ☐ A11 - Depleted Below Dark Surface | ☐ F6 - Redox Dark Surface |
| ☐ A12 - Thick Dark Surface | ☐ F7 - Depleted Dark Surface |
| ☐ S1 - Sandy Muck Mineral | ☐ F8 - Redox Depressions |
| ☐ S3 - 5 cm Mucky Peat or Peat | |

Indicators for Problematic Soils¹

- | |
|---|
| ☐ A16 - Coast Prairie Redox |
| ☐ S7 - Dark Surface |
| ☐ F12 - Iron-Manganese Masses |
| ☐ TF12 - Very Shallow Dark Surface |
| ☐ Other (Explain in Remarks) |

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A	Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
--	-------------------	---

Remarks:

Project/Site: **Shannon-Astor 138 kV Line Extension Project** Wetland ID: **Wetland 2** Sample Point: **SP04**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.				#N/A
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **0**

Sapling/Shrub Stratum (Plot size: 15 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.				#N/A
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **0**

Herb Stratum (Plot size: 5 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Poa pratensis</i>	20	Y	FAC
2.	<i>Trifolium repens</i>	10	--	FACU
3.	<i>Cirsium arvense</i>	10	--	FACU
4.	<i>Apocynum cannabinum</i>	25	Y	FAC
5.	<i>Dipsacus fullonum</i>	15	Y	FACU
6.	<i>Elaeagnus commutata</i>	5	--	UPL
7.	<i>Symphotrichum pilosum</i>	10	--	FACU
8.	<i>Erigeron annuus</i>	5	--	FACU
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

Total Cover = **100**

Woody Vine Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

Total Cover = **0**

Remarks:

Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **67%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	45	x 3 =	135
FACU spp.	50	x 4 =	200
UPL spp.	5	x 5 =	25

Total **100** (A) **360** (B)

Prevalence Index = B/A = **3.600**

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☐ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☐ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☐ No | Problem Hydrophytic Vegetation (Explain) * |

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839	Date: 06/14/18
Applicant: AEP			County: Franklin
Investigator #1: Betsy Ewoldt		Investigator #2:	State: Ohio
Soil Unit: Bennington silt loam, 2 to 6 percent slopes	NW/WWI Classification: N/A		Wetland ID: Wetland 3
Landform: Depression	Local Relief: Concave		Sample Point: SP05
Slope (%): 3	Latitude: 39.93148	Longitude: -82.81881	Community ID: PEM
Datum: --			Section: 24
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 12N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		Range: 21W Dir: --	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: Sample point located in depressional area at toe-of-slope of manmade berm.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

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

Field Observations: Surface Water Present? ☒ Yes ☐ No Depth: 1 (in.) Water Table Present? ☒ Yes ☐ No Depth: 6 (in.) Saturation Present? ☒ Yes ☐ No Depth: 0 (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Bennington silt loam, 2 to 6 percent slopes**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	16	A	10YR	4/2	95	10YR	5/6	5	C	PL	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat	☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions
--	--

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
---------------------------------	------------------	-------------------	---

Remarks:

Project/Site: **Shannon-Astor 138 kV Line Extension Project** Wetland ID: **Wetland 3** Sample Point: **SP05**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.				#N/A
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.				
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)				
1.	<i>Apocynum cannabinum</i>	30	Y	FAC
2.	<i>Carex annectens</i>	20	Y	FACW
3.	<i>Phalaris arundinacea</i>	15	Y	FACW
4.	<i>Juncus tenuis</i>	15	Y	FAC
5.	<i>Eupatorium perfoliatum</i>	5	N	OBL
6.	<i>Scirpus atrovirens</i>	5	N	OBL
7.	<i>Toxicodendron radicans</i>	10	N	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		

Woody Vine Stratum (Plot size: 30 ft radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Vegetation disturbed from parking lot abutting wetland to the west.**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **4** (A)

Total Number of Dominant Species Across All Strata: **4** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	10	x 1 =	10
FACW spp.	35	x 2 =	70
FAC spp.	55	x 3 =	165
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0
Total	100	(A)	245 (B)
Prevalence Index = B/A =			2.450

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|-----------------------------|--|
| ☐ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☐ No | Dominance Test is > 50% |
| ☐ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☐ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☐ No | Problem Hydrophytic Vegetation (Explain) * |

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

Definitions of Vegetation Strata:

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

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Shannon-Astor 138 kV Line Extension Project		Stantec Project #: 193705839		Date: 06/14/18							
Applicant: AEP		Investigator #1: Betsy Ewoldt		County: Franklin							
Investigator #2: _____		Investigator #2: _____		State: Ohio							
Soil Unit: Bennington silt loam, 2 to 6 percent slopes		NW1/WW1 Classification: N/A		Wetland ID: Wetland 3							
Landform: --		Local Relief: Convex		Sample Point: SP06							
Slope (%): --		Latitude: 39.93154		Community ID: Upland							
		Longitude: -82.8188		Datum: --							
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				☒ Yes ☐ No							
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Section: 24							
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Township: 12N							
				Range: 21W Dir: --							
SUMMARY OF FINDINGS											
Hydrophytic Vegetation Present? ☐ Yes ☒ No		Hydic Soils Present? ☐ Yes ☒ No									
Wetland Hydrology Present? ☐ Yes ☒ No		Is This Sampling Point Within A Wetland? ☒ Yes ☐ No									
Remarks: Sample point in old field adjacent to wetland.											
HYDROLOGY											
Wetland Hydrology Indicators (Check here if indicators are not present ☐)											
Primary:			Secondary:								
☐ A1 - Surface Water	☐ B9 - Water-Stained Leaves	☐ B6 - Surface Soil Cracks									
☐ A2 - High Water Table	☐ B13 - Aquatic Fauna	☐ B10 - Drainage Patterns									
☐ A3 - Saturation	☐ B14 - True Aquatic Plants	☐ C2 - Dry-Season Water Table									
☐ B1 - Water Marks	☐ C1 - Hydrogen Sulfide Odor	☐ C8 - Crayfish Burrows									
☐ B2 - Sediment Deposits	☐ C3 - Oxidized Rhizospheres on Living Roots	☐ C9 - Saturation Visible on Aerial Imagery									
☐ B3 - Drift Deposits	☐ C4 - Presence of Reduced Iron	☐ D1 - Stunted or Stressed Plants									
☐ B4 - Algal Mat or Crust	☐ C6 - Recent Iron Reduction in Tilled Soils	☐ D2 - Geomorphic Position									
☐ B5 - Iron Deposits	☐ C7 - Thin Muck Surface	☐ D5 - FAC-Neutral Test									
☐ B7 - Inundation Visible on Aerial Imagery	☐ D9 - Gauge or Well Data										
☐ B8 - Sparsely Vegetated Concave Surface	☐ Other (Explain in Remarks)										
Field Observations:											
Surface Water Present? ☐ Yes ☒ No		Depth: (in.)		Wetland Hydrology Present? ☐ Yes ☒ No							
Water Table Present? ☐ Yes ☒ No		Depth: (in.)									
Saturation Present? ☐ Yes ☒ No		Depth: (in.)									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A											
Remarks:											
SOILS											
Map Unit Name: Bennington silt loam, 2 to 6 percent slopes											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	16	A	10YR	3/3	100	--	--	--	--	silt loam	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐)						Indicators for Problematic Soils ¹					
☐ A1 - Histosol	☐ S4 - Sandy Gleyed Matrix	☐ A16 - Coast Prairie Redox									
☐ A2 - Histic Epipedon	☐ S5 - Sandy Redox	☐ S7 - Dark Surface									
☐ A3 - Black Histic	☐ S6 - Stripped Matrix	☐ F12 - Iron-Manganese Masses									
☐ A4 - Hydrogen Sulfide	☐ F1 - Loamy Muck Mineral	☐ TF12 - Very Shallow Dark Surface									
☐ A5 - Stratified Layers	☐ F2 - Loamy Gleyed Matrix	☐ Other (Explain in Remarks)									
☐ A10 - 2 cm Muck	☐ F3 - Depleted Matrix										
☐ A11 - Depleted Below Dark Surface	☐ F6 - Redox Dark Surface										
☐ A12 - Thick Dark Surface	☐ F7 - Depleted Dark Surface										
☐ S1 - Sandy Muck Mineral	☐ F8 - Redox Depressions										
☐ S3 - 5 cm Mucky Peat or Peat											
Restrictive Layer (If Observed) Type: N/A Depth: N/A						Hydic Soil Present? ☐ Yes ☒ No					
Remarks:											

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Shannon-Astor 138 kV Line Extension Project** Wetland ID: **Wetland 3** Sample Point: **SP06**

VEGETATION (Species identified in all uppercase are non-native species.)																																				
Tree Stratum (Plot size: 30 ft radius)																																				
1.	Species Name	% Cover	Dominant	Ind. Status																																
2.	--	--	--	--																																
3.	--	--	--	--																																
4.	--	--	--	--																																
5.	--	--	--	--																																
6.	--	--	--	--																																
7.	--	--	--	--																																
8.	--	--	--	--																																
9.	--	--	--	--																																
10.	--	--	--	--																																
Total Cover =		0																																		
Sapling/Shrub Stratum (Plot size: 15 ft radius)																																				
1.	Species Name	% Cover	Dominant	Ind. Status																																
2.	--	--	--	--																																
3.	--	--	--	--																																
4.	--	--	--	--																																
5.	--	--	--	--																																
6.	--	--	--	--																																
7.	--	--	--	--																																
8.	--	--	--	--																																
9.	--	--	--	--																																
10.	--	--	--	--																																
Total Cover =		0																																		
Herb Stratum (Plot size: 5 ft radius)																																				
1.	Species Name	% Cover	Dominant	Ind. Status																																
2.	<i>Poa pratensis</i>	20	Y	FAC																																
3.	<i>Trifolium repens</i>	10	--	FACU																																
4.	<i>Cirsium arvense</i>	10	--	FACU																																
5.	<i>Apocynum cannabinum</i>	30	Y	FAC																																
6.	<i>Dipsacus fullonum</i>	10	--	FACU																																
7.	<i>Elaeagnus commutata</i>	5	--	UPL																																
8.	<i>Symphotrichum pilosum</i>	5	--	FACU																																
9.	<i>Erigeron annuus</i>	10	--	FACU																																
10.	--	--	--	--																																
11.	--	--	--	--																																
12.	--	--	--	--																																
13.	--	--	--	--																																
14.	--	--	--	--																																
15.	--	--	--	--																																
Total Cover =		100																																		
Woody Vine Stratum (Plot size: 30 ft radius)																																				
1.	Species Name	% Cover	Dominant	Ind. Status																																
2.	--	--	--	--																																
3.	--	--	--	--																																
4.	--	--	--	--																																
5.	--	--	--	--																																
Total Cover =		0																																		
Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)																																				
Prevalence Index Worksheet <table style="width:100%;"> <tr> <td colspan="2">Total % Cover of:</td> <td colspan="2">Multiply by:</td> </tr> <tr> <td>OBL spp.</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW spp.</td> <td align="center"><u>0</u></td> <td>x 2 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FAC spp.</td> <td align="center"><u>50</u></td> <td>x 3 =</td> <td align="center"><u>150</u></td> </tr> <tr> <td>FACU spp.</td> <td align="center"><u>45</u></td> <td>x 4 =</td> <td align="center"><u>180</u></td> </tr> <tr> <td>UPL spp.</td> <td align="center"><u>5</u></td> <td>x 5 =</td> <td align="center"><u>25</u></td> </tr> <tr> <td colspan="2">Total</td> <td align="center"><u>100</u> (A)</td> <td align="center"><u>355</u> (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>3.550</u></td> </tr> </table>					Total % Cover of:		Multiply by:		OBL spp.	<u>0</u>	x 1 =	<u>0</u>	FACW spp.	<u>0</u>	x 2 =	<u>0</u>	FAC spp.	<u>50</u>	x 3 =	<u>150</u>	FACU spp.	<u>45</u>	x 4 =	<u>180</u>	UPL spp.	<u>5</u>	x 5 =	<u>25</u>	Total		<u>100</u> (A)	<u>355</u> (B)	Prevalence Index = B/A = <u>3.550</u>			
Total % Cover of:		Multiply by:																																		
OBL spp.	<u>0</u>	x 1 =	<u>0</u>																																	
FACW spp.	<u>0</u>	x 2 =	<u>0</u>																																	
FAC spp.	<u>50</u>	x 3 =	<u>150</u>																																	
FACU spp.	<u>45</u>	x 4 =	<u>180</u>																																	
UPL spp.	<u>5</u>	x 5 =	<u>25</u>																																	
Total		<u>100</u> (A)	<u>355</u> (B)																																	
Prevalence Index = B/A = <u>3.550</u>																																				
Hydrophytic Vegetation Indicators: <table style="width:100%;"> <tr> <td>☐ Yes</td> <td>☐ No</td> <td>Rapid Test for Hydrophytic Vegetation</td> </tr> <tr> <td>☒ Yes</td> <td>☐ No</td> <td>Dominance Test is > 50%</td> </tr> <tr> <td>☐ Yes</td> <td>☒ No</td> <td>Prevalence Index is ≤ 3.0 *</td> </tr> <tr> <td>☐ Yes</td> <td>☐ No</td> <td>Morphological Adaptations (Explain) *</td> </tr> <tr> <td>☐ Yes</td> <td>☐ No</td> <td>Problem Hydrophytic Vegetation (Explain) *</td> </tr> </table> * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					☐ Yes	☐ No	Rapid Test for Hydrophytic Vegetation	☒ Yes	☐ No	Dominance Test is > 50%	☐ Yes	☒ No	Prevalence Index is ≤ 3.0 *	☐ Yes	☐ No	Morphological Adaptations (Explain) *	☐ Yes	☐ No	Problem Hydrophytic Vegetation (Explain) *																	
☐ Yes	☐ No	Rapid Test for Hydrophytic Vegetation																																		
☒ Yes	☐ No	Dominance Test is > 50%																																		
☐ Yes	☒ No	Prevalence Index is ≤ 3.0 *																																		
☐ Yes	☐ No	Morphological Adaptations (Explain) *																																		
☐ Yes	☐ No	Problem Hydrophytic Vegetation (Explain) *																																		
Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall. Woody Vines - All woody vines greater than 3.28 ft. in height.																																				
Hydrophytic Vegetation Present ☐ Yes ☒ No																																				
Remarks:																																				

Additional Remarks:

ORAM Data Forms

Wetland 1

Betsy Ewoldt

6/14/18

Background Information

Name:	Betsy Ewoldt
Date:	6/14/18
Affiliation:	Stantec
Address:	11687 Lebanon Road, Cincinnati, OH
Phone Number:	513-842-8200
e-mail address:	betsy.ewoldt@stantec.com
Name of Wetland:	Wetland 1
Vegetation Community(ies):	PEM
HGM Class(es):	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
See attached Figure 2.	
Lat/Long or UTM Coordinate	39.9318, -82.824
USGS Quad Name	Reynoldsburg
County	Franklin
Township	12N, 21W
Section and Subsection	Sec. 24
Hydrologic Unit Code	050600011504
Site Visit	Shannon-Astor 138 kV Line Extension Project
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	Crosby silt loam, 2 to 6 percent slopes
Delineation report/map	

6/14/18

Name of Wetland: Wetland 1	
Wetland Size (acres, hectares): 0.01	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 34.5	Category: 2

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.

Wetland 1

Betsy Ewoldt

6/14/18

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

Wetland 1

Betsy Ewoldt

6/14/18

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

Wetland 1

Betsy Ewoldt

6/14/18

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

Table 1. Characteristic plant species.

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

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

Site: Wetland 1	Rater(s): Betsy Ewoldt	Date: 6/14/18
------------------------	-------------------------------	----------------------

0	0	Metric 1. Wetland Area (size).
max 6 pts.	subtotal	

Select one size class and assign score.

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

7	7	Metric 2. Upland buffers and surrounding land use.
max 14 pts.	subtotal	

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

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

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

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

15	22	Metric 3. Hydrology.
max 30 pts.	subtotal	

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed	
☐ ditch ☐ tile ☐ dike ☐ weir ☐ stormwater input	☐ point source (nonstormwater) ☐ filling/grading ☐ road bed/RR track ☐ dredging ☐ other _____

11.5	33.5	Metric 4. Habitat Alteration and Development.
max 20 pts.	subtotal	

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

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

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

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

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

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

Check all disturbances observed	
☐ mowing ☐ grazing ☐ clearcutting ☒ selective cutting ☐ woody debris removal ☐ toxic pollutants	☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☒ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment

33.5
subtotal this page

Site: Wetland 1	Rater(s): Betsy Ewoldt	Date: 6/14/18
------------------------	-------------------------------	----------------------

33.5

subtotal first page

0	33.5	
max 10 pts	subtotal	

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1	34.5	
max 20 pts	subtotal	

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

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

34.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 1

Betsy Ewoldt

6/14/18

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	7	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	11.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	1	
	TOTAL SCORE	34.5	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland 1

Betsy Ewoldt

6/14/18

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

Final Category			
Choose one	Category 1	Category 2	Category 3
Category 2	☐	☒	☐

End of Ohio Rapid Assessment Method for Wetlands.

Wetland 2

Betsy Ewoldt

6/14/18

Background Information

Name:	Betsy Ewoldt
Date:	6/14/18
Affiliation:	Stantec
Address:	11687 Lebanon Road, Cincinnati, OH
Phone Number:	513-842-8200
e-mail address:	betsy.ewoldt@stantec.com
Name of Wetland:	Wetland 2
Vegetation Community(ies):	PEM
HGM Class(es):	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	See attached map.
Lat/Long or UTM Coordinate	39.9315, -82.820
USGS Quad Name	Reynoldsburg
County	Franklin
Township	12N, 21W
Section and Subsection	Sec. 24
Hydrologic Unit Code	050600011504
Site Visit	Shannon-Astor 138 kV Line Extension Project
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	Kokomo silty clay loam, 0 to 2 percent slopes
Delineation report/map	

Wetland 2

Betsy Ewoldt

6/14/18

Name of Wetland: Wetland 2	
Wetland Size (acres, hectares): 0.02	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 18	Category: 1

Scoring Boundary Worksheet

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

Wetland 2

Betsy Ewoldt

6/14/18

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

Wetland 2

Betsy Ewoldt

6/14/18

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

Wetland 2

Betsy Ewoldt

6/14/18

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

Table 1. Characteristic plant species.

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

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

Site: Wetland 2**Rater(s):** Betsy Ewoldt**Date:** 6/14/18

0	0
max 5 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

4	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

9	13
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input

- ☐ point source (nonstormwater)
☒ filling/grading
☐ road bed/RR track
☐ dredging
☐ other parking lot

9	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- ☐ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants

- ☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

22

subtotal this page

Site: Wetland 2	Rater(s): Betsy Ewoldt	Date: 6/14/18
------------------------	-------------------------------	----------------------

22

subtotal first page

0	22
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-4	18
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

18

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 2

Betsy Ewoldt

6/14/18

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

Complete Wetland Categorization Worksheet.

Wetland 2

Betsy Ewoldt

6/14/18

Wetland Categorization Worksheet

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

	Final Category		
Choose one	Category 1	Category 2	Category 3
Category 1	☒	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

Wetland 3

Betsy Ewoldt

6/14/18

Background Information

Name:	Betsy Ewoldt
Date:	6/14/18
Affiliation:	Stantec
Address:	11687 Lebanon Road, Cincinnati, OH
Phone Number:	513-842-8200
e-mail address:	betsy.ewoldt@stantec.com
Name of Wetland:	Wetland 3
Vegetation Community(ies):	PEM
HGM Class(es):	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	See attached map.
Lat/Long or UTM Coordinate	39.9315, -82.8188
USGS Quad Name	Reynoldsburg
County	Franklin
Township	12N, 21W
Section and Subsection	Sec. 24
Hydrologic Unit Code	050600011504
Site Visit	Shannon-Astor 138 kV Line Extension Project
National Wetland Inventory Map	N/A
Ohio Wetland Inventory Map	N/A
Soil Survey	Bennington silt loam, 2 to 6 percent slopes
Delineation report/map	

Wetland 3

Betsy Ewoldt

6/14/18

Name of Wetland: Wetland 3	
Wetland Size (acres, hectares): 0.02	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 24.5	Category: 1

Scoring Boundary Worksheet

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

Wetland 3

Betsy Ewoldt

6/14/18

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

Wetland 3

Betsy Ewoldt

6/14/18

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

Wetland 3

Betsy Ewoldt

6/14/18

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

Table 1. Characteristic plant species.

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

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

Site: Wetland 3

Rater(s): Betsy Ewoldt

Date: 6/14/18

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

8	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

8	16
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input

- ☐ point source (nonstormwater)
☒ filling/grading
☐ road bed/RR track
☐ dredging
☐ other

8.5	24.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- ☒ mowing
☐ grazing
☒ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants

- ☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

24.5

subtotal this page

Site: Wetland 3	Rater(s): Betsy Ewoldt	Date: 6/14/18
------------------------	-------------------------------	----------------------

24.5	
subtotal first page	
0	24.5
max 10 pts	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0	24.5
max 20 pts	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

24.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 3

Betsy Ewoldt

6/14/18

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	NO	If yes, Category 3	
Question 11. Relict Wet Prairies	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	8	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	8.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersed, microtopography	0	
	TOTAL SCORE	24.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet

Wetland 3

Betsy Ewoldt

6/14/18

Wetland Categorization Worksheet

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

Final Category

Choose one	Category 1	Category 2	Category 3
Category 1	☒	☐	☐

End of Ohio Rapid Assessment Method for Wetlands.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/31/2018 2:30:21 PM

in

Case No(s). 18-1170-EL-BLN

Summary: Letter of Notification electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.