

# Letter of Notification for Amlin-Dublin 138 kV Transmission Line Adjustment Project



PUCO Case No. 21-1114-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.

November 18, 2021

Letter of Notification  
Amlin-Dublin 138-kV Transmission Line Adjustment Project

**4906-6-05**

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco" or the "Company") is providing the following information to the Ohio Power Siting Board (OPSB) in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

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

**B(1) Project Description**

**The applicant shall provide the name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a letter of notification or construction notice application.**

The Company is proposing the Amlin-Dublin 138-kV Transmission Line Adjustment Project (the "Project"), located in the City of Dublin, in Franklin County, Ohio. The Project involves adjusting approximately 0.3-mile of the approved Amlin-Dublin 138 kV Transmission Line Project (Case No. 20-0946-EL-BLN), just west of Eiterman Road. The adjustment is required due to underground utilities along Eiterman Road and property owner easement negotiations. Exhibits 1 and 2 in Appendix A show the location of the Project in relations to the surrounding vicinity.

The Project meets the requirements for a Letter of Notification (LON) because it is within the types of projects defined by Item (1)(d)(ii) of 4906-1-01 *Appendix A Application Requirement Matrix For Electric Power Transmission Lines* as it is intended to serve a private customer and will be located on property owned by someone other than the customer. Item (1)(a) of 4906-1-01 *Appendix A* 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:*

*(d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:*

*(ii) Any portion of the line is on property owned by someone other than the specific customer or applicant.*

The Project has been assigned PUCO Case No. 21-1114-EL-BLN.

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

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

The Project involves an adjustment in the alignment of an approximately 0.3-mile section of the Amlin-Dublin 138-kV Transmission Line. The need of the project remains the same as what was reported in OPSB Case Number 20-0946-EL-BLN.

The Amlin-Dublin 138-kV Transmission Line Project (b3112) is required to address baseline thermal criteria violations identified on the existing Dublin – Sawmill 138 kV circuit due to bulk load additions for existing customers in the surrounding area. The PJM need and solution were presented and reviewed with stakeholders at the February 20th and March 25th, 2019 PJM SRTEP Western meetings. The Amlin-Dublin 138-kV Transmission Line Project is also included in the Company's 2021 Long Term Forecast Table FE-T9 page 28 (see Appendix B).

The Dublin – Sawmill 138 kV circuit will load to 107% of its emergency rating in PJM's 2024 Summer RTEP case for loss of the Bethel – Davidson & Roberts – Davidson 138 kV circuits. However, based upon the load ramp schedules provided by a large customer in the area, it is anticipated that the scenario will become an issue in real time beginning in 2022.

In addition to alleviating the thermal issues on the Dublin – Sawmill 138 kV circuit, the new Amlin – Dublin 138 kV circuit will provide a third 138 kV source into both the Amlin and Dublin stations. Dublin Station has historically seen a peak load of approximately 75 MVA with limited ability to transfer the approximately 7,300 customers served from the station elsewhere. The distribution load at Amlin Station has historically peaked at 20 MVA, but the station is also the sole transmission source into the adjacent Sumac Station, which provides service to a large data center customer who has communicated their intent to increase demand to upwards of 185MW.

Failure to implement the proposed project in the specified period of time will likely result in PJM implementing operational controls which may include preemptive shedding of a significant amount of load served from the area transmission and distribution network in order to alleviate the thermal issues associated with the scenario identified above. Although load shedding is an approved PJM operational procedure to control thermal overloads, load shedding is not acceptable from AEP Ohio's perspective and directly impacts both large commercial and residential customers in the area. The proposed solution for this baseline identified need is necessary for AEP Ohio to continue to provide safe, reliable service to their customers.

## **B(3) Project Location**

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

The location of the Project in relation to existing transmission lines and stations is shown on **Exhibit 1**. The Project directly impacts the following existing facilities:

- Amlin-Dublin 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.**

Due to underground utilities and landowner coordination efforts located along the western side of Eiterman Road, an adjustment was required to the previously approved Amlin-Dublin 138 kV transmission line. Based on further discussion with property owners a route alternative heading west from Eiterman Road and then turning north to connect back to the previously approved Amlin-Dublin 138 kV transmission line was identified as the most feasible line route. The Company's ROW agents have been in contact with the property owners along the proposed adjustment and have secured options for easement along the adjusted route.

An additional alternative on the east side of Eiterman Road was also considered, but would have required the line to be within road ROW between Eiterman Road and State Route 161 (SR-161); custom, additional structures; and crossing Eiterman Road three times within 1,500 feet.

The proposed route adjustment will require one additional structure, but does not add additional length to the overall project, would not require any additional stream or wetland impacts, and would not increase tree clearing impacts for the Project. Therefore, the Company concluded that construction of the Project along the proposed adjusted alignment represents the most suitable location and appropriate solution for meeting the Company's needs.

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

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

The Company hosted two public open houses for the Amlin-Dublin 138-kV Transmission Line Project as part of OPSB Case Number 20-0946-EL-BLN. The first public open house was hosted on July 17, 2017, where forty-three people attended, and twenty-five comments were received. A second public open house was held on September 23, 2019, where forty-six people attended, and an additional twenty-five comment cards were received. No additional open houses have been completed for this Project, as impacted property owners were communicated with directly following the final open house and during development of the route adjustment.

The Company will inform affected property owners and tenants within seven days of filing this LON, by issuing a public notice in a newspaper of general circulation in the project area. The notice will comply with all requirements under O.A.C. Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants, contiguous owners, and any other landowner the Company approached for an easement necessary for the construction, operation, or maintenance of the Project.



The Company also maintains a website (<http://aeptransmission.com/ohio/>) on which an electronic copy of this LON is available. A paper copy of the LON will be served to the public library in each political subdivision affected by this Project. Lastly, AEP Ohio Transco retains right-of-way 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.**

The overall Amlin-Dublin 138 kV transmission line construction is anticipated to begin in December 2021, however the adjusted portion of the project is not anticipated to start construction until February 2022, with a proposed in-service date of July 2022.

#### **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.**

Exhibit 2 in Appendix A shows the proposed alignment of the transmission line on an aerial image with clearly marked streets, roads, and highways.

To visit the Project from Columbus, take I-70 W/I-71 S to the I-270 N exit. Take I-270 N for 9 miles, then take exit 17B to merge onto OH-161 W/US-33 W towards Marysville, follow for 3 miles. Take exit 106 towards OH-161 W, then turn left onto OH-161 W. At the traffic circle, take the 2<sup>nd</sup> exit onto Eiterman Road, follow for 0.7 mile, and the Project Area will be on the right.

#### **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 for which AEP Ohio Transco will need to obtain easements/options is provided in the table below.

<b>Property Parcel ID</b>	<b>Agreement Type</b>	<b>Easement/Options Obtained</b>
273-005939-00	New Easement	Yes – Option Acquired
273-004516-00	New Easement	Yes
270-000759-00	New Easement	Yes – Option Acquired

## **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 transmission line construction is estimated to include the following:

Voltage: 138kV  
Conductors: 1033.5 ACSR Curlew 54/7  
Static Wire: 48 Fiber OPGW  
Insulators: Polymer  
ROW Width: 80 Feet  
Structure Type: Three (3) single circuit, custom dead-end steel monopole  
Two (2) single circuit, direct embed tangent steel monopole

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

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

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

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

The entirety of the Amlin-Dublin 138-kV Transmission Line, which is comprised of applicable tangible and capital costs, is approximately \$27,000,000 (Class 4 estimate). The Project will not require any additional costs to the overall Amlin-Dublin project cost. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company Inc.'s FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

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

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

**B(10)(a) 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 Dublin, Franklin County, Ohio. The land use within the Project corridor consists of agricultural and maintained lawn habitat (soccer field complex). The area is routinely disturbed by maintenance and farming activities. The Project is not anticipated to increase the amount of tree clearing required for the overall Amlin-Dublin 138 kV transmission line.

## **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 Franklin County Auditor was contacted in September 2021 to obtain information about Agricultural District Lands and received the requested data via email on September 29, 2021. No Agricultural District Lands are within the potential disturbance area of the Project.

## **B(10)(c) Archaeological and Cultural Resources**

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

A cultural resource survey was completed in 2017 for the Amlin-Dublin 138-kV Transmission Line as part of OPSB Case Number 20-0946-EL-BLN. Additional surveys were completed and coordinated with the Ohio Historic Preservation Office ("SHPO") to account for the adjustment area in December 2020. A correspondence letter with the SHPO is provided as Appendix C.

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

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

Local, state, and federal agency coordination has been completed for this Project as part of OPSB Case Number 20-0946-EL-BLN. No new impacts are proposed as part of this Project. The information below provides the coordination to be completed for the entire Amlin-Dublin 138-kV Transmission Line.

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000004, and AEP Ohio Transco will implement and maintain best management practices (BMPs), as outlined in the project-specific Storm Water Pollution Prevention Plan (SWPPP), to minimize erosion and control sediment to protect surface water quality during storm events.

Three palustrine emergent wetlands, 2 perennial streams, and 3 ephemeral streams were identified within the Amlin-Dublin 138-kV Transmission Line corridor. However, none of these resources were identified within the Project area. Construction activities are anticipated to require a Nationwide Permit from the Army Corps of Engineers. However, a Section 401 Water Quality Certification from the Ohio Environmental Protection Agency is not anticipated.

The Amlin-Dublin 138-kV Transmission Line crosses a Federal Emergency Management Agency (FEMA) 100-year floodplain area. A floodplain permit will be required from the City of Dublin and the Company is currently coordinating with the City of Dublin to obtain a floodplain permit for the Project.

There are no other known local, state, or federal 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.**

Coordination for information regarding threatened, endangered, and rare species was completed for this Project as part of the OPSB Case Number 20-0946-EL-BLN. No new impacts are proposed as part of this Project. The information below provides the coordination completed for the entire Amlin-Dublin 138-kV Transmission Line.

A coordination letter was submitted to the Ohio Department of Natural Resources (ODNR) Division of Wildlife (DOW) to obtain Ohio Natural Heritage Database (NHD) records within a 1-mile buffer area around the Amlin-Dublin 138-kV Transmission Line. The June 26, 2020 response (Appendix C) indicated that the NHD had no records at or within a one-mile radius of the project area. According to the ODNR-DOW, the project area is within range of the Indiana bat (*Myotis sodalis*). The ODNR-DOW recommends trees be conserved where possible. If tree clearing is not avoidable, the ODNR-DOW recommends tree clearing between October 1 and March 31 to avoid adverse effects to Indiana bats. The project area is within the range of five federally and state-endangered, six state-endangered, and four state-threatened mussels, as well as one federally and state-endangered, four state-endangered and three state-threatened fish. No in-water work is proposed; therefore, the Amlin-Dublin 138-kV Transmission Line is not likely to impact these or other aquatic species. Finally, the ODNR-DOW indicated that the Amlin-Dublin 138-kV Transmission Line is in the range of the state-endangered upland sandpiper (*Bartramia longicauda*), which utilizes dry grasslands. Most of the open areas within the study area appear to be used for agricultural purposes or mowed for recreational use; therefore, no impact on this species is anticipated.

As part of the ecological study completed for the Amlin-Dublin 138-kV Transmission Line, a coordination letter was submitted to the U.S. Fish and Wildlife Service (USFWS) Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. The June 26, 2020 email response letter from USFWS (Appendix C) indicated that the proposed transmission line is within the range of the Indiana bat and northern long-eared bat in Ohio, but not within known Indiana bat buffers. If tree clearing occurs between October 1 and March 31, USFWS does not anticipate the transmission line having any adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species. The USFWS letter did not include comments specific to the other federally listed species.

Based on the nature of the proposed project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated. Tree clearing is anticipated between October 1 and March 31, in order to avoid impacts to the Indiana bat or northern long-eared bat.

## **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.**

Areas of ecological concerns were assessed for the Amlin-Dublin 138-kV Transmission Line as part of OPSB Case Number 20-0946-EL-BLN. The ecological resources were resurveyed in July 2021 to include the adjustment proposed by this Project. No new impacts are proposed as part of this Project, and the revised Wetland and Waterbody Delineation Map is provided as Appendix D. The information below provides the coordination completed for the entire Amlin-Dublin 138-kV Transmission Line.

Wetland and stream delineation field surveys were completed for the Amlin-Dublin 138-kV Transmission Line corridor by the Company's consultant in 2017 and May 2020. Three palustrine emergent wetlands, 2 perennial streams, and 3 ephemeral streams were identified within the transmission line area.

No wildlife management areas or nature preserve lands are located within 1,000 feet of the Amlin-Dublin 138-kV Transmission Line. Correspondence received from the USFWS (Appendix C) indicates that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the transmission line area.

No properties identified in the National Conservation Easement Database (<http://www.conservationeasement.us>) were identified in the project vicinity.

The FEMA Flood Insurance Rate Map (FIRM) was consulted to identify any floodplains/flood hazard areas that have been mapped in the transmission line area. Based on this map, the Amlin-Dublin 138-kV Transmission Line alignment crosses a FEMA-designated floodplain and floodway. The Company is currently coordinating with the City of Dublin to obtain a floodplain permits for the Project.

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

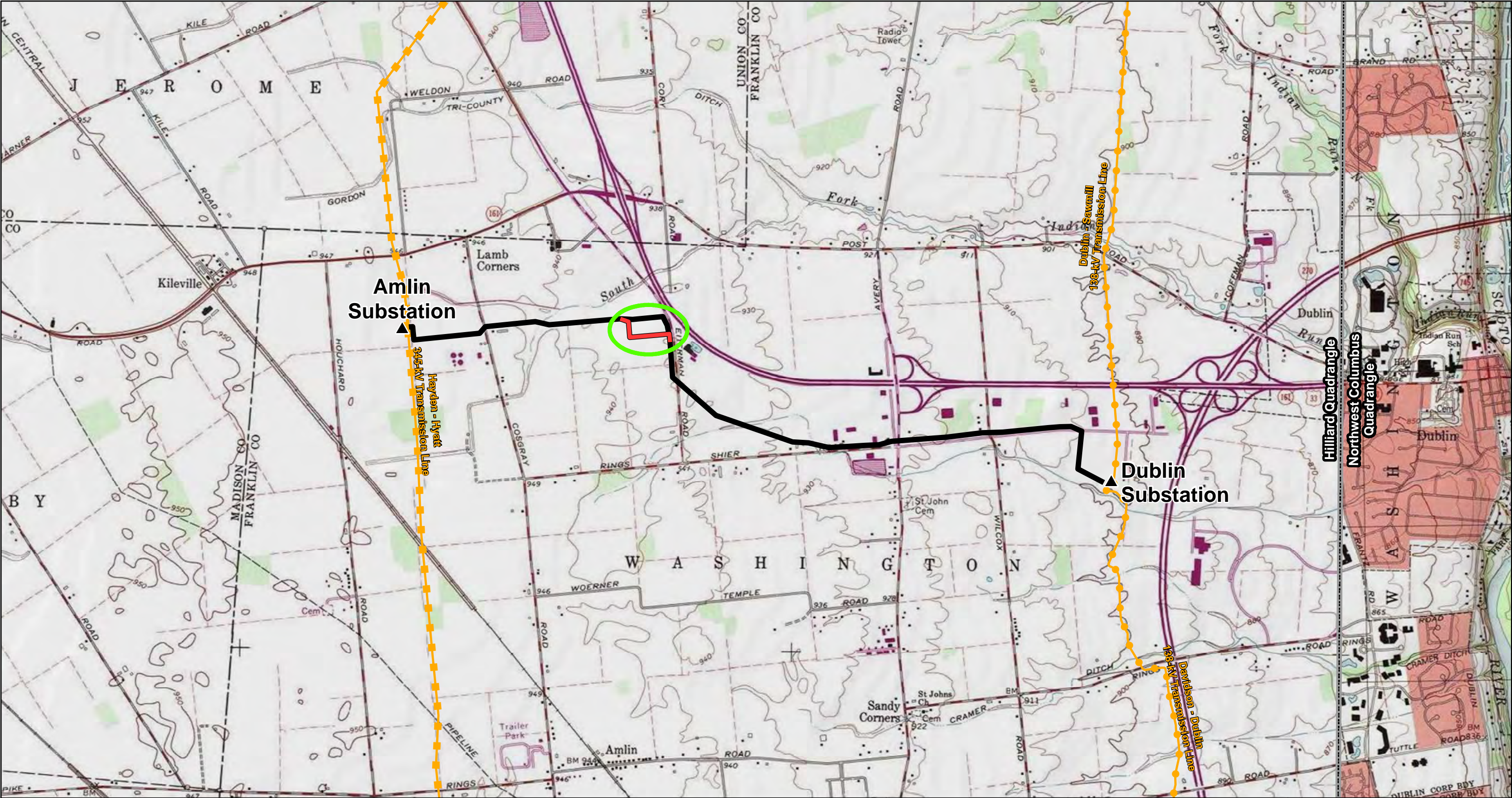
**Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.**

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

LETTER OF NOTIFICATION FOR AMLIN-DUBLIN 138 KV TRANSMISSION LINE ADJUSTMENT  
PROJECT

**Appendix A Project Maps**





**Legend**

- ▲ Substation
- Proposed Route Adjustment
- OPSB Approved Route (Case No. 20-0946-EL-BLN)
- Existing 138-kV Transmission Line
- Existing 345-kV Transmission Line
- Project Area
- USGS 7.5-Minute Quadrangle Boundary

Base Map Source:  
ESRI USGS Topographic  
(May 2020)

Coordinate System:  
State Plane Ohio South  
FIPS 3402 (US Feet)  
Datum: NAD 1983  
Scale: 1:7,500

November 17, 2021

OHIO

Project Location

**Amlin-Dublin 138kV Transmission  
Line Adjustment Project**

**Exhibit 1**

0 0.25 0.5  
Miles





**Legend**

- Proposed Route Adjustment
- OPSB Approved Route (Case No. 20-0946-EL-BLN)
- Parcel Boundary

Base Map Source:  
ESRI World Imagery  
(August 2019)

Coordinate System:  
State Plane Ohio South  
FIPS 3402 (US Feet)  
Datum: NAD 1983  
Scale: 1:3,000

November 17, 2021

**Amlin-Dublin 138kV Transmission  
Line Adjustment Project**

**Exhibit 2**

0 250 500  
Feet



LETTER OF NOTIFICATION FOR AMLIN-DUBLIN 138 KV TRANSMISSION LINE ADJUSTMENT  
PROJECT

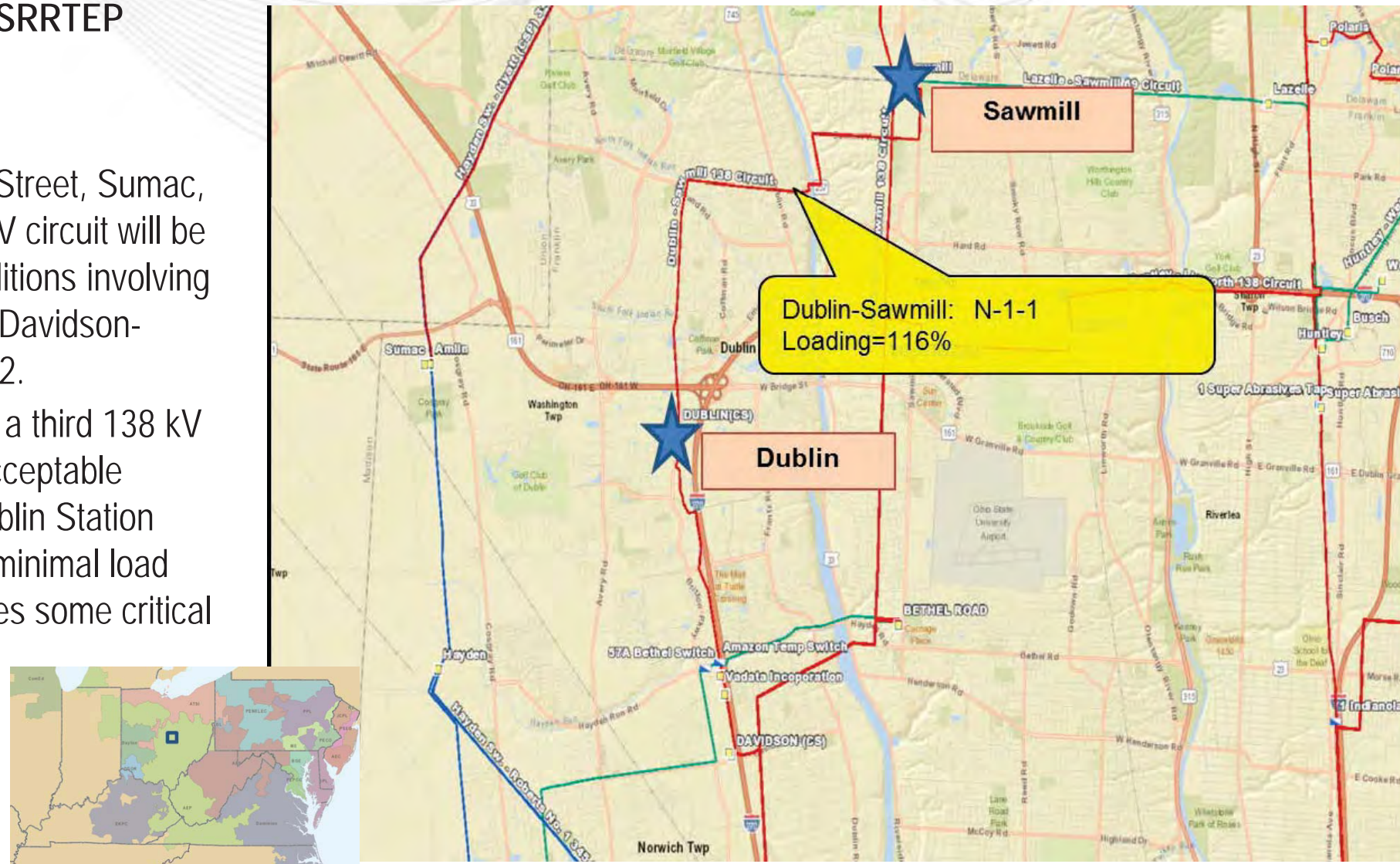
**Appendix B** Long Term Forecast Report and PJM Submittal

Previously Presented on 2/20/2019 SRRTEP  
TO Criteria Violation

## Problem Statement:

Due to load increase in the area (Jug Street, Sumac, and Britton), the Dublin-Sawmill 138 kV circuit will be overloaded to 116% under N-1-1 conditions involving the loss of Bethel-Davidson 138 kV & Davidson-Roberts 138 kV circuits starting in 2022.

Additionally, AEP-Ohio has requested a third 138 kV source to Dublin station to maintain acceptable reliability levels for the load at risk. Dublin Station serves 75 MVA of peak demand with minimal load transfer capability. Dublin station serves some critical loads.



## Selected Solution:

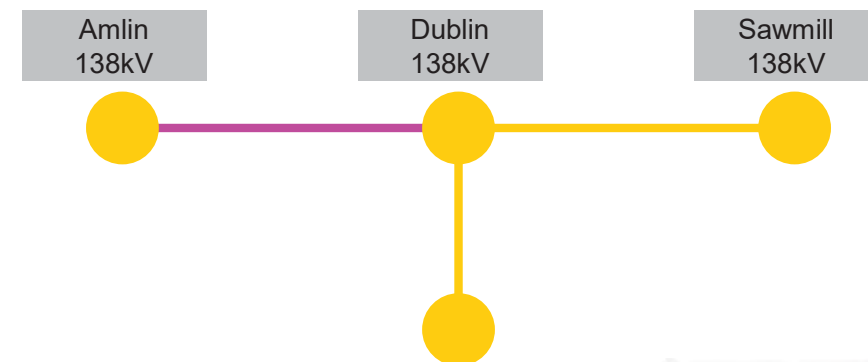
Construct a single circuit 138 kV line (~3.5 miles) from Amlin to Dublin using 1033 ACSR Curlew (296 MVA SN), convert Dublin Station into a ring configuration, and re-terminating the Britton UG cable to Dublin Station. (B3112)








Total Estimated Transmission Cost: \$39.29M

Required IS Date: 6/1/2022

Projected IS Date: 6/1/2020

Project Status: Scoping/Engineering



Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

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

<b>LINE NAME AND NUMBER:</b>	Amlin - Dublin 138kV (b3112), TP2016137
<b>POINTS OF ORIGIN AND TERMINATION</b>	Amlin, Dublin; INTERMEDIATE STATION - N/A
<b>RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS</b>	3.7 miles / 100 ft / 1 circuit
<b>VOLTAGE: DESIGN / OPERATE</b>	138kV / 138kV
<b>APPLICATION FOR CERTIFICATE:</b>	Certificate 2019-2020
<b>CONSTRUCTION:</b>	2019-2022
<b>CAPITAL INVESTMENT:</b>	\$37M
<b>PLANNED SUBSTATION:</b>	NAME - N/A; TRANSMISSION VOLTAGE - N/A; ACREAGE - N/A; LOCATION - N/A
<b>SUPPORTING STRUCTURES:</b>	Steel
<b>PARTICIPATION WITH OTHER UTILITIES</b>	N/A
<b>PURPOSE OF THE PLANNED TRANSMISSION LINE</b>	Mitigate anticipated thermal violations due to increase customer load.
<b>CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION</b>	Thermal violations would arise and go unmitigated.
<b>MISCELLANEOUS:</b>	N/A

LETTER OF NOTIFICATION FOR AMLIN-DUBLIN 138 KV TRANSMISSION LINE ADJUSTMENT  
PROJECT

## **Appendix C Agency Coordination**





# Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

## Office of Real Estate

*John Kessler, Chief*

2045 Morse Road – Bldg. E-2

Columbus, OH 43229

Phone: (614) 265-6621

Fax: (614) 267-4764

June 26, 2020

Matt Teitt  
Stantec  
1500 Lake Shore Drive Suite 100  
Columbus OH 43204-3800

**Re:** 20-461; AEP Amlin-Dublin 138 kV Line Rebuild Project

**Project:** The proposed project involves rebuilding approximately 5.2 miles of the Amlin-Dublin 138 kV Transmission Line between Amlin Station and Dublin Station.

**Location:** The proposed project is located in Washington Township and the City of Dublin, 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 no records at or within a one-mile radius of the project area.

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

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

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees 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 of sufficient size, 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. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their

habitat. If no in-water work is proposed, this project is not likely to impact these or other aquatic 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](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

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

Mike Pettegrew  
Environmental Services Administrator (Acting)





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



TAILS# 03E15000-2020-TA-1341

Dear Mr. Teitt,

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$  inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <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, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

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

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

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

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

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

Sincerely,



Patrice Ashfield  
Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW





In reply, refer to  
2017-FRA-39747

June 18, 2020

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

**RE: Amlin-Dublin 138kV Rebuild Project in Washington Township, Franklin County, Ohio - Addendum**

Dear Mr. Weller:

This letter is in response to the correspondence received on May 22, 2020 regarding the proposed Amlin-Dublin 138kV Rebuild Project in Washington Township, Franklin County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Addendum Phase I Cultural Resource Investigations for the Amlin-Dublin 138kV Rebuild Project in Washington Township, Franklin County, Ohio* by Weller & Associates, Inc. (2020).

This addendum report addresses the partial realignment of the Amlin-Dublin 138kV Rebuild Project, originally coordinated with our office in 2017. In our coordination letter dated 11/03/2017, our office recommended additional investigations at Ohio Archaeological Inventory (OAI) #33FR2385, known as the Likens Site II, a headstone associated with a possible African American cemetery. Since our 2017 letter, an archaeological investigation took place for an unrelated project that confirmed the location of OAI#33FR2385, now known as the Brown-Harris Cemetery, in a different location than was previously identified and determined to be eligible for listing on the National Register of Historic Places (NRHP). Regardless, the Amlin-Dublin 138kV Rebuild Project has been rerouted and will not affect OAI#33FR2385, the Brown-Harris Cemetery.

One (1) previously identified archaeological site is located within the project area. Ohio Archaeological Inventory (OAI)# 33FR2762, a historic now-raised farmstead, still contains foundation remnants. No additional artifacts were collected during the reidentification of the site. OAI#33FR2762 was previously recommended not eligible for listing in the NRHP. Two (2) new prehistoric isolated finds were identified during survey, OAI#33FR3189 and 33FR3190. Neither sites was recommended eligible for listing in the NRHP. Our office agrees with this recommendation and no further archaeological survey is necessary.

While the newly proposed transmission line route alignment is closer to three NRHP-listed properties associated with the Rings Property/Farmstead (#79002769, #79002767 and #79002767), it is Weller's opinion that the newly proposed route alignment will not diminish the historic characteristics that contribute to the NRHP status of the Rings Property/Farmstead. We agree that the project as proposed should have no indirect adverse effect on historic properties.

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

Sincerely,

Krista Horrocks, Project Reviews Manager  
Resource Protection and Review

RPR Serial No: 1084247



In reply, refer to  
2017-FRA-39747

December 14, 2020

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

**RE: Amlin-Dublin 138kV Rebuild Project in Washington Township, Franklin County, Ohio - Addendum**

Dear Mr. Weller:

This letter is in response to the correspondence received on December 7, 2020 regarding the proposed Amlin-Dublin 138kV Rebuild Project in Washington Township, Franklin County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Addendum Archaeological Investigations for an Approximately 200 m (658 ft) Reroute associated with the Dublin-Amlin 138kV Rebuild Project in Washington Township, Franklin County, Ohio* by Weller & Associates, Inc. (2020).

This addendum report addresses the partial realignment of the Amlin-Dublin 138kV Rebuild Project, originally coordinated with our office in 2017. The new realignment is located to the west of the US 33 right-of-way and Eiterman Road. Fieldwork consisted of visual inspection and shovel test unit excavations. No previously identified archaeological resources are located within in the project area and no new archaeological sites were identified during survey. Our office agrees no further archaeological survey is necessary.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Krista Horrocks".

Krista Horrocks, Project Reviews Manager  
Resource Protection and Review

RPR Serial No: 1086487

LETTER OF NOTIFICATION FOR AMLIN-DUBLIN 138 KV TRANSMISSION LINE ADJUSTMENT  
PROJECT

**Appendix D Wetland Delineation Report**



V:\1937\active\19370557303\_data\gis\_cad\gismxd\eco\_figures\addendum\_eco\fig2\_envfeats\_eco\_193705573.mxd Revised: 2021-07-20 By: J.Hedeman



Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

---

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
193705573

---

Project Location  
Franklin County, Ohio

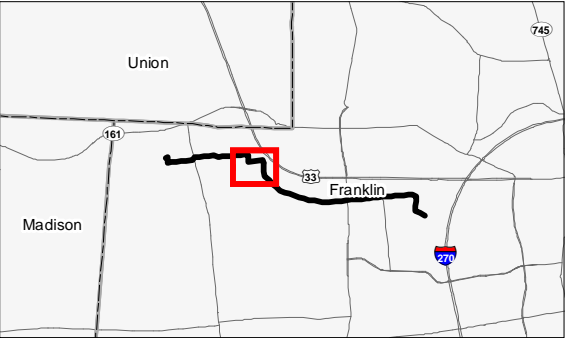
Prepared by JLH on 2021-07-12  
TR by AS on 2021-07-15  
IR by MDV on 2021-07-19

N

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

Legend

- Project Area
- Project Area (Previously Surveyed)
- Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Pulling/Tensioning Pad
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Open Water
- Approximate Open Water
- FEMA Flood Hazard Area
- 100-year Floodplain
- Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Stantec, AEP, USGS, USFWS, FEMA, NADS, OGRIP
- Orthophotography: 2019 NAIP







**Amlin – Dublin 138 kV  
Transmission Line Rebuild Project  
Franklin County, Ohio**

**Ecological Resources Inventory  
Report**

Prepared for:

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

Prepared by:


Stantec Consulting Services Inc.  
1500 Lake Shore Drive, Suite 100  
Columbus, OH 43204

May 15, 2020



## Sign-off Sheet

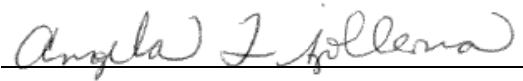
This document entitled Amlin – Dublin 138 kV Transmission Line Rebuild Project, Franklin County, Ohio, Ecological Resources Inventory Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of AEP Ohio Transmission Company, Inc. (the "Client"). Any reliance on this document 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)

**Charlie Allen**

  
Reviewed by \_\_\_\_\_  
(signature)

**Matt Teitt**

Reviewed by   
(signature)

**Angela Sjollesma**

## Table of Contents

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2.0</b>	<b>METHODS .....</b>	<b>2</b>
2.1	WETLAND DELINEATION.....	2
2.2	STREAM DELINEATION .....	2
2.3	RARE SPECIES.....	2
<b>3.0</b>	<b>RESULTS .....</b>	<b>3</b>
3.1	TERRESTRIAL HABITAT .....	3
3.2	WETLANDS .....	5
3.3	STREAMS.....	5
3.4	OPEN WATERS.....	6
3.5	RARE, THREATENED, OR ENDANGERED SPECIES HABITAT .....	7
<b>4.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>17</b>
<b>5.0</b>	<b>REFERENCES.....</b>	<b>19</b>

## LIST OF TABLES

Table 1.	Vegetation Communities and Land Cover Found within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio .....	3
Table 2.	Summary of Wetland Resources Found within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio .....	5
Table 3.	Summary of Stream Resources Found within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio .....	6
Table 4.	Summary of Potential Ohio State-Listed Species within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio.....	7
Table 5.	Summary of Potential Federally-Listed Species within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio.....	15

## LIST OF APPENDICES

<b>APPENDIX A</b>	<b>FIGURES.....</b>	<b>A.1</b>
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
<b>APPENDIX B</b>	<b>AGENCY CORRESPONDENCE .....</b>	<b>B.1</b>
<b>APPENDIX C</b>	<b>REPRESENTATIVE PHOTOGRAPHS.....</b>	<b>C.1</b>
C.1	Figure 2 – Wetland and Waterbody Photographs .....	C.1
C.2	Figure 3 – Habitat Photographs .....	C.2

AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT

<b>APPENDIX D</b>	<b>DATA FORMS.....</b>	<b>D.1</b>
D.1	QHEI Data Forms.....	D.1
D.2	HHEI Data Forms.....	D.2
D.3	Wetland Determination Data Forms.....	D.3
D.4	ORAM Data Forms.....	D.4

# AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL RESOURCES INVENTORY REPORT

Introduction  
May 15, 2020

## 1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing to build approximately 3.4 miles of 138 kV transmission line between AEP's Dublin and Amlin stations in Franklin County, Ohio, the Project (Figure 1, Appendix A). The Project starts at Crosby Court and runs east to the intersection of Shier Rings Road and Emerald Parkway in the City of Dublin, Franklin County, Ohio (Project area). An 80-foot study corridor and associated access roads were surveyed for wetlands, waterbodies, open water features, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on April 28 and 29, and May 1 and 14, 2020. The approximate location of features located up to 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project area. The approximate locations of these features are shown on the Figure 2 maps in Appendix A as "approximate" wetlands and stream (waterways) features adjacent to the Project area.

Methods  
May 15, 2020

## **2.0 METHODS**

### **2.1 WETLAND DELINEATION**

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI) maps, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data for Franklin County, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the Corps of Engineers Wetlands Delineation Manual (USACE Environmental Laboratory 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 2018) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline and/or the OHWM locations of each waterway were identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Additionally, the locations of 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  
May 15, 2020

## 3.0 RESULTS

### 3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on August 28 and 29, and May 1 and 14, 2020, for potentially suitable habitats for threatened and endangered species. Figure 3 (Appendix A) shows the land cover, vegetation communities, and any identified rare, threatened, or endangered species habitat observed within the Project area during the habitat assessment surveys. Representative photographs of the vegetative communities/habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 3 in Appendix A). Information regarding the vegetation communities/habitats identified within the Project area is provided in Table 1.

**Table 1. Vegetation Communities and Land Cover Found within the Amlin – Dublin 138 kV Transmission Line Rebuild 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
Old Field	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species included Canada goldenrod ( <i>Solidago canadensis</i> ), common dandelion ( <i>Taraxacum officinale</i> ), horseweed ( <i>Erigeron canadensis</i> ), common thistle ( <i>Cirsium vulgare</i> ), wild parsnip ( <i>Pastinaca sativa</i> ), yellow foxtail ( <i>Setaria glauca</i> ), heal-all ( <i>Prunella vulgaris</i> ), and broom grass ( <i>Thysanolaena maxima</i> ).	No	4.49
Early Successional Deciduous Forest	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species included Morrow's honeysuckle ( <i>Lonicera morrowii</i> ), Callery pear ( <i>Pyrus calleryana</i> ), red maple ( <i>Acer rubrum</i> ), black locust ( <i>Robinia pseudoacacia</i> ), raspberry ( <i>Rubus idaeus</i> ) common dandelion, hooded blue violet ( <i>Viola sororia</i> ), and Queen Ann's Lace ( <i>Daucus carota</i> ).	No	4.43
Second Growth Deciduous Forest	Intermediate Disturbance/Native Community (dominated by native woody and herbaceous species and opportunistic invaders). Dominant canopy species included common hackberry	No	5.43

**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL RESOURCES INVENTORY REPORT**

Results

May 15, 2020

<b>Vegetation Communities and Land Cover Types within the Project Area</b>	<b>Degree of Human-Related Ecological Disturbance</b>	<b>Unique, Rare, or High Quality?</b>	<b>Approximate Acreage Within Project Area</b>
	( <i>Celtis occidentalis</i> ), black cherry ( <i>Prunus serotina</i> ), and red oak ( <i>Quercus rubra</i> ). In the shrub layer, dominant plant species were Morrow's honeysuckle. The herbaceous layer was dominated by wild grape ( <i>Vitis aestivalis</i> ), and Morrow's honeysuckle.		
Maintained Lawn	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species include red clover ( <i>Trifolium pratense</i> ), English plantain ( <i>Plantago lanceolata</i> ), common plantain ( <i>Plantago major</i> ), and Kentucky bluegrass ( <i>Poa pratensis</i> ).	No	11.44
Agricultural Field	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Fields consisted of tilled soil at time of site visits.	No	4.63
Maintained Road Right-of-Way	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species included Kentucky bluegrass, common plantain, and red clover.	No	2.54
Existing Paved Surface	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	0.24
Existing Roadway	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	1.09
Commercial	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	1.80
Industrial Land	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	0.32
<b>Total</b>			<b>36.41</b>

Results  
May 15, 2020

### 3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project area on April 28 and 29, and May 1 and 14, 2020. Figure 2 (Appendix A) shows three 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 Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio**

Wetland Name	Photo Location Number <sup>1</sup>	Isolated?	Wetland Classification <sup>2</sup>	ORAM Score <sup>4</sup>	ORAM Category <sup>4</sup>	Delineated Area (acre) within Project Area
Wetland 1	2	No	PEM <sup>3</sup>	24	1	0.44
Wetland 2	3	No	PEM <sup>3</sup>	14	1	0.02
Wetland 3	12	No	PEM <sup>3</sup>	16	1	0.01
					<b>TOTAL</b>	<b>0.47</b>
<sup>1</sup> Appendix C – Representative Photographs						
<sup>2</sup> Wetland classification is based on Cowardin et al. (1979).						
<sup>3</sup> PEM= Palustrine Emergent Wetland						
<sup>4</sup> 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 streams within the Project area on April 28 and 29, and May 1 and 14, 2020. Figure 2 (Appendix A) shows the location of five streams identified by Stantec within the Project area. Representative photographs of the streams are included in Appendix C of this report (photo locations are shown on Figure 2 in Appendix A). Completed QHEI and HHEI data forms are included in Appendix D. Information regarding the five streams identified within the Project area is provided in Table 3.



**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL RESOURCES INVENTORY REPORT**

Results  
May 15, 2020

**Table 3. Summary of Stream Resources Found within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio**

Stream Name	Photo Location Number <sup>1</sup>	Receiving Waters	Stream Flow Regime <sup>2</sup>	Stream Evaluation Method	Stream Evaluation Score	OHWM <sup>3</sup> Width (feet)	Delineated Length (feet) within Project Area
Stream 1 (South Fork Indian Run)	4	Scioto River	Perennial	QHEI	46	11	95
Stream 2	6	Scioto River	Ephemeral	HHEI	24	1	160
Stream 3 (Cosgray Ditch)	7	Scioto River	Perennial	QHEI	44.5	6	290
Stream 4	8	Scioto River	Ephemeral	HHEI	26	2	71
Stream 5	9	Scioto River	Ephemeral	HHEI	23	1.5	35
<b>Total</b>							<b>651</b>
<sup>1</sup> Appendix C – Representative photographs as shown on Figure 2 (Appendix A)							
<sup>2</sup> Stream classification is based on Federal Register/Vol. 67, No. 10 (USACE 2002)							
<sup>3</sup> OHWM = Ordinary High Water Mark							

### 3.4 OPEN WATERS

Stantec completed field surveys for waterbodies within the Project area on April 28 and 29, and May 1 and 14, 2020. Figure 2 (Appendix A) shows the location of three waterbodies (open water) identified by Stantec within the Project area. Representative photographs of the open water features are included in Appendix C of this report (photo locations are shown on Figure 2 in Appendix A).

Results  
 May 15, 2020

3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Ohio State-Listed Species within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Invertebrates								
Caddisfly	<i>Chimarra socia</i>	E	Yes	ODNR response pending.	This species is found in aquatic habitats with their nests attached to gravel, cobble, and boulder slab substrates (NatureServe 2020).	Yes	Suitable habitat was observed within the Project area. However, no in-water work is proposed to occur in perennial streams by AEP. Therefore, impacts are not anticipated.	ODNR response is pending.
Birds								
Upland Sandpiper	<i>Bartramia longicauda</i>	E	Yes	ODNR response pending.	Upland sandpipers breed in grasslands, pastures, and unkempt agricultural land with a mosaic of old fields and crop lands, and sometimes the grassy expanses of airports (ODNR Division of Wildlife 2020b). Large areas of grassland/lightly-moderately grazed pasture habitats (>20 acres) are required to be suitable nesting habitat for the upland sandpiper (WDNR 2014).	No	Old field habitat occupied less than 5 acres within the Project area. Therefore, no suitable habitat was observed, and impacts are not anticipated.	ODNR response is pending.
American Bittern	<i>Botaurus lentiginosus</i>	E	Yes	ODNR response pending.	Nesting bitterns are very secretive and prefer large undisturbed wetlands that have scattered small pools amongst the dense vegetation. They occasionally occupy bogs, large wet meadows, and dense, shrubby swamps (ODNR Division of Wildlife 2020b)	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Cattle Egret	<i>Bubulcus ibis</i>	E	Yes	ODNR response pending.	Cattle egrets often forage in dry pastures and fields in addition to open wetlands. They build nests out of sticks and other materials wherever it can be supported (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Lark Sparrow	<i>Chondestes grammacus</i>	E	Yes	ODNR response pending.	This species nests in grassland type of habitats with moderately distributed shrubs or disturbed areas with areas of bare soil. In Ohio, they are known to nest in open grass and shrubby fields along sandy beach areas (ODNR Division of Wildlife 2020b)	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.

Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Northern Harrier	<i>Circus hudsonius</i>	E	Yes	ODNR response pending.	Harriers hunt low over grasslands, with wings held in a distinctive dihedral (V-shape). This is a common migrant and winter species; nesters are much rarer, although they occasionally breed in large marshes and grasslands (ODNR Division of Wildlife 2020b).	No	Old field habitat occupied less than 5 acres within the Project area. Therefore, no suitable habitat was observed, and impacts are not anticipated.	ODNR response is pending.
Sandhill Crane	<i>Grus canadensis</i>	T	Yes	ODNR response pending.	Sandhill cranes are primarily a wetland dependent species. They will utilize agricultural fields for their wintering grounds. However, they roost in shallow, standing water or moist bottomlands. They require rather large tracts of wet meadows, shallow march or bog for breeding and nesting. Sandhill cranes are seasonal residents (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Least Bittern	<i>Ixobrychus exilis</i>	T	Yes	ODNR response pending.	This species prefers to nest in marshes or swamps with dense emergent vegetation, especially cattails (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	T	Yes	ODNR response pending.	These largely nocturnal herons are likely more common than suspected but tend to hide in thick vegetation during the day. They are often found roosting in thick vegetation along streams, lakes, and wetlands (ODNR Division of Wildlife 2020b)	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Barn Owl	<i>Tyto alba</i>	T	Yes	ODNR response pending.	This species depends on open grassland over which to hunt. However, because of the way much of Ohio is farmed today, there is little of this kind of habitat around (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.
Amphibians/Reptiles								
Smooth Greensnake	<i>Opheodrys vernalis</i>	E	Yes	ODNR response pending.	This species is found in a variety of habitats, blackberry bushes, grapevines, shrubs, roadside ditches, open grassy meadows and marshy grass. Majority of species sightings have been in the extreme southwest Ohio. However, wherever prairie remnants are found this species has a potential to occur (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area. Therefore, impacts are not anticipated.	ODNR response is pending.

Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Fishes								
Popeye Shiner	<i>Notropis ariommus</i>	E	Yes	ODNR response pending.	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 Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Spotted Darter	<i>Etheostoma maculatum</i>	E	Yes	ODNR response pending.	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 flat slabs or rock. They spend most of their time hiding under the upstream edge of these large rocks with their heads sticking out watching for food (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Shortnose Gar	<i>Lepisosteus platostomus</i>	E	Yes	ODNR response pending.	This fish is found in large rivers and associated overflow ponds and backwaters (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Scioto Madtom	<i>Noturus trautmani</i>	E	No	ODNR response pending.	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 Division of Wildlife 2019b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	E	Yes	ODNR response pending.	Adult lampreys are found in clear brooks with fast flowing water and sand or gravel bottoms. Juveniles are found in slow moving water buried in soft substrate in medium to large streams (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.

Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Iowa Darter	<i>Estheostoma exile</i>	E	Yes	ODNR response pending.	This fish is found in natural lakes and very sluggish streams or marshes with dense to moderate aquatic vegetation and clear waters often over a sandy substrate. Species are known to occur in Portage Lakes and other smaller natural lakes in both west central and northeast Ohio (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Goldeye	<i>Hiodon alosoides</i>	E	Yes	ODNR response pending.	This fish is found in large rivers and are rather tolerant of turbid waters from clay silts. They do not, however, tolerate industrial chemical pollutants. They are often found in areas with swift currents, often below dams. This fish is found in the Ohio River and its larger tributaries, particularly the Scioto River (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Tippecanoe Darter	<i>Etheostoma tippecanoe</i>	T	Yes	ODNR response pending.	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 Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Tonguetied Minnow	<i>Exoglossum laurae</i>	E	Yes	ODNR response pending.	Habitat for this fish 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 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Paddlefish	<i>Polyodon spathula</i>	T	Yes	ODNR response pending.	This fish is found in the Ohio River and its larger tributaries, preferring sluggish pools and backwater areas (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Lake Chubsucker	<i>Erimyzon sucetta</i>	T	Yes	ODNR response pending.	This fish is found in natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters primarily found in glacially formed natural lakes often referred to as pothole or kettle lakes. This species is found in the group of lakes between Bellefontaine and Urbana, and three slow moving stream systems that have interconnected wetland complexes which include Killbuck Marsh, the upper Cuyahoga River, and the Black Fork of Symmes Creek including Jackson Lake ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.

Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Mussels								
Rayed Bean	<i>Villosa fabalis</i>	E	Yes	ODNR response pending.	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (Butler 2002, Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Butterfly	<i>Ellipsaria lineolata</i>	E	Yes	ODNR response pending.	This mussel is found in large rivers and stretches with pronounced current and substrate of coarse sand and gravel. It can also be found in deep impoundment areas (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Elephant-ear	<i>Elliptio crassidens crassidens</i>	E	Yes	ODNR response pending.	This mussel is found in muddy sand, sand, and rocky substrates in moderate currents. In some areas, it is common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Purple Cat's Paw	<i>Epioblasma obliquata obliquata</i>	E	Yes	ODNR response pending.	This mussel can be found in medium to large rivers with moderate gradient and riffles. Substrates can be sand to gravel (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	ODNR response pending	This mussel is found in a wide variety of streams from small to large (USFWS 2020c). Habitat for this species includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	ODNR response pending.	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.

Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Long-Solid	<i>Fusconaia subrotunda</i>	E	Yes	ODNR response pending.	This species is found in medium to large rivers in gravel with a strong current (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Pocketbook	<i>Lampsilis ovata</i>	E	Yes	ODNR response pending.	This mussel is a generalist, occurring in different sized streams/rivers. Typically occurs in moderate to strong current with substrates of gravel and coarse sand (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Washboard	<i>Megaloniaias nervosa</i>	E	Yes	ODNR response pending.	Occurs in large rivers, typically in main channel or overbank areas of reservoirs. It is found in areas of slow current with muddy to coarse gravel substrates and water can be up to 50 feet (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Clubshell	<i>Pleurobema clava</i>	E	Yes	ODNR response pending.	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 (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Ohio Pigtoe	<i>Pleurobema cordatum</i>	E	Yes	ODNR response pending.	Occurs in medium to large rivers directly above riffles of gravel, cobble, and boulder, but occasionally in muddy or sandy or gravel habitats at great depths (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	E	Yes	ODNR response pending.	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 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.



Results  
 May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Pink Mucket	<i>Lampsilis abrupta</i>	E	Yes	ODNR response pending.	This species is found in large rivers, most commonly in fast-flowing waters with rocky or boulder substrates, but area also found in deeper waters with slower currents with sand and gravel substrates (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Threehorn Wartyback	<i>Obliquaria reflexa</i>	T	Yes	ODNR response pending.	Habitat includes large rivers with moderately strong current and stable substrate of gravel, sand, and mud (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Black Sandshell	<i>Ligumia recta</i>	T	Yes	ODNR response pending.	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 (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Fawnsfoot	<i>Truncilla donaciformis</i>	T	Yes	ODNR response pending.	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 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	ODNR response is pending.
Pondhorn	<i>Unio merus tetralasmus</i>	T	Yes	ODNR response pending.	This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is tolerant of poor water conditions and can be found well buried in a substrate of fine silt and/or mud. It has been known to survive for extended periods of time when a pond or slough has temporarily dried up by burying itself deep into the substrate (NatureServe 2020).	Yes	Potentially suitable habitat (Stream 1 – South Fork Indian Run and Stream 3 - Cosgray Ditch) was observed within the Project area. However, no in-water work is proposed to occur in perennial stream by AEP. Therefore, no impacts to this species are anticipated.	ODNR response is pending.

Results  
May 15, 2020

Common Name	Scientific Name	State <sup>1</sup> Listing	Known to Occur in Franklin County? <sup>2</sup>	Known Within One Mile of Project Area? <sup>3</sup>	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Mammals								
Indiana Bat	<i>Myotis sodalis</i>	E	Yes	ODNR response pending.	The Indiana bat is likely distributed over the entire state of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2020b). 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 suitable winter hibernacula habitat was observed in the Project area. However, suitable summer foraging and roosting habitat was observed in the Project area. AEP intends to avoid areas with summer foraging and roosting habitat to the extent possible. AEP will determine if any summer tree clearing is necessary in areas containing suitable summer foraging and roosting habitat and will proceed accordingly.	ODNR response is pending.
Black Bear	<i>Ursus americanus</i>	E	Yes	ODNR response pending.	This species prefers heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests. Black bears have a large home range and travel a great deal (ODNR Division of Wildlife 2020b).	No	Minimal suitable habitat was observed within the Project area. However, the forested habitat is surrounded by high residential community. Therefore, no impacts to this species are anticipated.	ODNR response is pending.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	T	Yes	ODNR response pending.	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 2019a). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	No suitable winter hibernacula habitat was observed in the Project area. However, suitable summer foraging and roosting habitat was observed in the Project area. AEP intends to avoid areas with summer foraging and roosting habitat to the extent possible. AEP will determine if any summer tree clearing is necessary in areas containing suitable summer foraging and roosting habitat and will proceed accordingly.	ODNR response is pending.
<sup>1</sup> E=Endangered; T=Threatened <sup>2</sup> According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR Division of Wildlife 2020a). <sup>3</sup> According to Ohio Natural Heritage Program (Appendix B)								

Results  
 May 15, 2020

Table 5. Summary of Potential Federally-Listed Species within the Amlin – Dublin 138 kV Transmission Line Rebuild Project Area, Franklin County, Ohio

Common Name	Scientific Name	Federal Listing <sup>1</sup>	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 2007; USFWS 2020b). 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 suitable winter hibernacula were observed in the Project area. However, suitable summer foraging and roosting habitat was observed in the Project area. AEP intends to avoid areas with summer foraging and roosting habitat to the extent possible. AEP will determine if any summer tree clearing is necessary in areas containing suitable summer foraging and roosting habitat and will proceed accordingly.	If no caves or abandoned mines may be disturbed and tree removal is unavoidable, seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) is recommended to avoid adverse effects to Indiana bats. If seasonal tree clearing 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.
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 2020a). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	No suitable winter hibernacula were observed in the Project area. However, suitable summer foraging and roosting habitat was observed in the Project area. AEP intends to avoid areas with summer foraging and roosting habitat to the extent possible. AEP will determine if any summer tree clearing is necessary in areas containing suitable summer foraging and roosting habitat and will proceed accordingly.	If no caves or abandoned mines may be disturbed and tree removal is unavoidable, seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) is recommended to avoid adverse effects to northern long-eared bats. 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	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 (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.

Results  
May 15, 2020

Common Name	Scientific Name	Federal Listing <sup>1</sup>	Known to Occur in Franklin County?	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	E	Yes	This mussel is found in a wide variety of streams from small to large. Habitat for this species includes riffles and firmly packed substrates of fine to coarse gravel. This mussel needs highly oxygenated water (USFWS 2020c).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.
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 (Butler 2002, Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	Snuffbox is commonly found buried in the substrate. It is found in a wide range of particle sized substrates, however, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998, Watters et al. 2009).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.
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 medium to large rivers in sand and gravel shoals (NatureServe 2020).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.
Fish							
Scioto Madtom	<i>Noturus trautmani</i>	E	Yes	This fish prefers tail end of riffles with sand and gravel substrate (ODNR Division of Wildlife 2020b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	Due to the project type, size, and location, USFWS does not anticipate adverse effects to this species.
Plants							
Running Buffalo Clover	<i>Trifolium stoloniferum</i>	E	Yes	Mesic habitats with partial to filtered sunlight including woodlands and mowed lawn (USFWS 2020d).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	Due to the Project type, size, and location, the USFWS does not anticipate adverse effects to this species.
<sup>1</sup> E=Endangered; T=Threatened <sup>2</sup> According to USFWS (2018).							

Conclusions and Recommendations  
May 15, 2020

## 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 April 28 and 29, and May 1 and 14, 2020. During the field surveys, two perennial streams, totaling approximately 385 linear feet in length, three ephemeral streams totaling approximately 266 linear feet, and three PEM Category 1 wetlands, totaling approximately 0.47 acre in size, were delineated 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.

An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on April 28, 2020. As of May 15, 2020, Stantec has not received a response letter in reference to the Amlin – Dublin 138 kV Transmission Line Rebuild Project.

A technical assistance request letter was also submitted to the USFWS on April 28, 2020. The USFWS response letter dated May 4, 2020, states that the USFWS recommends that proposed developments avoid and minimize impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. Best management practices be utilized to minimize erosion, especially on slopes (Appendix B).

According to the USFWS response (Appendix B), all projects in the State of Ohio lie within range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio, the presence of these species is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. No hibernacula for these species were observed within the Project area. The Project area does contain potentially suitable foraging and roosting habitat for the Indiana bat and northern long-eared bat. The USFWS response letter stated that should the project site contain trees  $\geq 3$  inches diameter at breast height, dbh, the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, the USFWS recommends that removal of trees  $\geq 3$  inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/absence surveys be conducted between June 1 and August 15.

**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT**

Conclusions and Recommendations  
May 15, 2020

The USFWS (Appendix A) stated that they do not anticipate adverse effects to any other federally endangered, threatened, or proposed species or their critical habitat due to the project type, size, and location (Appendix B).

# AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL RESOURCES INVENTORY REPORT

References  
May 15, 2020

## 5.0 REFERENCES

- Badra, P. J. 2001. Special animal abstract for *Pleurobema clava* (northern clubshell). Lansing, Michigan: Michigan Natural Features Inventory.
- 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.
- Butler, R. S. 2002. Status assessment report for the rayed bean, *Villosa fabalis*, occurring in the Mississippi River and Great Lakes systems. U.S. Fish and Wildlife Service Regions 3, 4, and 5, and Canada. 62 pp.
- Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31. Washington, D.C.
- 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.
- NatureServe. 2020. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, VA. U.S.A. Available at <http://explorer.natureserve.org>. Accessed May 2020.
- Ohio Department of Natural Resources (ODNR), Division of Wildlife. 2020a. State Listed Wildlife Species by County. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species/state-listed-species-by-county>. Accessed May 2020.
- ODNR, Division of Wildlife. 2020b. Species Guide Index. Available at <http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/>. Accessed May 2020.
- Ohio Environmental Protection Agency (OEPA). 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI).
- Ohio EPA. 2018. Field Methods for Evaluating Primary Headwater Streams in Ohio. Version 4.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 129 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.



**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL RESOURCES INVENTORY REPORT**

References

May 15, 2020

- 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>. Accessed May 2020.
- USACE. 2005. Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05). Available online at <https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf>. Accessed May 2020.
- USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States 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. 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 258 pp.
- USFWS. 2018. Federally-Listed Threatened, Endangered, Proposed, and Candidate Species County Distribution. Available at <https://www.fws.gov/midwest/endangered/lists/ohio-cty.html>. Accessed May 2020.
- USFWS. 2020a. Northern Long-eared Bat (*Myotis septentrionalis*). Available online at <https://www.fws.gov/midwest/Endangered/mammals/nleb/nlebFactSheet.html>. Accessed May 2020.
- USFWS. 2020b. 2020 Range-wide Indiana Bat Survey Guidelines, March 2020. Available at <https://www.fws.gov/midwest/endangered/mammals/inba/surveys/pdf/FINAL%20Range-wide%20Bat%20Survey%20Guidelines%203.23.20.pdf>. Accessed May 2020.
- USFWS. 2020c. Northern riffleshell (*Epioblasma torulosa rangiana*) fact sheet. Available at <https://www.fws.gov/midwest/endangered/clams/n-riffleshell.html>. Accessed May 2020.
- 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.
- Wisconsin Department of Natural Resources (WDNR). 2014. Protocol for incidental take permit and authorization: upland sandpiper (*Bartramia longicauda*). Available online at <https://dnr.wi.gov/topic/ERReview/Documents/GspUplandSandpiper.pdf>. Accessed May 2020.

Figures  
May 15, 2020

## **Appendix A** **FIGURES**

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



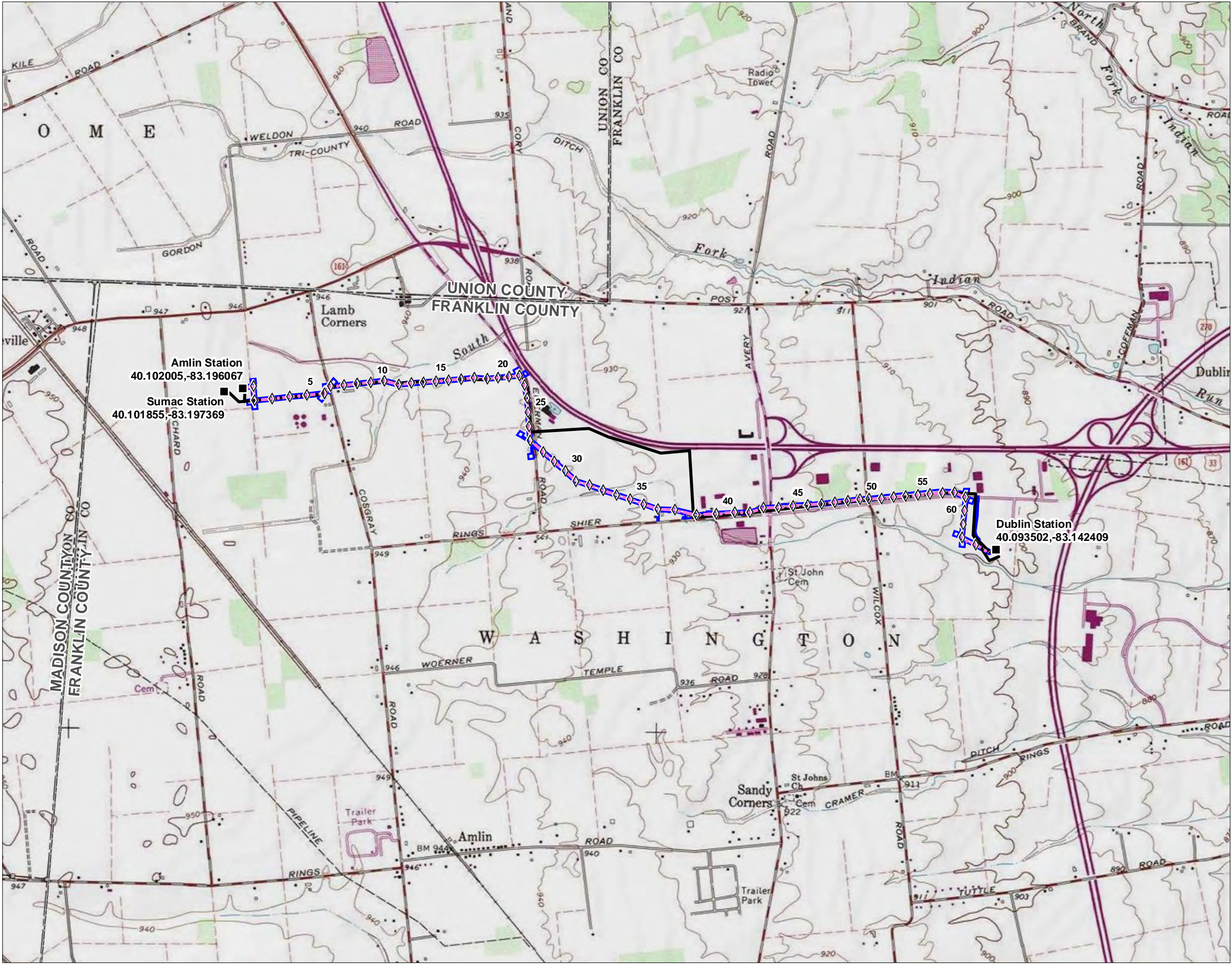
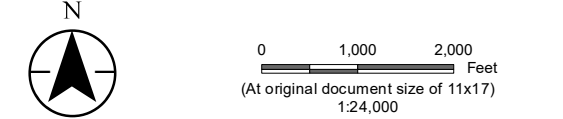
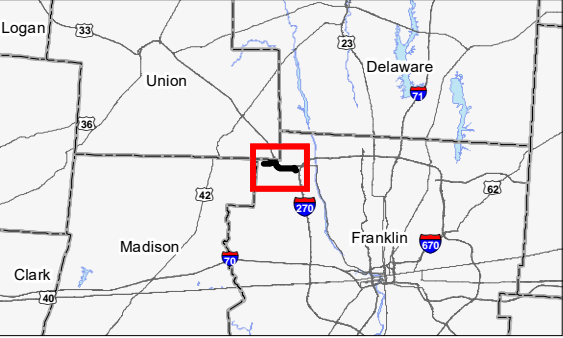


Figure No. 1  
Title Project Location Map

Client/Project AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
Project Location Franklin County, Ohio  
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



- Legend
- AEP Substation
  - ◇ Proposed Structure
  - Existing 138 kV Transmission Line to be Rebuilt
  - - - Proposed 138 kV Transmission Line
  - Project Area



Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS  
3. Background: USGS 7.5' Topographic Quadrangle: Hillard, OH (1980), Northwest Columbus, OH (1984), Powell, OH (1908), Shawnee Hills, OH (1980)



V:\1937\Active\19370557303\_data\figs\_cad\figs\fig1\_topo\_eco\_19370557303.mxd Revised: 2020-05-15 By: JHeideman



Figures  
May 15, 2020

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



V:\1937\active\19370557303\_data\figs\_cad\figs\mde\eco\_figures\fig2\_env\figs\_eco\_193705573.mxd  
Revised: 2020-05-15 By: JHeideman

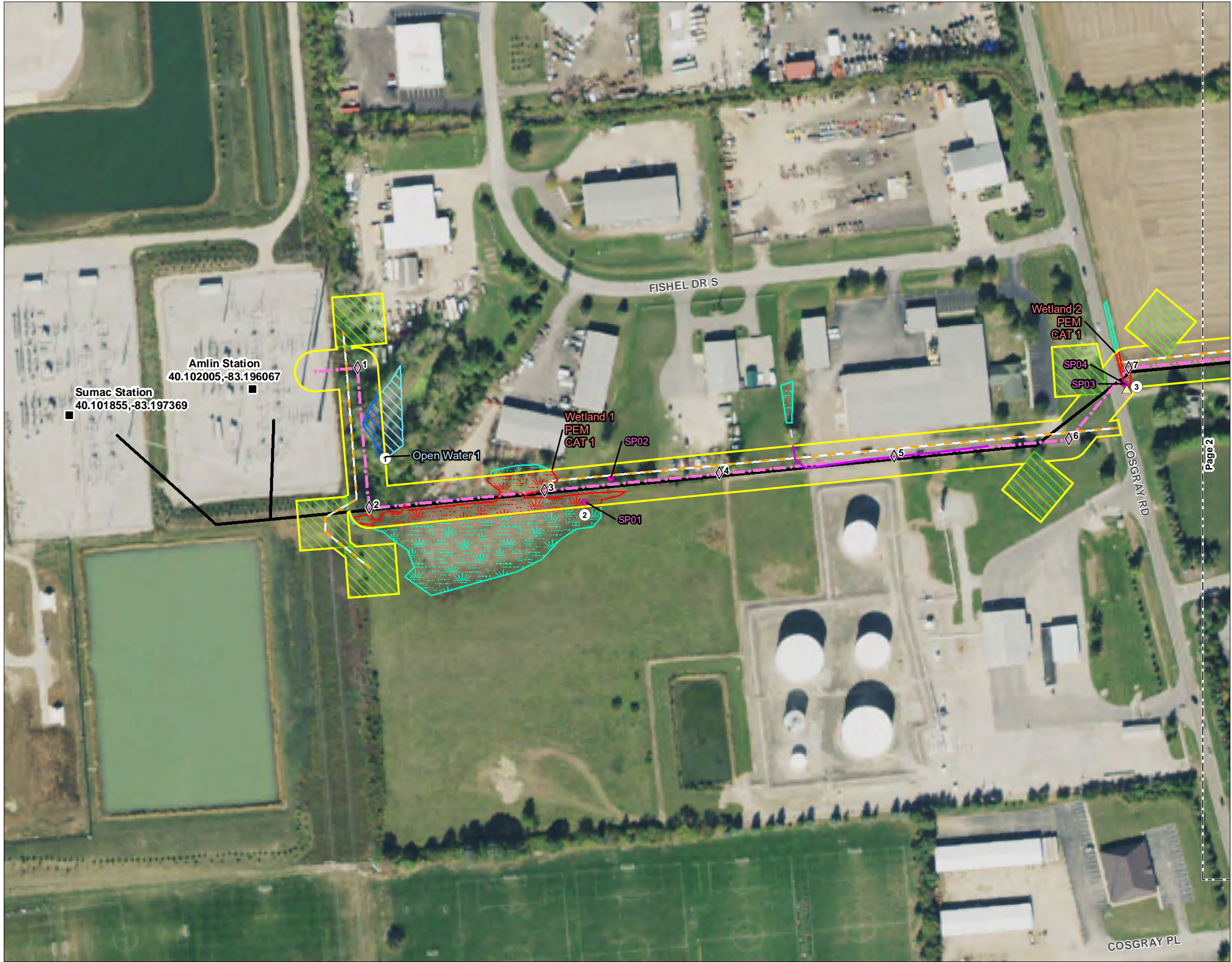


Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

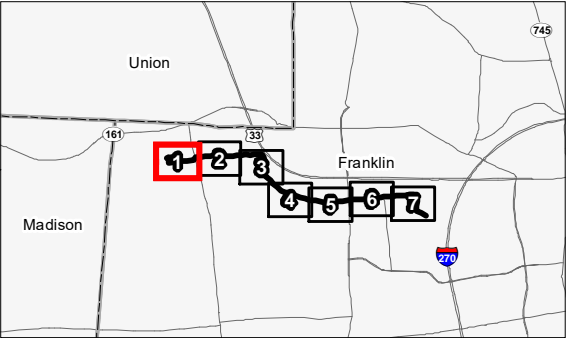
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- ◇ Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- △ Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
- 100-year Flood Zone
- 100-year Floodway



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
3. Orthophotography: 2019 NAIP







Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

---

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

193705573

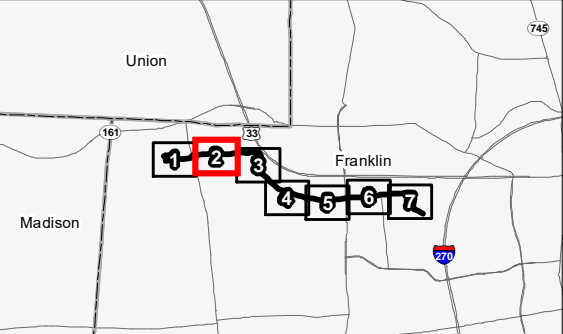
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
- 100-year Flood Zone
- 100-year Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
- Orthophotography: 2019 NAIP



V:\1937\Active\193705573\03\_data\figs\_cad\figs\mde\eco\_figures\fig2\_env\feats\_eco\_193705573.mxd Revised: 2020-05-15 By: JHeideman



V:\1937\Active\193705573\03\_data\figs\_cad\figs\fig2\_env\figs\_eco\_193705573.mxd Revised: 2020-05-15 By: JHeideman



Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

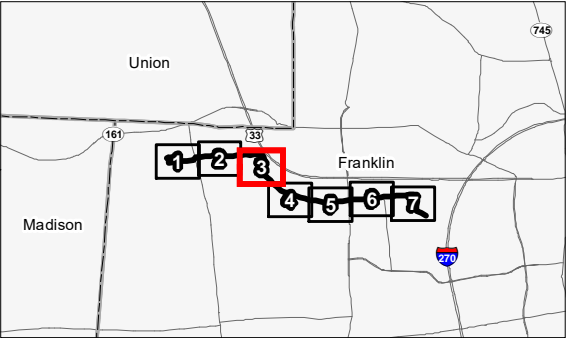
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- ◇ Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- △ Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
- 100-year Flood Zone
- 100-year Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
- Orthophotography: 2019 NAIP







Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

---

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

193705573

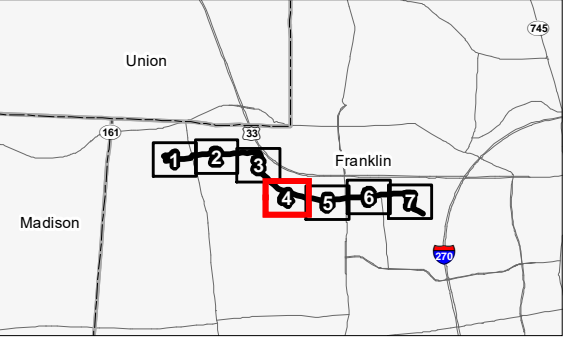
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- ◇ Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- △ Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
- 100-year Flood Zone
- 100-year Floodway



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
3. Orthophotography: 2019 NAIP





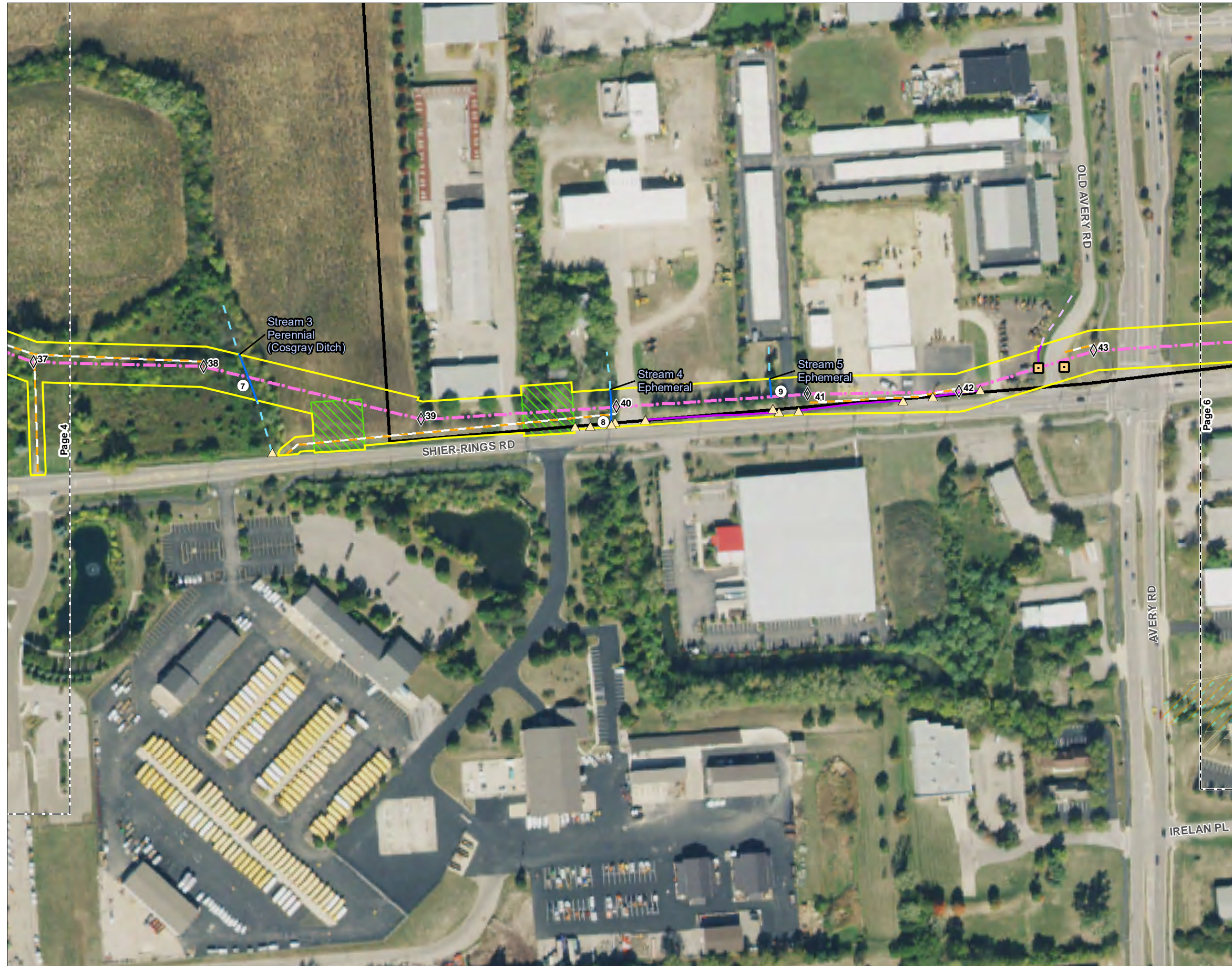


Figure No.

**2**

## Wetland and Waterbody Delineation Map
























<i>Client/Project</i>	193705573
AEP Ohio Transmission Company, Inc. Amlin-Dublin 138 kV Transmission Line Rebuild Project	

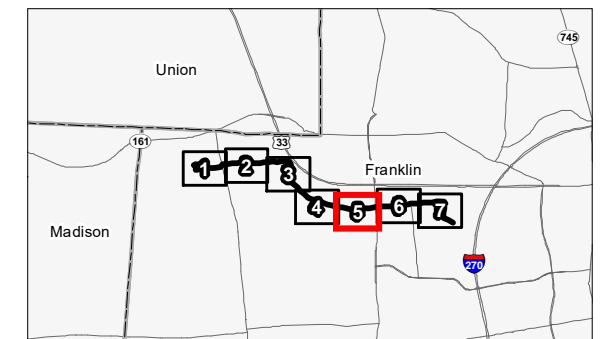
<b>Project Location</b>	Prepared by JLH on 2020-05-04
Franklin County, Ohio	TR by MT on 2020-05-14
	IR Review by AS on 2020-05-15



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

Legend

-  AEP Substation
-  Proposed Structure
-  Existing 138 kV Transmission Line to be Rebuilt
-  Proposed 138 kV Transmission Line
-  Proposed Access Road
-  Project Area
-  Pulling/Tensioning Pad
-  Photo Location
-  Culvert
-  Storm Drain
-  Wetland Determination Sample Point
-  Upland Drainage Feature
-  Approximate Upland Drainage Feature
-  Field Delineated Waterway
-  Approximate Waterway
-  Field Delineated Waterway Area
-  Field Delineated Open Water
-  Approximate Open Water
-  Field Delineated Emergent Wetland
-  Approximate Wetland
-  FEMA Flood Hazard Area
-  100-year Flood Zone
-  100-year Floodway



## Notes

- Notes**
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
  2. Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
  3. Orthophotography: 2019 NAIP







Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

---

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

193705573

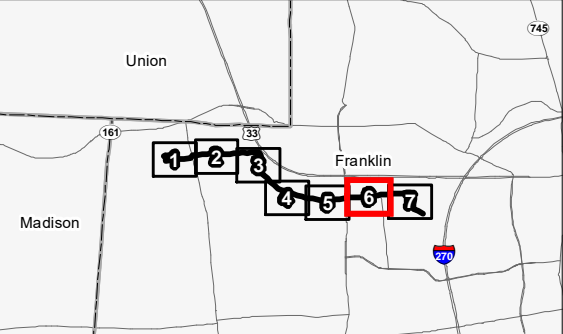
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
  - 100-year Flood Zone
  - 100-year Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
- Orthophotography: 2019 NAIP



V:\1937\Active\19370557303\_data\figs\_cad\figs\mde\eco\_figures\fig2\_env\figs\_193705573.mxd Revised: 2020-05-15 By: JHeideman





Figure No.  
**2**

Title  
**Wetland and Waterbody Delineation Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

Project Location  
Franklin County, Ohio

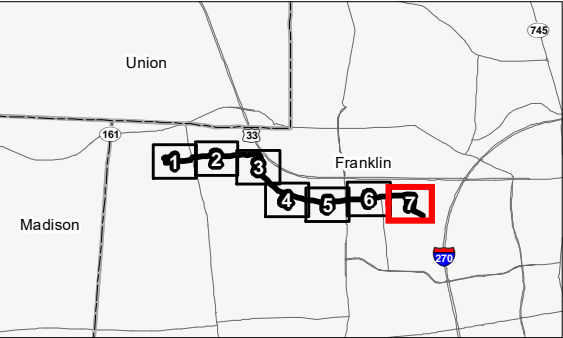
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

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

Legend

- AEP Substation
- Proposed Structure
- Existing 138 kV Transmission Line to be Rebuilt
- Proposed 138 kV Transmission Line
- Proposed Access Road
- Project Area
- Pulling/Tensioning Pad
- Photo Location
- Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Field Delineated Open Water
- Approximate Open Water
- Field Delineated Emergent Wetland
- Approximate Wetland
- FEMA Flood Hazard Area
- 100-year Flood Zone
- 100-year Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Stantec, AEP, USGS, FEMA, NADS, OGRIP
- Orthophotography: 2019 NAIP





Figures  
May 15, 2020

### **A.3     FIGURE 3 – HABITAT ASSESSMENT MAP**



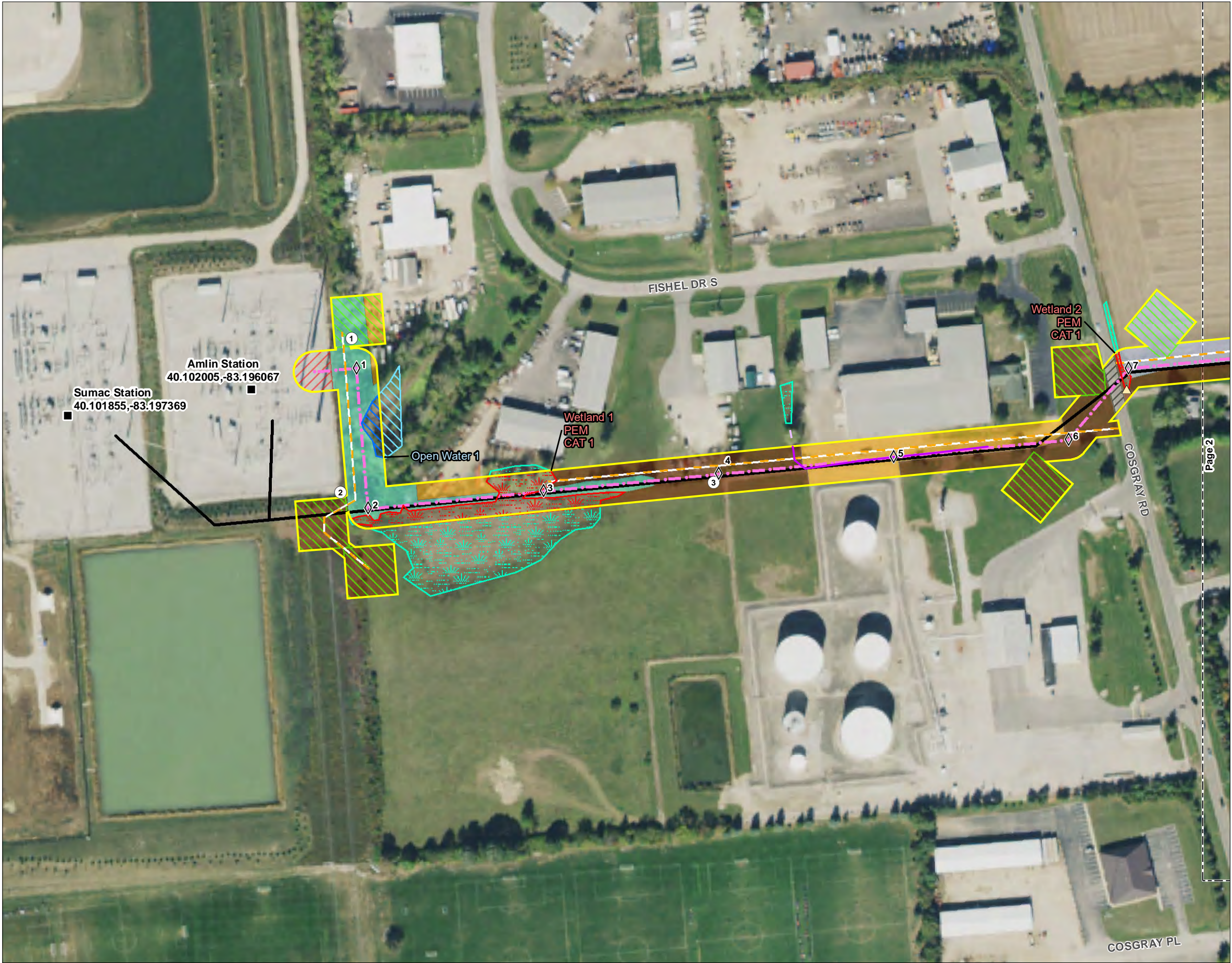
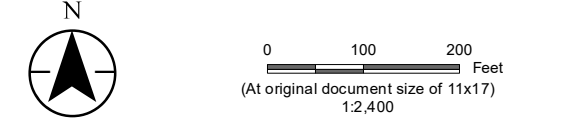
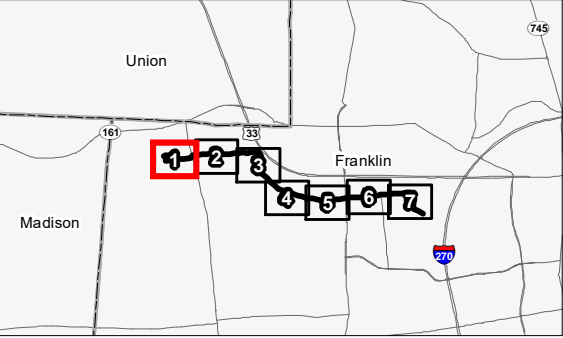


Figure No.  
**3**  
Title  
**Habitat Assessment Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
Project Location  
Franklin County, Ohio  
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



- Legend
- AEP Substation
  - Proposed Structure
  - Existing 138 kV Transmission Line to be Rebuilt
  - Proposed 138 kV Transmission Line
  - Proposed Access Road
  - Project Area
  - Pulling/Tensioning Pad
  - Photo Location
  - Culvert
  - Storm Drain
  - Upland Drainage Feature
  - Approximate Upland Drainage Feature
  - Field Delineated Waterway
  - Approximate Waterway
  - Field Delineated Waterway Area
  - Field Delineated Open Water
  - Approximate Open Water
  - Field Delineated Emergent Wetland
  - Approximate Wetland
  - Habitat Area
    - Agricultural Field
    - Old Field
    - Maintained Lawn
    - Early Successional Deciduous Forest
    - Second Growth Deciduous Forest
    - Maintained Road ROW
    - Commercial
    - Industrial
    - Existing Roadway
    - Existing Paved Surface Area



Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP  
3. Orthophotography: 2019 NAIP

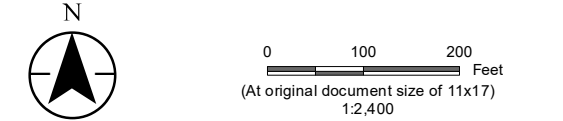




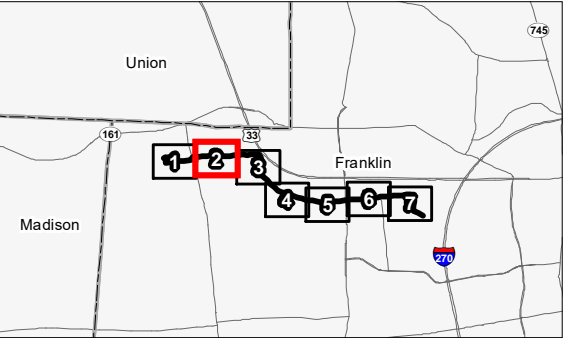


Figure No.  
**3**  
Title  
**Habitat Assessment Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
Project Location  
Franklin County, Ohio  
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



- Legend
- |   |                                     |
|---|-------------------------------------|
| ■ AEP Substation                                | Field Delineated Open Water         |
| ◇ Proposed Structure                            | Approximate Open Water              |
| Existing 138 kV Transmission Line to be Rebuilt | Field Delineated Emergent Wetland   |
| Proposed 138 kV Transmission Line               | Approximate Wetland                 |
| Proposed Access Road                            | Habitat Area                        |
| Project Area                                    | Agricultural Field                  |
| Pulling/Tensioning Pad                          | Old Field                           |
| Photo Location                                  | Maintained Lawn                     |
| Culvert   | Early Successional Deciduous Forest |
| Storm Drain                                     | Second Growth Deciduous Forest      |
| Upland Drainage Feature                         | Maintained Road ROW                 |
| Approximate Upland Drainage Feature             | Commercial                          |
| Field Delineated Waterway                       | Industrial                          |
| Approximate Waterway                            | Existing Roadway                    |
| Field Delineated Waterway Area                  | Existing Paved Surface              |



Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP  
3. Orthophotography: 2019 NAIP





V:\1937\active\193705573\03\_data\figs\_cad\figs\made\eco\_figures\fig3\_habareas\_eco\_193705573.mxd Revised: 2020-05-15 By: JHeideman



Figure No.

3

Title

### Habitat Assessment Map

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

193705573

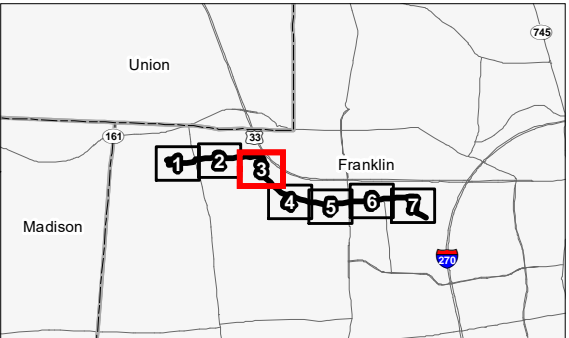
Project Location  
Franklin County, Ohio

Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



#### Legend

- |   |                                     |
|---|-------------------------------------|
| ■ AEP Substation                                | Field Delineated Open Water         |
| ◇ Proposed Structure                            | Approximate Open Water              |
| Existing 138 kV Transmission Line to be Rebuilt | Field Delineated Emergent Wetland   |
| Proposed 138 kV Transmission Line               | Approximate Wetland                 |
| Proposed Access Road                            | Habitat Area                        |
| Project Area                                    | Agricultural Field                  |
| Pulling/Tensioning Pad                          | Old Field                           |
| Photo Location                                  | Maintained Lawn                     |
| Culvert   | Early Successional Deciduous Forest |
| Storm Drain                                     | Second Growth Deciduous Forest      |
| Upland Drainage Feature                         | Maintained Road ROW                 |
| Approximate Upland Drainage Feature             | Commercial                          |
| Field Delineated Waterway                       | Industrial                          |
| Approximate Waterway                            | Existing Roadway                    |
| Field Delineated Waterway Area                  | Existing Paved Surface              |



Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP  
3. Orthophotography: 2019 NAIP



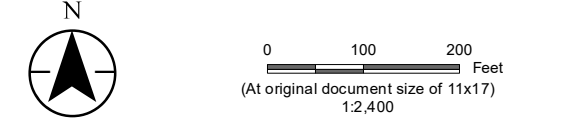




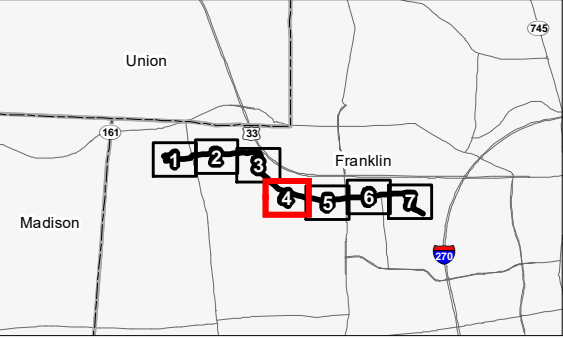
Figure No.  
**3**  
Title  
**Habitat Assessment Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
193705573

Project Location  
Franklin County, Ohio  
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



- Legend
- |   |                                     |
|---|-------------------------------------|
| ■ AEP Substation                                | Field Delineated Open Water         |
| ◇ Proposed Structure                            | Approximate Open Water              |
| Existing 138 kV Transmission Line to be Rebuilt | Field Delineated Emergent Wetland   |
| Proposed 138 kV Transmission Line               | Approximate Wetland                 |
| Proposed Access Road                            | Habitat Area                        |
| Project Area                                    | Agricultural Field                  |
| Pulling/Tensioning Pad                          | Old Field                           |
| Photo Location                                  | Maintained Lawn                     |
| Culvert   | Early Successional Deciduous Forest |
| Storm Drain                                     | Second Growth Deciduous Forest      |
| Upland Drainage Feature                         | Maintained Road ROW                 |
| Approximate Upland Drainage Feature             | Commercial                          |
| Field Delineated Waterway                       | Industrial                          |
| Approximate Waterway                            | Existing Roadway                    |
| Field Delineated Waterway Area                  | Existing Paved Surface              |



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP
3. Orthophotography: 2019 NAIP





V:\1937\Active\19370557303\_data\figs\_cad\figs\mde\eco\_figures\fig3\_habareas\_eco\_193705573.mxd Revised: 2020-05-15 By: JHeideman

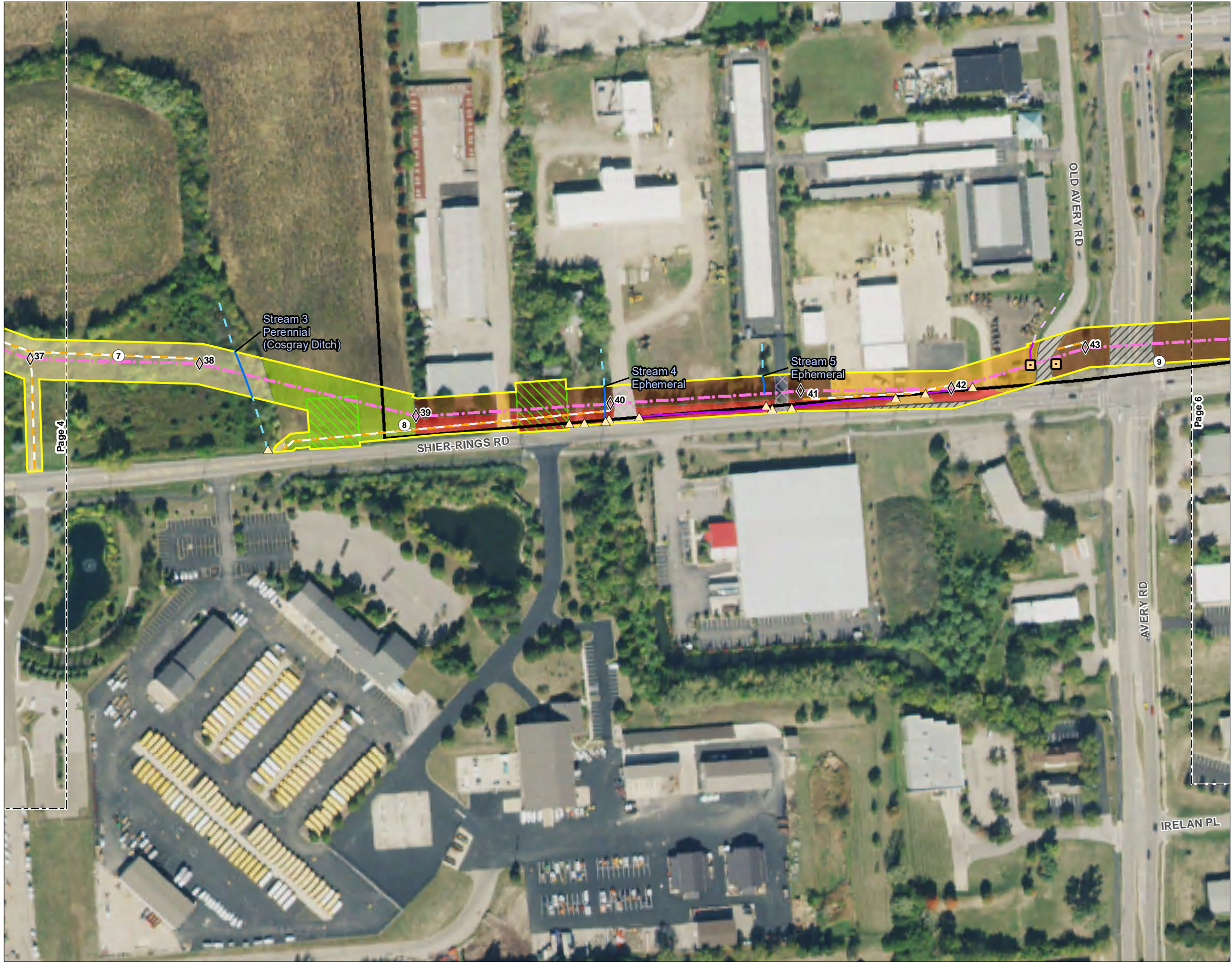


Figure No.  
**3**  
Title  
**Habitat Assessment Map**

---

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project

---

Project Location  
Franklin County, Ohio

Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15

N

0100200

Feet

(At original document size of 11x17)  
1:2,400

Legend

AEP Substation

Proposed Structure

Existing 138 kV Transmission Line to be Rebuilt

Proposed 138 kV Transmission Line

Proposed Access Road

Project Area

Pulling/Tensioning Pad

Photo Location

Culvert

Storm Drain

Upland Drainage Feature

Approximate Upland Drainage Feature

Field Delineated Waterway

Approximate Waterway

Field Delineated Waterway Area

Field Delineated Open Water

Approximate Open Water

Field Delineated Emergent Wetland

Approximate Wetland

Habitat Area

Agricultural Field

Old Field

Maintained Lawn

Early Successional Deciduous Forest

Second Growth Deciduous Forest

Maintained Road ROW

Commercial

Industrial

Existing Roadway

Existing Paved Surface

Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP  
3. Orthophotography: 2019 NAIP

Page 5 of 7

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



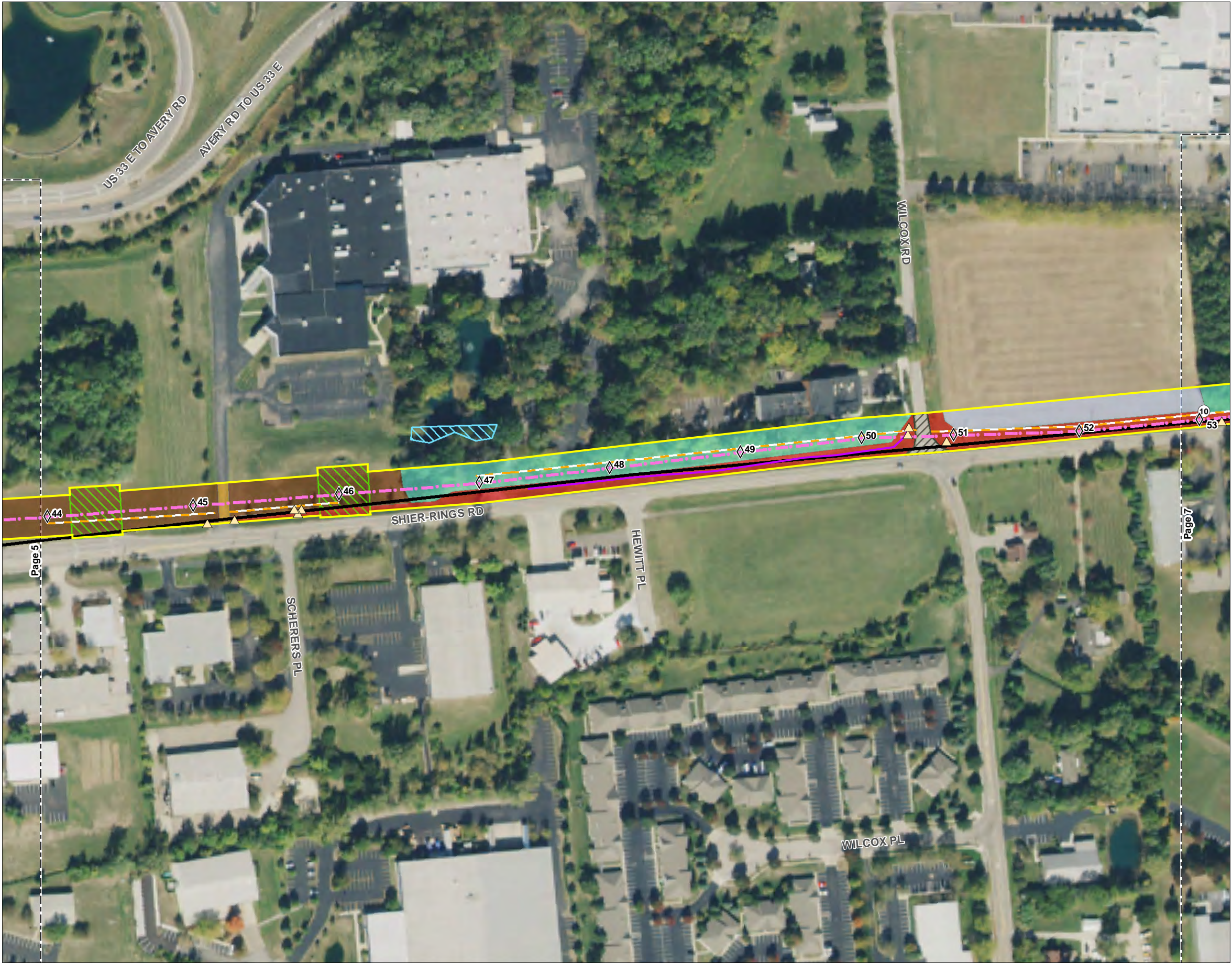
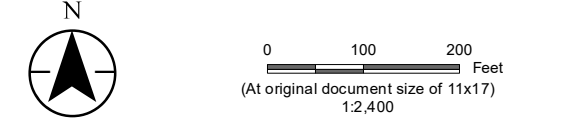


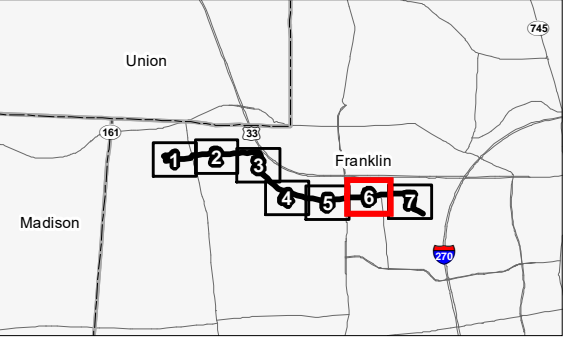
Figure No.  
**3**  
Title  
**Habitat Assessment Map**

Client/Project  
AEP Ohio Transmission Company, Inc.  
Amlin-Dublin 138 kV Transmission Line  
Rebuild Project  
193705573

Project Location  
Franklin County, Ohio  
Prepared by JLH on 2020-05-04  
TR by MT on 2020-05-14  
IR Review by AS on 2020-05-15



- Legend
- |   |                                     |
|---|-------------------------------------|
| ■ AEP Substation                                | Field Delineated Open Water         |
| ◇ Proposed Structure                            | Approximate Open Water              |
| Existing 138 kV Transmission Line to be Rebuilt | Field Delineated Emergent Wetland   |
| Proposed 138 kV Transmission Line               | Approximate Wetland                 |
| Proposed Access Road                            | Habitat Area                        |
| Project Area                                    | Agricultural Field                  |
| Pulling/Tensioning Pad                          | Old Field                           |
| Photo Location                                  | Maintained Lawn                     |
| Culvert   | Early Successional Deciduous Forest |
| Storm Drain                                     | Second Growth Deciduous Forest      |
| Upland Drainage Feature                         | Maintained Road ROW                 |
| Approximate Upland Drainage Feature             | Commercial                          |
| Field Delineated Waterway                       | Industrial                          |
| Approximate Waterway                            | Existing Roadway                    |
| Field Delineated Waterway Area                  | Existing Paved Surface              |



Notes  
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet  
2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP  
3. Orthophotography: 2019 NAIP



V:\1937\Active\19370557303\_data\figs\_cad\figs\mde\eco\_figures\fig3\_habareas\_eco\_193705573.mxd Revised: 2020-05-15 By: JHeideman





Figure No.

### 3

**Habitat Assessment Map**






























<i>Client/Project</i>	193705573
AEP Ohio Transmission Company, Inc. Amlin-Dublin 138 kV Transmission Line Rebuild Project	

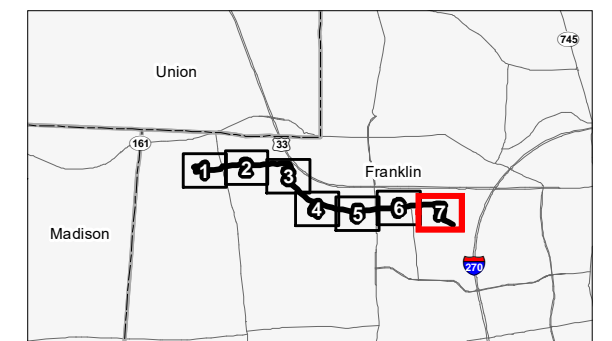
<b>Project Location</b> Franklin County, Ohio	Prepared by JLH on 2020-05-04 TR by MT on 2020-05-14 IR Review by AS on 2020-05-15
--	--



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

Legend

- |   |   |   |                                     |
|---|---|---|-------------------------------------|
|    | AEP Substation                                  |    | Field Delineated Open Water         |
|    | Proposed Structure                              |    | Approximate Open Water              |
|    | Existing 138 kV Transmission Line to be Rebuilt |    | Field Delineated Emergent Wetland   |
|    | Proposed 138 kV Transmission Line               |    | Approximate Wetland                 |
|    | Proposed Access Road                            | <b>Habitat Area</b>   |                                     |
|    | Project Area                                    |    | Agricultural Field                  |
|    | Pulling/Tensioning Pad                          |    | Old Field                           |
|    | Photo Location                                  |    | Maintained Lawn                     |
|    | Culvert   |    | Early Successional Deciduous Forest |
|    | Storm Drain                                     |    | Second Growth Deciduous Forest      |
|   | Upland Drainage Feature                         |   | Maintained Road ROW                 |
|  | Approximate Upland Drainage Feature             |  | Commercial                          |
|  | Field Delineated Waterway                       |  | Industrial                          |
|  | Approximate Waterway                            |  | Existing Roadway                    |
|  | Field Delineated Waterway Area                  |  | Existing Paved Surface              |



### Notes

- Notes**
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
  2. Data Sources: Stantec, AEP, USGS, NADS, OGRIP
  3. Orthophotography: 2019 NAIP





AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT

Agency Correspondence  
May 15, 2020

## **Appendix B**   **AGENCY CORRESPONDENCE**





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



TAILS# 03E15000-2020-TA-1341

Dear Mr. Teitt,

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

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

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

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

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

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

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

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

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

Sincerely,



Patrice Ashfield  
Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW



Representative Photographs  
May 15, 2020

## **Appendix C** REPRESENTATIVE PHOTOGRAPHS

### **C.1** FIGURE 2 – WETLAND AND WATERBODY PHOTOGRAPHS

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 1. View of Open Water 1. Photograph taken facing north.



Photo Location 2. View of Wetland 1 (SP01). Photograph taken facing north.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 2. View of Wetland 1 (SP01). Photograph taken facing east.



Photo Location 2. View of Wetland 1 (SP01). Photograph taken facing south.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 2. View of Wetland 1 (SP01). Photograph taken facing west.



Photo Location 3. View of Wetland 2 (SP03). Photograph taken facing north.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 3. View of Wetland 2 (SP03). Photograph taken facing east.



Photo Location 3. View of Wetland 2 (SP03). Photograph taken facing south.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 3. View of Wetland 2 (SP03). Photograph taken facing west.



Photo Location 4. View of Stream 1, South Fork Indian Run. Photograph taken facing upstream, southwest.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Locaiton 4. View of Stream 1, South Fork Indian Run. Photograph taken facing downstream, northeast.



Photo Location 4. View of Stream 1, South Fork Indian Run, typical substrates.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 5. View of Open Water 2. Photograph taken facing north.



Photo Location 6. View of Stream 2. Photograph taken facing upstream, north.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 6. View of Stream 2. Photograph taken facing downstream, south.



Photo Location 6. View of Stream 2, typical substrates.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 7. View of Stream 3, Cosgray Ditch. Photograph taken facing upstream, north.



Photo Location 7. View of Stream 3, Cosgray Ditch. Photograph taken facing downstream, south.





Photo Location 7. View of Stream 3, Cosgray Ditch, typical substrates.



Photo Location 8. View of Stream 4. Photograph taken facing upstream, north.





Photo Location 8. View of Stream 4. Photograph taken facing downstream, south.



Photo Location 8. View of Stream 4, typical substrates.





Photo Location 9. View of Stream 5. Photograph taken facing upstream, north.



Photo Location 9. View of Stream 5. Photograph taken facing downstream, south.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 9. View of Stream 5, typical substrates.



Photo Location 10. View of upland drainage feature, UDF. Photograph taken facing east.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo location 11. View of upland second growth deciduous forest (SP05). Photograph taken facing north.



Photo Location 12. View of Wetland 3 (SP06). Photograph taken facing north.





Photo Location 12. View of Wetland 3 (SP06). Photograph taken facing east.



Photo Location 12. View of Wetland 3 (SP06). Photograph taken facing south.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV Transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 12. View of Wetland 3 (SP06). Photograph taken facing west.



**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT**

Representative Photographs  
May 15, 2020

**C.2    FIGURE 3 – HABITAT PHOTOGRAPHS**

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 1. View of commercial habitat. Photograph taken facing northeast.



Photo Location 2. View of industrial habitat, Amlin Station. Photograph taken facing west.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 3. View of maintained lawn and commercial habitat. Photograph taken facing east.



Photo Location 4. View of maintained lawn and old field habitat. Photograph taken facing east.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 5. View of maintained lawn. Photograph taken facing south.



Photo Location 6. View of agricultural field habitat. Photograph taken facing southeast.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 7. View of early successional deciduous forest habitat. Photograph taken facing southeast.



Photo Location 8. View of old field habitat. Photograph taken facing northwest.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Locations 9. View of existing roadway, Avery Road. Photograph taken facing west.



Photo Location 10. View of maintained road right-of-way. Photograph taken facing west.

AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 11. View of second growth deciduous forest and maintained road ROW.  
Photograph taken facing west.



Photo Location 12. View of maintained lawn and commercial habitat. Photograph taken facing west.



AEP Ohio Transmission Company, Inc.  
Amlin – Dublin 138 kV transmission Line Rebuild Project  
Franklin County, Ohio



Photo Location 13. View of maintained lawn. Photograph taken facing south.

Data Forms  
May 15, 2020

## **Appendix D** DATA FORMS

### **D.1 QHEI DATA FORMS**



Stream &amp; Location: Steam 1, South Fork Indian Run

RM: \_ \_ \_ Date: 04/ 28/ 20

AEP Amlin - Dublin

Scorers Full Name &amp; Affiliation: Michelle Kearns/Stantec

River Code: - - - STORET #: - - - Lat./ Long.: 40 . 102462 / 83 . 18557

Office verified location ☐1] SUBSTRATE Check ONLY Two substrate TYPE BOXES;  
estimate % or note every type present

Check ONE (Or 2 &amp; average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY		
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input checked="" type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	Substrate <b>5</b> Maximum 20	
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input checked="" type="checkbox"/> MODERATE [-1]		
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]		
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]		
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]		
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> MODERATE [-1]		
NUMBER OF BEST TYPES: <input type="checkbox"/> 4 or more [2] <input checked="" type="checkbox"/> 3 or less [0]				<input type="checkbox"/> LACUSTURINE [0]		<input type="checkbox"/> NORMAL [0]		EMBEDDEDNESS
Comments				<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]		
				<input type="checkbox"/> COAL FINES [-2]				

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

## AMOUNT

Check ONE (Or 2 &amp; average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="0"/> OVERHANGING VEGETATION [1]	<input type="1"/> ROOTWADS [1]	<input type="0"/> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="1"/> SHALLOWS (IN SLOW WATER) [1]	<input type="0"/> BOULDERS [1]	<input type="1"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="1"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments

Cover  
Maximum 20  
**13**

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel  
Maximum 20  
**11**

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

River right looking downstream

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

Comments

Indicate predominant land use(s)  
past 100m riparian.Riparian  
Maximum 10  
**7**

## 5] POOL / GLIDE AND RIFFLE / RUN QUALITY

## MAXIMUM DEPTH

Check ONE (ONLY!)

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

## CHANNEL WIDTH

Check ONE (Or 2 &amp; average)

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

## CURRENT VELOCITY

Check ALL that apply

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

Indicate for reach - pools and riffles.

## Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

Pool /  
Current  
Maximum 12  
**4**

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

Check ONE (Or 2 &amp; average).

☒ NO RIFFLE [metric=0]

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

Comments

Riffle /  
Run  
Maximum 8  
**0**

## 6] GRADIENT ( 7.73 ft/mi)

DRAINAGE AREA

( 1.07 mi<sup>2</sup>)

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

%POOL:

15

%GLIDE:

0

%RUN:

85

%RIFFLE:

0

Gradient

Maximum 10  
**6**

## AJ SAMPLED REACH

Check ALL that apply

### METHOD

- ☐ BOAT  
☒ WADE  
☐ L. LINE  
☐ OTHER

### STAGE

1st -sample pass- 2nd

- ☐ HIGH  
☐ UP  
☒ NORMAL  
☐ LOW  
☐ DRY

### DISTANCE

- ☐ 0.5 Km  
☐ 0.2 Km  
☐ 0.15 Km  
☐ 0.12 Km  
☒ OTHER

29

meters

### CANOPY

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

### CLARITY

1st --sample pass-- 2nd

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

1st \_\_\_\_\_ cm

2nd \_\_\_\_\_ cm

### CJ RECREATION

AREA DEPTH

POOL: ☐ >100ft<sup>2</sup> ☐ >3ft

PH: 7.4

Conductivity: 0.29um/cm

Temp: 13.5 C

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

### BJ AESTHETICS

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

### DJ MAINTENANCE

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

Circle some & COMMENT

### EJ ISSUES

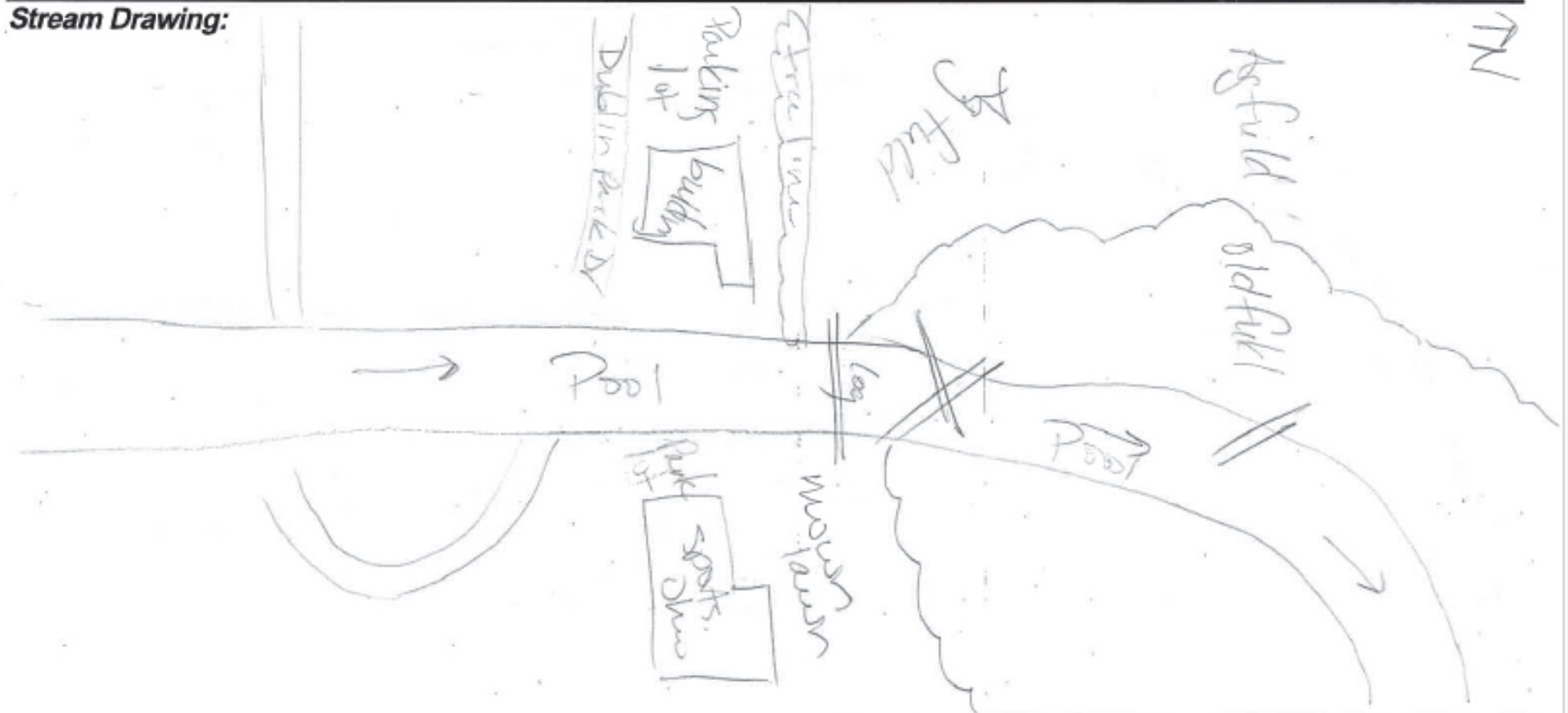
WWTP / CSO / NPDES / INDUSTRY  
HARDENED / URBAN / DIRT&GRIME  
CONTAMINATED / LANDFILL  
BMPs-CONSTRUCTION-SEDIMENT  
LOGGING / IRRIGATION / COOLING  
BANK / EROSION / SURFACE  
FALSE BANK / MANURE / LAGOON  
WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE  
ACID / MINE / QUARRY / FLOW  
NATURAL / WETLAND / STAGNANT  
PARK / GOLF / LAWN / HOME  
ATMOSPHERE / DATA PAUCITY

### FJ MEASUREMENTS

$\bar{x}$  width 15'  
 $\bar{x}$  depth 1.5'  
max. depth  
 $\bar{x}$  bankfull width 18'  
bankfull  $\bar{x}$  depth 2'  
W/D ratio  
bankfull max. depth  
floodprone x<sup>2</sup> width  
entrench. ratio

Legacy Tree:

### Stream Drawing:





Stream &amp; Location: Steam 3, Cosgray Ditch

RM: \_ \_ \_ Date: 04/ 28/ 20

AEP Amlin - Dublin

Scorers Full Name &amp; Affiliation: Michelle Kearns/Stantec

River Code: - - - STORET #: - - - Lat./ Long.: 40 . 095475 / 83 . 16496 Office verified location ☐1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 &amp; average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY		Substrate <b>9</b> Maximum 20
<input type="checkbox"/>	BLDR /SLABS [10]	<input type="checkbox"/>		<input checked="" type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>	x	<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]	
<input type="checkbox"/>	BOULDER [9]	<input type="checkbox"/>		<input type="checkbox"/>	DETRITUS [3]	<input type="checkbox"/>		<input checked="" type="checkbox"/>	TILLS [1]	<input checked="" type="checkbox"/>	MODERATE [-1]	
<input type="checkbox"/>	COBBLE [8]	<input type="checkbox"/>	x	<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>		<input type="checkbox"/>	WETLANDS [0]	<input type="checkbox"/>	NORMAL [0]	
<input type="checkbox"/>	GRAVEL [7]	<input type="checkbox"/>	x	<input type="checkbox"/>	SILT [2]	<input type="checkbox"/>	x	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]	
<input checked="" type="checkbox"/>	SAND [6]	<input type="checkbox"/>	x	<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>		<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]	
<input type="checkbox"/>	BEDROCK [5]	<input type="checkbox"/>						<input type="checkbox"/>	RIP/RAP [0]	<input checked="" type="checkbox"/>	MODERATE [-1]	
(Score natural substrates; ignore sludge from point-sources)								<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]	
NUMBER OF BEST TYPES: <input type="checkbox"/> 4 or more [2] <input checked="" type="checkbox"/> 3 or less [0]								<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]	
Comments								<input type="checkbox"/>	COAL FINES [-2]			

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

AMOUNT

Check ONE (Or 2 &amp; average)

0	UNDERCUT BANKS [1]	0	POOLS > 70cm [2]	0	OXBOWS, BACKWATERS [1]	<input type="checkbox"/>	EXTENSIVE >75% [11]
0	OVERHANGING VEGETATION [1]	0	ROOTWADS [1]	0	AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/>	MODERATE 25-75% [7]
1	SHALLOWS (IN SLOW WATER) [1]	0	BOULDERS [1]	1	LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/>	SPARSE 5-<25% [3]
0	ROOTMATS [1]					<input type="checkbox"/>	NEARLY ABSENT <5% [1]

Comments

Cover  
Maximum 20  
**5**3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel  
Maximum 20  
**10**4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

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

Comments

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

Riparian  
Maximum 10  
**8**5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

Check ONE (ONLY!)

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

CHANNEL WIDTH

Check ONE (Or 2 &amp; average)

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

CURRENT VELOCITY

Check ALL that apply

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

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

Pool /  
Current  
Maximum 12  
**4**

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

Check ONE (Or 2 &amp; average).

☐ NO RIFFLE [metric=0]

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

Comments

Riffle /  
Run  
Maximum 8  
**2.5**6] **GRADIENT** ( 8.21 ft/mi)  
DRAINAGE AREA ( 1.69 mi<sup>2</sup>)  
☐ VERY LOW - LOW [2-4]  
☒ MODERATE [6-10]  
☐ HIGH - VERY HIGH [10-6]

%POOL: 10

%GLIDE: 0

%RUN: 85

%RIFFLE: 5

Gradient  
Maximum 10  
**6**

## AJ SAMPLED REACH

Check ALL that apply

### METHOD

- ☐ BOAT  
☒ WADE  
☐ L. LINE  
☐ OTHER

### STAGE

1st -sample pass- 2nd

- ☐ HIGH  
☐ UP  
☒ NORMAL  
☐ LOW  
☐ DRY

### DISTANCE

- ☐ 0.5 Km  
☐ 0.2 Km  
☐ 0.15 Km  
☐ 0.12 Km  
☒ OTHER

29

meters

### CANOPY

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

### CLARITY

1st --sample pass-- 2nd

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

1st \_\_\_\_\_ cm

2nd \_\_\_\_\_ cm

### CJ RECREATION

AREA DEPTH

POOL: ☐ >100ft<sup>2</sup> ☐ >3ft

### BJ AESTHETICS

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

### DJ MAINTENANCE

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

Circle some & COMMENT

### EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY  
HARDENED / URBAN / DIRT&GRIME  
CONTAMINATED / LANDFILL  
BMPs-CONSTRUCTION-SEDIMENT  
LOGGING / IRRIGATION / COOLING  
BANK / EROSION / SURFACE  
FALSE BANK / MANURE / LAGOON  
WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE  
ACID / MINE / QUARRY / FLOW  
NATURAL / WETLAND / STAGNANT  
PARK / GOLF / LAWN / HOME  
ATMOSPHERE / DATA PAUCITY

### FJ MEASUREMENTS

$\bar{x}$  width 6'  
 $\bar{x}$  depth 0.5'  
max. depth  
 $\bar{x}$  bankfull width 8'  
bankfull  $\bar{x}$  depth 1.5'  
W/D ratio  
bankfull max. depth  
floodprone x<sup>2</sup> width  
entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

PH: 7.3

Conductivity: 0.35um/cm

Temp: 13.6 C

## Stream Drawing:





**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT**

Data Forms  
May 15, 2020

## **D.2 HHEI DATA FORMS**



# Primary Headwater Habitat Evaluation Form

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

24

SITE NAME/LOCATION **Stream 2 Amlin - Dublin**

SITE NUMBER **Stream 2** RIVER BASIN  DRAINAGE AREA (mi<sup>2</sup>) **< 1**

LENGTH OF STREAM REACH (ft) **160** LAT. **40.09681** LONG. **-83.17105** RIVER CODE  RIVER MILE

DATE **04/28/20** SCORER **M.Kearns** COMMENTS **Ephemeral**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="90%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="10%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**

TOTAL NUMBER OF SUBSTRATE TYPES: **2**

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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS  MAXIMUM POOL DEPTH (centimeters): **4**

Pool Depth Max = 30

5

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BFW - 2' BFD - 0.5' / OWHMW - 1' OHWMD - 2"** AVERAGE BANKFULL WIDTH (meters): **0.69**

Bankfull Width Max=30

5

This information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY

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

### RIPARIAN WIDTH

L	R	(Per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

### FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

### FLOW REGIME (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

### STREAM GRADIENT ESTIMATE

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



**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: Scioto River Distance from Evaluated Stream 3.22 mi.  
☐ 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: Hilliard NRCS Soil Map Page:  NRCS Soil Map Stream Order   
County: Franklin Township / City: Washington / Dublin

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/26/20 Quantity: 0.46 in.  
Photograph Information: Upstream, Downstream, Substrates  
Elevated Turbidity? (Y/N): N Canopy (% open): 100%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:   
Field Measures: Temp (°C) 18.20 Dissolved Oxygen (mg/l)  pH (S.U.) 8.20 Conductivity (µmhos/cm) 0.18  
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

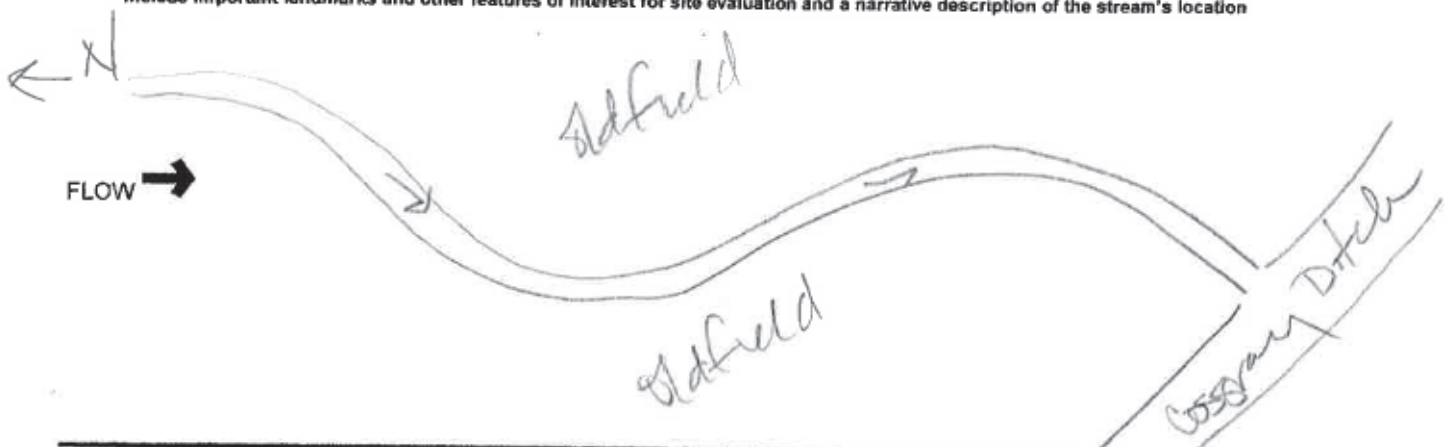
Additional comments/description of pollution impacts:

**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) ☐ Voucher? (Y/N) ☐ Salamanders Observed? (Y/N) ☐ Voucher? (Y/N) ☐  
Frogs or Tadpoles Observed? (Y/N) ☐ Voucher? (Y/N) ☐ Aquatic Macroinvertebrates Observed? (Y/N) ☐ Voucher? (Y/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





# Primary Headwater Habitat Evaluation Form

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

26

SITE NAME/LOCATION **Stream 4 Amlin - Dublin**

SITE NUMBER **Stream 4** RIVER BASIN  DRAINAGE AREA (mi<sup>2</sup>) **<1.0**

LENGTH OF STREAM REACH (ft) **71** LAT. **40.09538** LONG. **-83.16240** RIVER CODE  RIVER MILE

DATE **04/28/20** SCORER **M.Kearns** COMMENTS **Ephemeral**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="20%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="15%"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="65%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **15.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3**

TOTAL NUMBER OF SUBSTRATE TYPES: **3**

HHEI Metric Points

Substrate Max = 40

6

A + B

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

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

5

COMMENTS  MAXIMUM POOL DEPTH (centimeters): **4**

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull Width Max=30

15

COMMENTS **BFW - 4' BFD - 1' / OWHMW - 2' OHWMD - 6"** AVERAGE BANKFULL WIDTH (meters): **1.20**

This information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY

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

### RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

### FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS

### FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

### STREAM GRADIENT ESTIMATE

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

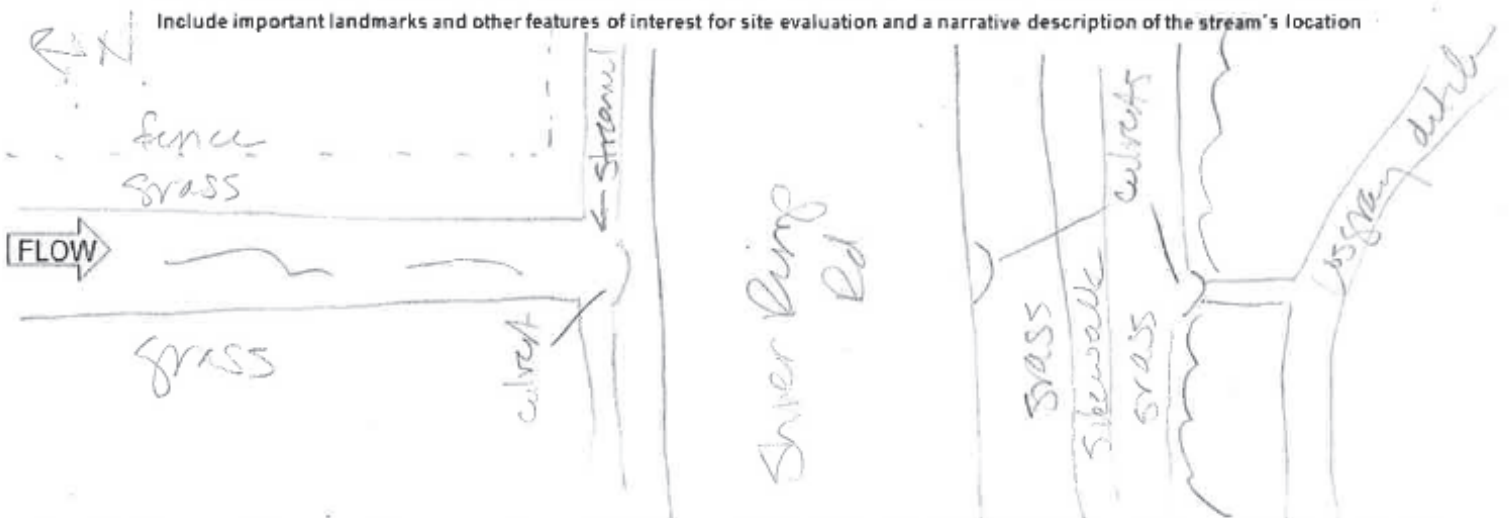


**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

<input checked="" type="checkbox"/> WWH Name: <b>Scioto River</b>	Distance from Evaluated Stream	<b>2.75 mi.</b>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

**MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION**USGS Quadrangle Name: **Hilliard** NRCS Soil Map Page:  NRCS Soil Map Stream Order   
County: **Franklin** Township / City: **Dublin****MISCELLANEOUS**Base Flow Conditions? (Y/N): ☒ Y Date of last precipitation: **04/26/20** Quantity: **0.46 in.**Photograph Information: **Upstream, Downstream, Substrates**Elevated Turbidity? (Y/N): ☒ Y Canopy (% open): **50%**Were samples collected for water chemistry? (Y/N): ☒ N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) **13.00** Dissolved Oxygen (mg/l)  pH (S.U.) **7.10** Conductivity (µmhos/cm) **370**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) ☐ Voucher? (Y/N) ☐ Salamanders Observed? (Y/N) ☐ Voucher? (Y/N) ☐  
Frogs or Tadpoles Observed? (Y/N) ☐ Voucher? (Y/N) ☐ Aquatic Macroinvertebrates Observed? (Y/N) ☐ Voucher? (Y/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





## Primary Headwater Habitat Evaluation Form

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

23

SITE NAME/LOCATION **Stream 5 Amlin - Dublin**

SITE NUMBER **Stream 5** RIVER BASIN  DRAINAGE AREA (mi<sup>2</sup>) **<1.0**

LENGTH OF STREAM REACH (ft) **35** LAT. **40.08547** LONG. **-83.16127** RIVER CODE  RIVER MILE

DATE **04/29/20** SCORER **M.Kearns** COMMENTS **Ephemeral**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="20%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="5%"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="50%"/>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="25%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **5.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9**TOTAL NUMBER OF SUBSTRATE TYPES: **4**

HHEI Metric Points

Substrate Max = 40

13

A + B

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

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS  MAXIMUM POOL DEPTH (centimeters): **4**

Pool Depth Max = 30

5

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

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **BFW - 3' BFD - 0.5' / OWHMW - 1.5' OHWMD - 2'** AVERAGE BANKFULL WIDTH (meters): **0.90**

Bankfull Width Max=30

5

This information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY

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

## RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS 

## FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

## STREAM GRADIENT ESTIMATE

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



**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: Scioto River Distance from Evaluated Stream 2.70 mi.  
☐ 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: Hilliard NRCS Soil Map Page:  NRCS Soil Map Stream Order   
County: Franklin Township / City: Dublin

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/26/20 Quantity: 0.46 in.  
Photograph Information: Upstream, Downstream, Substrates  
Elevated Turbidity? (Y/N): N Canopy (% open): 50%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:   
Field Measures: Temp (°C) 15.60 Dissolved Oxygen (mg/l)  pH (S.U.) 7.10 Conductivity (µmhos/cm) 320  
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:

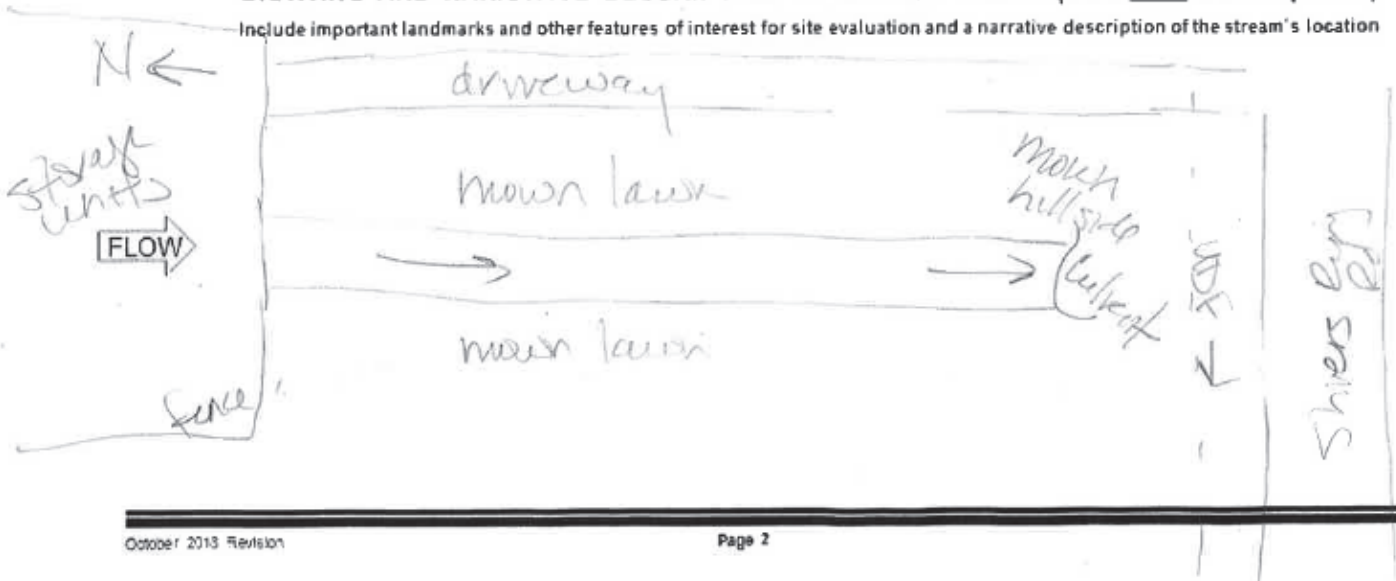
Additional comments/description of pollution impacts:

**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) ☐ Voucher? (Y/N) ☐ Salamanders Observed? (Y/N) ☐ Voucher? (Y/N) ☐  
Frogs or Tadpoles Observed? (Y/N) ☐ Voucher? (Y/N) ☐ Aquatic Macroinvertebrates Observed? (Y/N) ☐ Voucher? (Y/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



Data Forms  
May 15, 2020

## **D.3 WETLAND DETERMINATION DATA FORMS**



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 04/29/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP01  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none  
 Slope (%): 1 Lat: 40.101403 Long: -83.193694 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0 to 2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Wetland point for Wetland 1</u>	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Rumex crispus</u> 5 N FAC 2. <u>Carex scoparia</u> 80 Y FACW 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 85 = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) <u>15% open water</u>				
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

**SOIL**Sampling Point: SP01**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 15	10YR 4/2	95	10YR 5/6	5	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- |  |  |
|--|--|
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Stratified Layers (A5)            | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> 2 cm Muck (A10)                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)      | <input type="checkbox"/> Redox Depressions (F8)          |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: Refusal - Clay  
 Depth (inches): 15+
Hydric Soil Present? Yes ☒ No ☐

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>2"</u>
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>surface</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>0"</u>

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 04/29/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP02  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 40.101534 Long: -83.193512 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0 to 2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Upland point for Wetland 2</u>	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>3.5</u>
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Taraxacum officinale</u> <u>10</u> <u>N</u> <u>FACU</u> 2. <u>Trifolium pratense</u> <u>20</u> <u>Y</u> <u>FACU</u> 3. <u>Poa pratensis</u> <u>50</u> <u>Y</u> <u>FAC</u> 4. <u>Plantago lanceolata</u> <u>20</u> <u>Y</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				

**SOIL**Sampling Point: SP02**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 3/4	100					Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: Fill gravel  
 Depth (inches): 6+
Hydric Soil Present? Yes ☐ No ☒

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**Primary Indicators (minimum of one is required; check all that apply)

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 04/29/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP03  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 40.102071 Long: -83.189853 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0 to 2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Wetland point for Wetland 2</u>	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> 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)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Typha latifolia</u> 50 Y OBL 2. <u>Typha angustifolia</u> 45 Y OBL 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 100 = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

**SOIL**Sampling Point: SP03**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 7	10YR 4/2	95	10YR 5/8	5	C	M	Clay Loam	
7 - 10	10YR 4/3	95	10YR 5/8	5	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- |  |  |
|--|--|
| <input type="checkbox"/> Histic Sol (A1)                   | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 2 cm Muck (A10)                   | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)      |  |

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: Refusal  
 Depth (inches): 10+
Hydric Soil Present? Yes ☒ No ☐

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>1-2"</u>
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>Surface</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>0</u>

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 04/29/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP04  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none  
 Slope (%): 1 Lat: 40.102076 Long: -83.189867 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0 to 2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>335</u> (B) Prevalence Index = B/A = <u>3.35</u>
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Taraxacum officinale</u> <u>5</u> <u>N</u> <u>FACU</u> 2. <u>Trifolium pratense</u> <u>20</u> <u>Y</u> <u>FACU</u> 3. <u>Poa pratensis</u> <u>65</u> <u>Y</u> <u>FAC</u> 4. <u>Plantago lanceolata</u> <u>10</u> <u>N</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				

**SOIL**Sampling Point: SP04**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 12	10YR 4/3	100					Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: Refusal  
 Depth (inches): 12+
Hydric Soil Present? Yes ☐ No ☒

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**Primary Indicators (minimum of one is required; check all that apply)

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 04/28/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP05  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 0 Lat: 40.096608 Long: -83.147253 Datum: \_\_\_\_\_  
 Soil Map Unit Name: CrA - Crosby silt loam, Southern Ohio Till Plain, 0-2% slopes NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Upland point within NWI PFO1A</u>	

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

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. <u>Prunus serotina</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
2. <u>Carya cordiformis</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>135</u> x 4 = <u>675</u> UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>35</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				
1. <u>Lonicera morrowii</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>75</u> = Total Cover				
Herb Stratum (Plot size: <u>5'</u> )				
1. <u>Lonicera morrowii</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>20</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Woody Vine Stratum (Plot size: <u>5'</u> )				
1. <u>Vitis aestivalis</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
<u>5</u> = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)  
80% Open ground

Sampling Point: SP05

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0.5</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>20</u> (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 05/01/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP06  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 40.093428 Long: -83.14324 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0-2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Wet Point for Wetland 3</u>	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
_____ = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Eleocharis acicularis</u> <u>85</u> <u>Y</u> <u>OBL</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
85 = Total Cover Remarks: (Include photo numbers here or on a separate sheet.) <u>15% Open ground</u>				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____				

**SOIL**Sampling Point: SP06**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3	10YR 3/2	100					Clay Loam	
3 - 15	10YR 4/2	93	10YR 5/8	7	C	M	Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: Refusal  
 Depth (inches): 15+
Hydric Soil Present? Yes ☒ No ☐

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>2 - 3"</u>
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>0"</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches): <u>0"</u>

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:



**WETLAND DETERMINATION DATA FORM – Midwest Region**

Project/Site: Amlin - Dublin City/County: Dublin/Franklin Co. Sampling Date: 05/01/20  
 Applicant/Owner: AEP State: OH Sampling Point: SP07  
 Investigator(s): Michelle Kearns, Charlie Allen Section, Township, Range: N/A  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 40.093428 Long: -83.14324 Datum: \_\_\_\_\_  
 Soil Map Unit Name: Ko - Kokomo silty clay loam, 0-2% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: <u>Upland point for Wetland 3</u>	

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

Tree Stratum (Plot size: <u>N/A</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>385</u> (B) Prevalence Index = B/A = <u>3.85</u>
<b>Sapling/Shrub Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b> 1. <u>Trifolium partense</u> <u>20</u> <u>Y</u> <u>FACU</u> 2. <u>Plantago major</u> <u>15</u> <u>N</u> <u>FAC</u> 3. <u>Festuca rubra</u> <u>55</u> <u>Y</u> <u>FACU</u> 4. <u>Taraxacum officinale</u> <u>10</u> <u>N</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>N/A</u>)</b> 1. _____ 2. _____ _____ = Total Cover				
100 = Total Cover				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) <u>15% Open ground</u>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>				

**SOIL**Sampling Point: SP07**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 3/3	100					Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

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

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- |   |
|---|
| <input type="checkbox"/> Coast Prairie Redox (A16)        |
| <input type="checkbox"/> Dark Surface (S7)                |
| <input type="checkbox"/> Iron-Manganese Masses (F12)      |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
 Type: N/A  
 Depth (inches): \_\_\_\_\_
Hydric Soil Present? Yes \_\_\_\_\_ No ☒

Remarks:

**HYDROLOGY****Wetland Hydrology Indicators:**Primary Indicators (minimum of one is required; check all that apply)

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

Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

**Field Observations:**

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): <u>--</u>

Wetland Hydrology Present? Yes \_\_\_\_\_ No ☒

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

Remarks:

**AMLIN – DUBLIN 138 KV TRANSMISSION LINE REBUILD PROJECT, FRANKLIN COUNTY, OHIO, ECOLOGICAL  
RESOURCES INVENTORY REPORT**

Data Forms  
May 15, 2020

## **D.4 ORAM DATA FORMS**



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

### Instructions

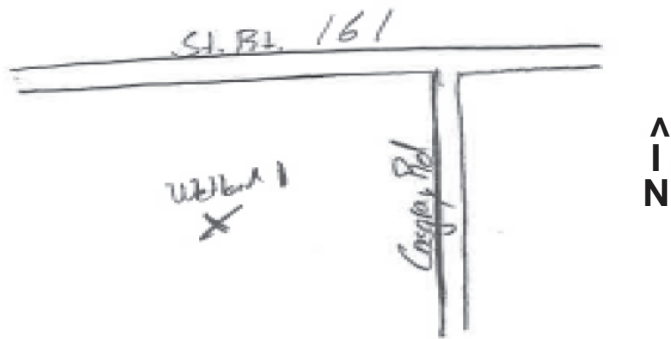
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.


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

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

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

## Background Information

<b>Name:</b>	Michelle Kearns		
<b>Date:</b>	4/29/20		
<b>Affiliation:</b>	Stantec Consulting Services Inc		
<b>Address:</b>	1500 Lake Shore Drive, Columbus, Ohio 43204		
<b>Phone Number:</b>	614 486-4383		
<b>e-mail address:</b>	michelle.kearns@stantec.com		
<b>Name of Wetland:</b>	Wetland 1		
<b>Vegetation Communit(ies):</b>	PEM		
<b>HGM Class(es):</b>	Depression		
<b>Location of Wetland:</b> include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	40.10131, -83.194394		
USGS Quad Name	Hilliard		
County	Franklin		
Township	Washington		
Section and Subsection			
Hydrologic Unit Code	050600011203		
Site Visit	04/29/20		
National Wetland Inventory Map	Yes		
Ohio Wetland Inventory Map	No		
Soil Survey	Franklin County Soil Survey		
Delineation report/map	Ecological Report: Figure 2		

Name of Wetland: Wetland 1	
Wetland Size (acres, hectares): 0.54 ac. (XX ac. within the Project area)	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 24	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 1

Michelle Kearns

4/29/20

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

**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

Michelle Kearns

4/29/20

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

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



**Table 1. Characteristic plant species.**

<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>Oak Opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>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.**

<b>Site:</b> Wetland 1	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 4/29/20
------------------------	----------------------------------	----------------------

<b>2</b>	<b>2</b>
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)

<b>2</b>	<b>4</b>
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)

<b>8</b>	<b>12</b>
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	
<input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input checked="" type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

<b>7</b>	<b>19</b>
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	
<input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

<b>19</b>
subtotal this page

<b>Site:</b> Wetland 1	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 4/29/20
------------------------	----------------------------------	----------------------

19

subtotal first page

0	19
---	----

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)

5	24
---	----

max 20 pts.

subtotal

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

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 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.

- ☐ 1 Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ 1 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

**End of Quantitative Rating. Complete Categorization Worksheets.**





## 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 <input type="checkbox"/>  Wetland is categorized as a Category 3 wetland	NO <input checked="" type="checkbox"/>	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 <input type="checkbox"/>  Wetland should be evaluated for possible Category 3 status	NO <input checked="" type="checkbox"/>	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 <input type="checkbox"/>  Wetland is categorized as a Category 1 wetland	NO <input checked="" type="checkbox"/>	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 <input checked="" type="checkbox"/>  Wetland is assigned to the appropriate category based on the scoring range	NO <input type="checkbox"/>	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 <input type="checkbox"/>  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO <input checked="" type="checkbox"/>	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</i> OR <i>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 <input type="checkbox"/>  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO <input checked="" type="checkbox"/>  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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

### Instructions

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

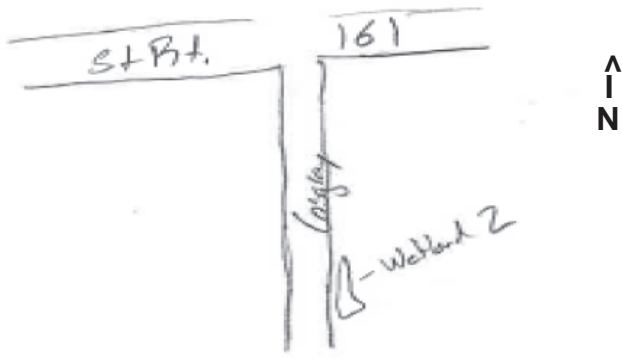
The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated.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

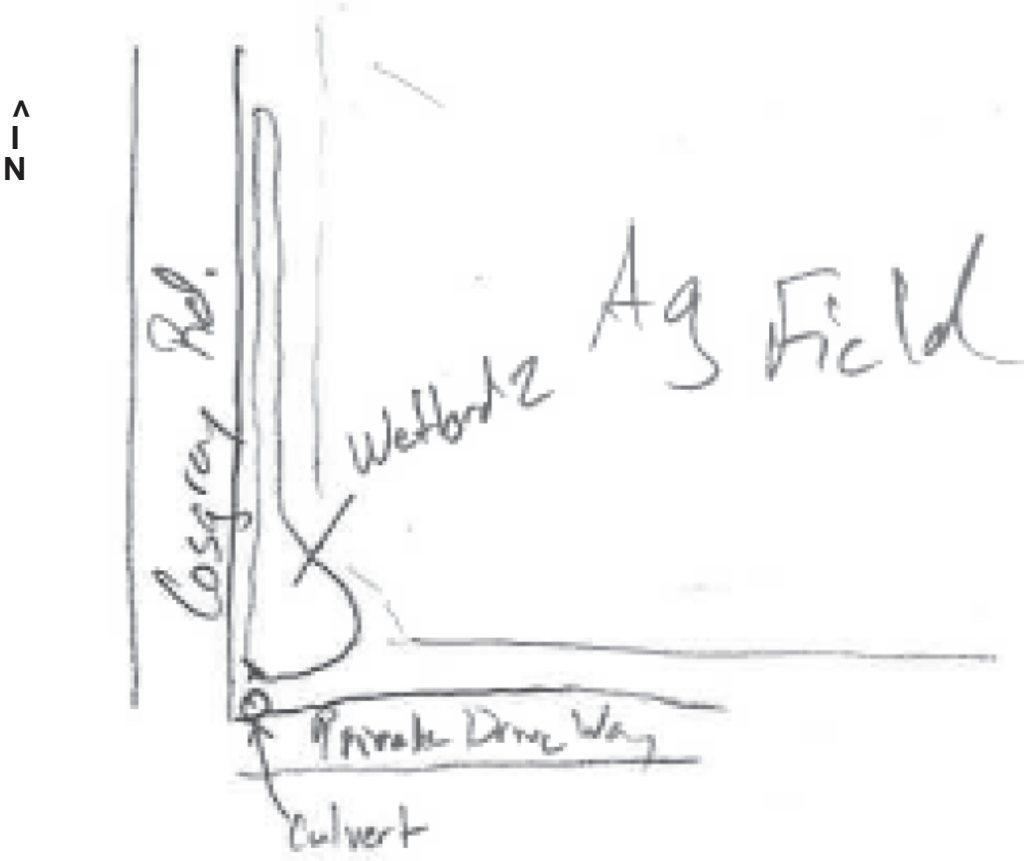
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual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

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



## Background Information

<b>Name:</b>	Michelle Kearns		
<b>Date:</b>	4/29/20		
<b>Affiliation:</b>	Stantec Consulting Services Inc		
<b>Address:</b>	1500 Lake Shore Drive, Columbus, Ohio 43204		
<b>Phone Number:</b>	614-486-4383		
<b>e-mail address:</b>	michelle.kearns@stantec.com		
<b>Name of Wetland:</b>	Wetland 2		
<b>Vegetation Communit(ies):</b>	PEM		
<b>HGM Class(es):</b>	Depression		
<b>Location of Wetland:</b> include map, address, north arrow, landmarks, distances, roads, etc.			
Lat/Long or UTM Coordinate	40.102143, -83.189871		
USGS Quad Name	Hilliard		
County	Franklin		
Township	Washington		
Section and Subsection			
Hydrologic Unit Code	050600011203		
Site Visit	4/29/20		
National Wetland Inventory Map	Yes		
Ohio Wetland Inventory Map	No		
Soil Survey	Franklin County Soil Survey		
Delineation report/map	Ecological Report: Figure 2		

Name of Wetland: Wetland 2	
Wetland Size (acres, hectares): 0.02ac.	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 14	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

Michelle Kearns

4/29/20

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

**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

Michelle Kearns

4/29/20

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

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

**Table 1. Characteristic plant species.**

<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>Oak Opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum 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.**



<b>Site:</b> Wetland 2	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 4/29/20
------------------------	----------------------------------	----------------------

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)

1	1
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)

7	8
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	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input checked="" type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

7	15
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	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input checked="" type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

15
subtotal this page

<b>Site:</b> Wetland 2	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 4/29/20
------------------------	----------------------------------	----------------------

15

subtotal first page

0

15

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

14

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

14

**End of Quantitative Rating. Complete Categorization Worksheets.**

# ORAM Summary Worksheet

Wetland 2

Michelle Kearns

4/29/20

		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	1	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	-1	
	TOTAL SCORE	14	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.



## Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES <input type="checkbox"/>  Wetland is categorized as a Category 3 wetland	NO <input checked="" type="checkbox"/>  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 <input type="checkbox"/>  Wetland should be evaluated for possible Category 3 status	NO <input checked="" type="checkbox"/>  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 <input type="checkbox"/>  Wetland is categorized as a Category 1 wetland	NO <input checked="" type="checkbox"/>  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 <input checked="" type="checkbox"/>  Wetland is assigned to the appropriate category based on the scoring range	NO <input type="checkbox"/>  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 <input type="checkbox"/>  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO <input checked="" type="checkbox"/>  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</i> OR <i>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 <input type="checkbox"/>  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO <input checked="" type="checkbox"/>  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.

<b>Final Category</b>			
<b>Choose one</b>	<b>Category 1</b>	<b>Category 2</b>	<b>Category 3</b>
Category 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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

### Instructions

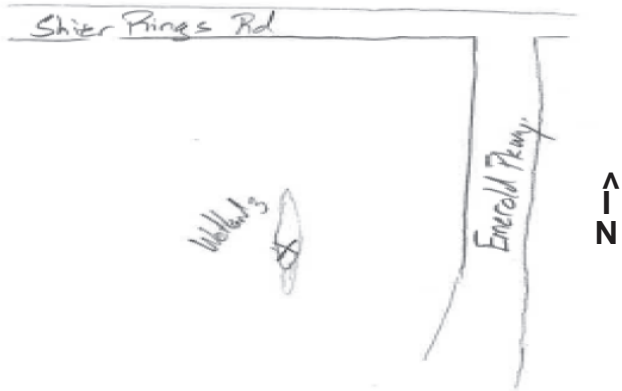
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

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

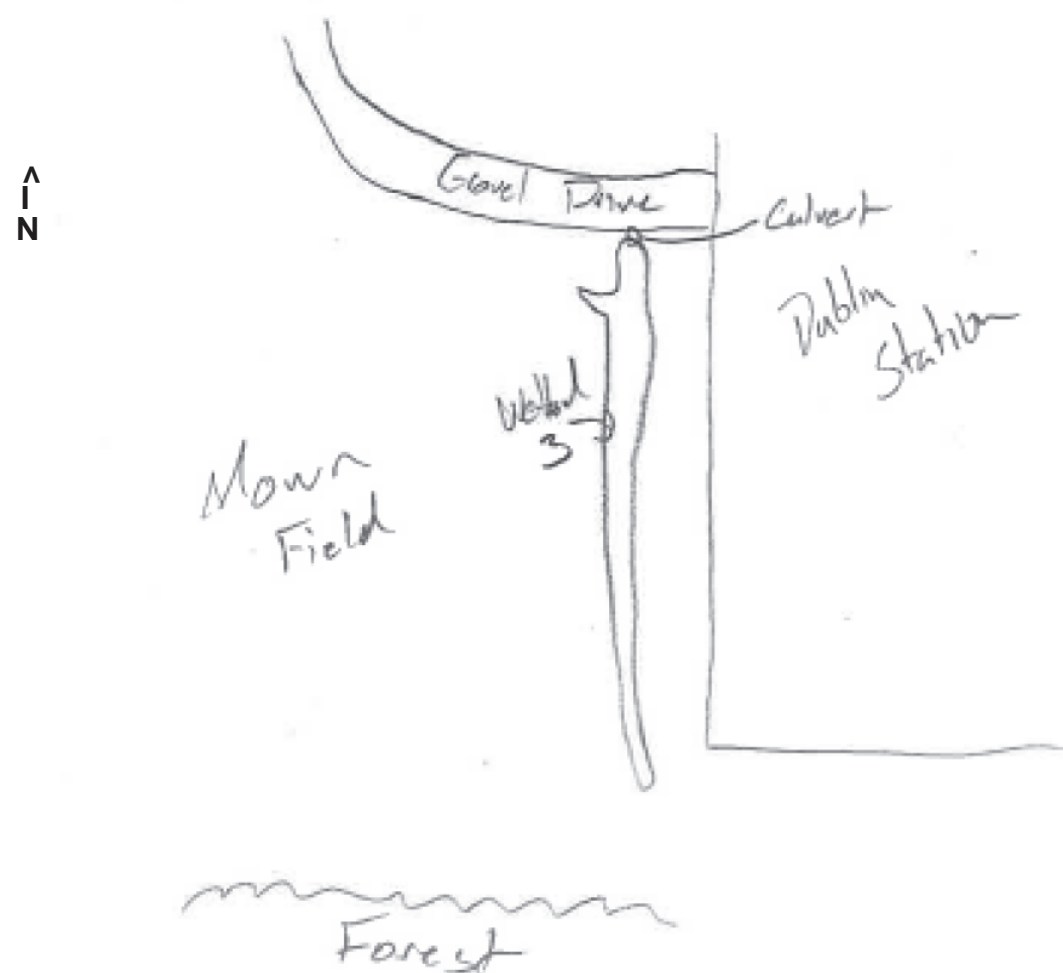
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual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

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

## Background Information

<b>Name:</b>	Michelle Kearns		
<b>Date:</b>	05/01/20		
<b>Affiliation:</b>	Stantec Consulting Services Inc		
<b>Address:</b>	1500 Lake Shore Drive, Columbus, Ohio 43204		
<b>Phone Number:</b>	614-486-4383		
<b>e-mail address:</b>	michelle.kearns@stantec.com		
<b>Name of Wetland:</b>	Wetland 3		
<b>Vegetation Communit(ies):</b>	PEM		
<b>HGM Class(es):</b>	Depression		
<b>Location of Wetland:</b>	include map, address, north arrow, landmarks, distances, roads, etc.		
			
Lat/Long or UTM Coordinate	40.093467, -83.143229		
USGS Quad Name	Hilliard		
County	Franklin		
Township	Washington		
Section and Subsection			
Hydrologic Unit Code	050600011204		
Site Visit	5/1/20		
National Wetland Inventory Map	Yes		
Ohio Wetland Inventory Map	No		
Soil Survey	Franklin County Soil Survey		
Delineation report/map	Ecological Report: Figure 2		



Name of Wetland: Wetland 3	
Wetland Size (acres, hectares): 0.01 ac.	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 16	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

Michelle Kearns

05/01/20

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

**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

Michelle Kearns

05/01/20

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



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

**Table 1. Characteristic plant species.**

<b>invasive/exotic spp</b>	<b>fen species</b>	<b>bog species</b>	<b>Oak Opening species</b>	<b>wet prairie species</b>
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum 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.**

<b>Site:</b> Wetland 3	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 05/01/20
------------------------	----------------------------------	-----------------------

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)

3	3
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)

7	10
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	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

7	17
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	
<input checked="" type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

17
subtotal this page



<b>Site:</b> Wetland 3	<b>Rater(s):</b> Michelle Kearns	<b>Date:</b> 05/01/20
------------------------	----------------------------------	-----------------------

17

subtotal first page

0

17

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

16

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

16

**End of Quantitative Rating. Complete Categorization Worksheets.**



## 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 <input type="checkbox"/>  Wetland is categorized as a Category 3 wetland	NO <input checked="" type="checkbox"/>  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 <input type="checkbox"/>  Wetland should be evaluated for possible Category 3 status	NO <input checked="" type="checkbox"/>  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 <input type="checkbox"/>  Wetland is categorized as a Category 1 wetland	NO <input checked="" type="checkbox"/>  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 <input checked="" type="checkbox"/>  Wetland is assigned to the appropriate category based on the scoring range	NO <input type="checkbox"/>  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 <input type="checkbox"/>  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO <input checked="" type="checkbox"/>  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</i> OR <i>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 <input type="checkbox"/>  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO <input checked="" type="checkbox"/>  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.

<b>Final Category</b>			
<b>Choose one</b>	<b>Category 1</b>	<b>Category 2</b>	<b>Category 3</b>
Category 1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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



# LETTER OF NOTIFICATION FOR AMLIN-DUBLIN 138 KV TRANSMISSION LINE PROJECT

May 26, 2020

## **Appendix F** 2017 Agency Correspondence



# Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

## Office of Real Estate

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

November 6, 2017

Mia Hall  
Civil & Environmental Consultants, Inc.  
250 Old Wilson Bridge road, Suite 250  
Worthington, Ohio 43085

**Re:** 17-673; ODNR Environmental Review Request, Amlin - Dublin 138Kv Transmission Line, CEC Project 172-616

**Project:** The proposed project involves the construction of the Amlin-Dublin 138 kV transmission line.

**Location:** The proposed project is located in the City of Dublin, 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 no records at or within a one-mile radius of the project area.

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

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

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

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

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

The project is within the range of 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 of sufficient size, 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. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact these or other aquatic 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](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

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

John Kessler  
ODNR Office of Real Estate  
2045 Morse Road, Building E-2  
Columbus, Ohio 43229-6693  
John.Kessler@dnr.state.oh.us

**From:** susan\_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>  
**Sent:** Monday, September 18, 2017 1:42 PM  
**To:** Hall, Mia; Geho, Robert  
**Cc:** nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us  
**Subject:** CEC No. 172-616 - AEP Amlin-Dublin 138 kV Transmission Line Project, 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# 03E15000-2017-TA-1938

Dear Ms. Hall,

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  $\geq 3$  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  $\geq 3$  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  $\geq 3$  inches dbh cannot be avoided, we recommend that removal of any trees  $\geq 3$  inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern 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.

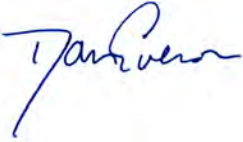
Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical 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](mailto: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](mailto:ohio@fws.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson". The signature is fluid and cursive, with the first name "Dan" being more prominent than the last name "Everson".

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

**This foregoing document was electronically filed with the Public Utilities  
Commission of Ohio Docketing Information System on**

**11/18/2021 2:27:41 PM**

**in**

**Case No(s). 21-1114-EL-BLN**

Summary: Notice Letter of Notification electronically filed by Hector Garcia-Santana  
on behalf of AEP Ohio Transmission Company, Inc.