Letter of Notification
Astor – East Broad 138 kV Transmission Line Rebuild Project

PUCO Case No. 24-0732-EL-BLN

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

Submitted by:
Ohio Power Company

July 26, 2024

Letter of Notification

Astor-East Broad 138 kV Transmission Line Rebuild Project

4906-6-05

Ohio Power Company (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

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.

The Company proposes the Astor-East Broad Street 138 kilovolt (kV) Transmission Line Rebuild Project ("Project") in Truro Township, Franklin County, Ohio. The Project involves rebuilding approximately 2.7 miles of double-circuit 138 kV transmission line, replacing wood monopoles with steel monopoles, between the Company's existing East Broad Street Substation and the Astor Substation.

The Project will primarily be rebuilt within the existing right-of-way, however, supplemental and new easements will be required. The location of the proposed transmission line ("Project Area") is shown in **Exhibit 1** and **Exhibit 2** in **Appendix A**.

The Project meets the requirements for a Letter of Notification (LON) because it is within the types of projects defined by Item (2)(b) of 4906-1-01 *Appendix A Application Requirement Matrix For Electric Power Transmission Lines* of which states:

> *(2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure, for a distance of:*
>
> *(b) More than two miles*

The Project has been assigned PUCO Case No. 24-0732-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 Astor – East Broad Street 138 kV Transmission Line was constructed in the 1950's and 1970's and approximately 87% of the structures are wood; some structures have been replaced with steel, due to their condition. The majority (99%) of conductor was replaced in 1974 and is 50 years old.

There are several open conditions along the transmission line, including rotted poles and missing/broken guying, and ground leads. There are 30 structures with at least one open structural condition reported, which correlates to 55% of the structures on the transmission line. A recent engineering analysis of the line identified the representative structures on the line do not meet current 2017 NESC Grade B loading criteria, AEP structural strength requirements, and American Society of Civil Engineers structural strength requirements. Considering the age and condition of the transmission line, the Company has identified the need to rebuild the asset using modern materials and current engineering and construction standards.

The need and solution for the Project were presented and reviewed with stakeholders at the October 16th, 2020, and May 21st, 2021, PJM Subregional Regional Transmission Expansion Plan (SRRTEP) Western meetings, respectively. The Project was subsequently assigned PJM number s2282. The Project is listed in the Company's 2024 Long Term Forecast Report on page 94 (Table FE-T9, Planned Transmission Lines), see **Appendix B**.

B(3) Project Location

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

The Project is in Truro Township, Franklin County, Ohio. **Exhibit 1** in **Appendix A** shows the Project area on a United States Geological Survey (USGS) Reynoldsburg topographic quadrangle map in relation to existing and proposed facilities. **Exhibit 2** in **Appendix A** identifies the Project on a 2023 aerial imagery.

B(4) Alternatives Considered

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.

Full route alternatives were not considered for the Project, as a majority of the proposed route is located within existing (right-of-way) ROW and the majority of structures will be rebuilt near the existing structure locations. The Project is surrounded by dense urban development, which limited routing alternatives. Additionally, abandoning the existing ROW for an entirely new greenfield route would propose new utility corridor impacts in a densely developed area, which is neither practical nor necessary. Therefore, using the existing ROW for a majority of the Project is the most feasible option from a system planning, engineering,

siting, permitting, and acquisition perspective. Any other alternative would add length to the Project without any additional benefits. The Project will require one 0.3 mile reroute and diversion areas along the existing centerline.

Although the Project will mainly occur within existing ROW, a reroute was identified in the northern portion of the Project, between Whitman Road and the East Broad Street Station, due to proximity to several residential structures and outbuildings along Whitman Road and Revere Road. Slight deviations to the existing centerline would not mitigate all issues identified. Therefore, several conceptual routes were identified in the area. The proposed route turns east along parcel boundaries between to parking lots north of Whitman Road and Revere Road and aligns the proposed route along McNaughten Road. This reroute deviates from the existing alignment for 0.3 miles. The reroute was selected as it minimized the total number of residences within the ROW, required less tree clearing, and allows for easier and more direct access for construction and future maintenance.

Additionally, four diversion areas were identified along the route. One diversion is proposed near the Astor Station on the southern end of the Project area and shifts the proposed route approximately 40 feet off of existing centerline to maximize distance between the Project and nearby residential buildings and to optimize the existing lines design as it enters the Astor Station. Two additional diversions, approximately 15 feet each, are proposed north and south of the Main Street crossing to maximize distance between the centerline and nearby buildings. Finally, a route diversion was identified south of East Broad Street Station (approximately 15 feet) to provide a more direct line route into the station.

No cultural resource or stream impacts are expected. Minimal wetland impacts are expected and are further discussed in Section B(10)(f), below. Based on the information gathered, the Company selected the proposed route as shown on **Exhibit 2** in **Appendix A**, which represents the most suitable location and most appropriate solution for the Project.

B(5) Public Information Program

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

The Company will inform affected property owners, tenants, and local officials about this Project through several methods. Within seven days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of Ohio Administrative Code ("OAC") Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants, contiguous landowners, and any other landowner the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). The Company maintains a website (http://aeptransmission.com/ohio/) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library and select municipal officials in each political subdivision for this Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project area.

B(6) Construction Schedule

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

Construction of the Project is planned to start in November 2024 with a proposed in-service date of March 2026.

B(7) Area Map

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 1 in **Appendix A** provides the proposed Project area on a map of 1:24,000-scale (1-inch equals 2,000 feet) on the Reynoldsburg USGS 7.5-minute topographic map of the Project area. **Exhibit 2** in **Appendix A** shows the Project area on ESRI World Imagery at 1:6,000-scale (1-inch equals 500 feet). The ESRI World Imagery is dated July 2023.

To visit the Project from Columbus, head north on Rosa Parks Way toward East Lynn Street (note that the road name changes to North High Street). Turn right onto East Nationwide Boulevard, then turn left onto US-23 North / North 4th Street. Take the ramp on the right for I-670 East and head toward the Airport, and at Exit 10D, head toward the ramp on the right and follow signs for I-270 South. At Exit 39, head right on the ramp for OH-16 toward Broad Street. Keep left, heading toward Newark, and in 1.1 mile turn right and arrive at East Broad Street Substation at geographic coordinates 39.979513, -82.839510.

B(8) Property Agreements

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

A list of properties for which the Company will need to obtain easements/options is provided in **Appendix C**. Additionally, the form easements also provided in **Appendix C** represent the easement rights the Company would seek if condemnation proceedings were necessary to construct, operate, and maintain these facilities.

B(9) Technical Features

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

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

The transmission line is estimated to include the following:

Voltage:	138 kV
Conductors:	477 kcmil 26/7 Strands Hawk ACSS

Static Wire:	7 #8 Alumoweld
Insulators:	Polymer
ROW Width:	80 ft
Structure Type:	Forty-three (43) direct embed steel pole tangent structures, One (1) guyed dead-end direct embed structure, Four (4) custom dead-end structures with drilled pier foundation, and Eight (8) running corner direct embed structures

B(9)(b) Electric and Magnetic Fields

There are 12 occupied residences or institutions located within 100 feet of the Project. The existing alignment is also within 100 feet of the 12 identified occupied residences.

Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB requirements. Normal Maximum Loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. **It is not anticipated that this circuit of this line would operate at its WN rating in the foreseeable future.**

EMF levels were computed one meter above ground under the line and at the ROW edges (40/40 feet, left/right, of centerline).

Our results calculated using EPRI's EMF Workstation 2015 software are summarized below.

Astor - E. Broad 138 kV					
Condition	**Phase current (A)**	**Phasing Arrangements**	**Sag (feet)**	**Electric Field (kV/m)***	**Magnetic Field (mG)***
(1) Normal Max. Loading^	82.22	A-B-C	33.75	(0.32/1.06/0.42)	(3.05/8.97/2.98)
(2) Emergency Line Loading^^	415.09	A-B-C	44.75	(0.40/2.45/0.40)	(18.31/120.55/20.74)
(3) Winter Conductor Rating^^^	1537.23	A-B-C	33.75	(0.32/1.06/0.42)	(57.02/167.75/55.74)

*EMF levels (left ROW edge/maximum/right ROW edge) computed one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and 1.0 P.U. Voltages. ROW width is 40 feet (left) and 40 feet (right) of centerline, respectively.

^Peak line flow expected with all system facilities in service.
^^Maximum flow during a critical system contingency
^^^Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions.
For power-frequency EMF, IEEE Standard C95.6TM-2002 recommends the following limits:

	General Public	Controlled Environment
Electric Field Limit (kV/m)	5.0	20.0
Magnetic Field Limit (mG)	9040	27,100

The above EMF levels are well within the limits specified in IEEE Standard C95.6TM-2002. Those limits have been established to "prevent harmful effects in human beings exposed to electromagnetic fields in the frequency range of 0-3 kHz."

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

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

The Company did not consider design alternatives due to EMF and their strength levels. Transmission lines, when energized, generate EMF. Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. However, some people are concerned that EMF has impacts on human health. Due to these concerns, EMF associated with the new circuits was calculated in the table above. The EMF was computed assuming the highest possible EMF values that could exist along the proposed transmission line. Normal daily EMF levels will operate below these maximum load conditions. Based on studies from the National Institutes of Health, the magnetic field (measured in milliGauss, or mG) associated with emergency loading at the highest EMF value for this transmission line, is lower than those associated with normal household appliances like microwaves, electric shavers and hair dryers. For additional information regarding EMF, the National Institute of Health has posted information on their website:

https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

B(9)(c) Project Costs

The estimated capital cost of the project.

The cost estimate for the Project, which is comprised of applicable tangible and capital costs, is approximately $10,500,000 using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the Ohio Power Company FERC formula rate (Attachment H-14 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 in Truro Township, Franklin County, Ohio. Land use observed within the Project area includes dense residential, commercial, and industrial development. Other land uses within the area include the Mount Carmel East Hospital complex west of the East Broad Street Substation, a preschool within a commercial lot east of the route south of East Main Street, and places of worship and private medical clinics along McNaughten Road. The Project is anticipated to require 5.8 acres of tree clearing.

B(10)(b) Agricultural Land Information

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

The project does not cross agricultural land or agricultural districts. The Franklin County Auditor's office was contacted to obtain information about Agricultural District Lands on June 26, 2024, and 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 Phase I Archaeological Investigation and a History Architecture Investigation was conducted in July 2021 and coordinated with the State Historic Preservation Office (SHPO) on September 16, 2021. These investigations did not result in the identification of any archaeological deposits or significant architectural resources within the Project's area of potential effect. There were no historical/architectural resources identified as eligible or potentially eligible for inclusion on the National Register of Historic Places. The SHPO responded on October 15, 2021, and agreed that the Project as proposed will have no effect on historic properties. Therefore, no further coordination with the SHPO is necessary. SHPO coordination letter is provided in **Appendix D**.

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

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

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction of storm water discharges under General Permit OHC00006. The Company will also coordinate storm water permitting needs with local government agencies as necessary. The Company will implement and maintain best management practices as outlined in the project-specific Stormwater Pollution Prevention Plan to minimize erosion and sediment runoff to protect surface water quality during storm events.

The Company's consultant conducted a stream and wetland delineation survey within the Project area, provided in **Appendix E,** and identified five wetlands, six streams, and one ditch. No new impacts to streams are anticipated and wetland fill is anticipated to be less than 0.1 acre., therefore, the Project meets the conditions of the Nationwide Permit 57 and notification is not required to the Army Corps of Engineers.

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Numbers 39159C0390D (effective 2008-12-16) and 39159C0480D (effective 2008-12-16), the Project is not within the boundaries of any 100-year floodplains or floodways and therefore will not require floodplain permitting.

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

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

Coordination letters were sent to the USFWS and ODNR-DOW. The USFWS response was received on June 11, 2021 and ODNR-DOW's response was received on August 10, 2021. These agencies were provided an update regarding the Project and responses were received on June 26, 2024 from ODNR-DOW and June 5, 2024 from USFWS. Copies of the agencies' correspondence letters are provided in **Appendix D.**

Based on consultation from the USFWS, the Project area lies within range of two federally listed species: the endangered Indiana bat (*Myotis sodalis*) and the threatened northern long-eared bat (*Myotis septentrionalis*). The project also overlaps with the range of federally proposed tricolored bat (Perimyotis subflavus). The USFWS recommends avoiding tree removal whenever possible. If no caves or abandoned mines are present and trees greater than or equal to 3 inches diameter at breast height (dbh) cannot be avoided, USFWS recommends removal only occur between October 1 and March 31. The Company

anticipates the need to clear approximately 5.8 acres of trees for the Project, which will occur within the USFWS recommendation for seasonal tree clearing between October 1 to March 31.

According to the ODNR-DOW response letter, the Natural Heritage Database has record of six state listed species within one mile of the Project centerline. These species include the state species of concern Tippecanoe darter (*Etheostoma tippecanoe*), Elktoe (*Alasmidonta marginata*), Wavy-rayed lampmussel (*Lampsilis fasciola*), black sandshell (Ligumia recta), Kidneyshell (*Ptychobranchus fasciolaris*), and Deertoe (*Truncilla truncata*). However, there will be no in-stream work and these species are not anticipated to be impacted.

ODNR-DOW stated that the Project is within the range of the Indiana bat (*Myotis sodalis*), the northern long-eared bat (*Myotis septentrionalis*), the little brown bat (*Myotis lucifugus*), and the tricolored bat (*Perimyotis subflavus*). If trees must be cut, ODNR-DOW recommended cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices holes or cavities, as well as trees with diameter at breast height (dbh) ≥ 20 inches. ODNR-DOW also recommended that a desktop habitat assessment be conducted, followed by a field assessment if needed, to determine if there are potential hibernaculum(a) present within 0.25 miles of the Project area. The Company's consultant completed a desktop habitat assessment in accordance with the 2023 Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines. No active or abandoned mines, areas with karst geology, or areas with karst features were identified within 0.25-mile buffer of the Project area. The Company anticipates the need to clear trees , which will be conducted between October 1 and March 31.

According to the ODNR-DOW response letter, the Project is within the range of thirteen protected mussel species: the federally endangered snuffbox (*Epioblasma triquetra*), federally endangered northern rifffleshell (*Epioblasma torulosa rangiana*), federally endangered clubshell (*Pleurobema clava*), federally endangered rayed bean (*Villosa fabalis*), the federally endangered purple cat's paw (*Epioblasma o. obliquata*), federally threatened rabbitsfoot (*Quadrula cylindrica cylindrica*), state endangered elephant-ear (*Elliptio crassidens crassidens*), Long solid (*Fusconaia maculata maculate*), Ohio pigtoe (*Pleurobema cordatum*), pocketbook (*Lampsilis ovata*), washboard (*Megalonaias nervosa*), and state threatened pondhorn (*Uniomerus tetralasmus*), and Salamander Mussel (*Simpsonaias ambigua*). Due to the location and that there is no in-water work proposed in a perennial stream, ODNR-DOW stated that this Project is not likely to impact these mussel species.

According to the ODNR-DOW response letter, the Project is within the range of nine protected fish species: the state endangered goldeye (*Hiodon alosoides*), the state endangered Iowa darter (*Etheostoma exile*), the state endangered popeye shiner (*Notropis ariommus*), the state endangered northern brook lamprey (*Ichthyomyzon fossor*), the state endangered spotted darter (*Etheostoma maculatum*), the state endangered shortnose gar (*Lepisosteus platostomus*), the state endangered tonguetied minnow (*Exoglossum laurae*), the state threatened lake chubsucker (*Erimyzon sucetta*), and the state threatened paddlefish (*Polyodon spathula*).The ODNR-DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. No in-water work is proposed in a perennial stream and therefore, the Project is not likely to impact these aquatic species.

B(10)(f) Areas of Ecological Concern

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

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

The Company's consultant conducted a wetland and stream delineation survey in the Project study area and prepared an Ecological Survey Report, which is provided in **Appendix E**. The survey of the Project area identified five wetlands, six streams, and one ditch. Project related impacts to wetlands will total less than 0.1 acre. Streams will either be avoided by aerially spanning or bridged (no work below the ordinary highwater mark).

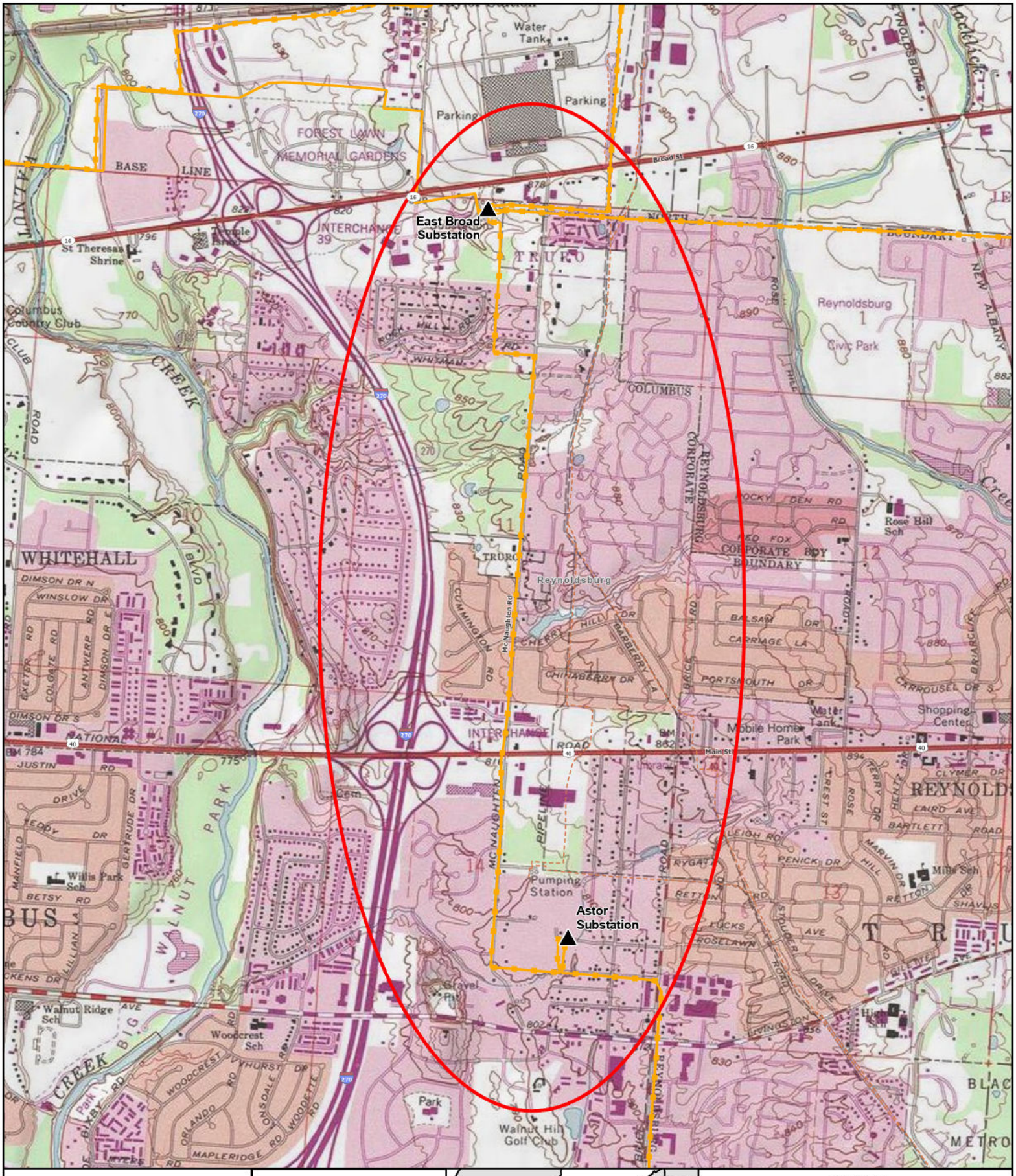
Based on the FEMA FIRM Map Numbers 39159C0390D (effective 2008-12-16) and 39159C0480D (effective 2008-12-16), the Project is not within the boundaries of 100-year floodplains or floodways.

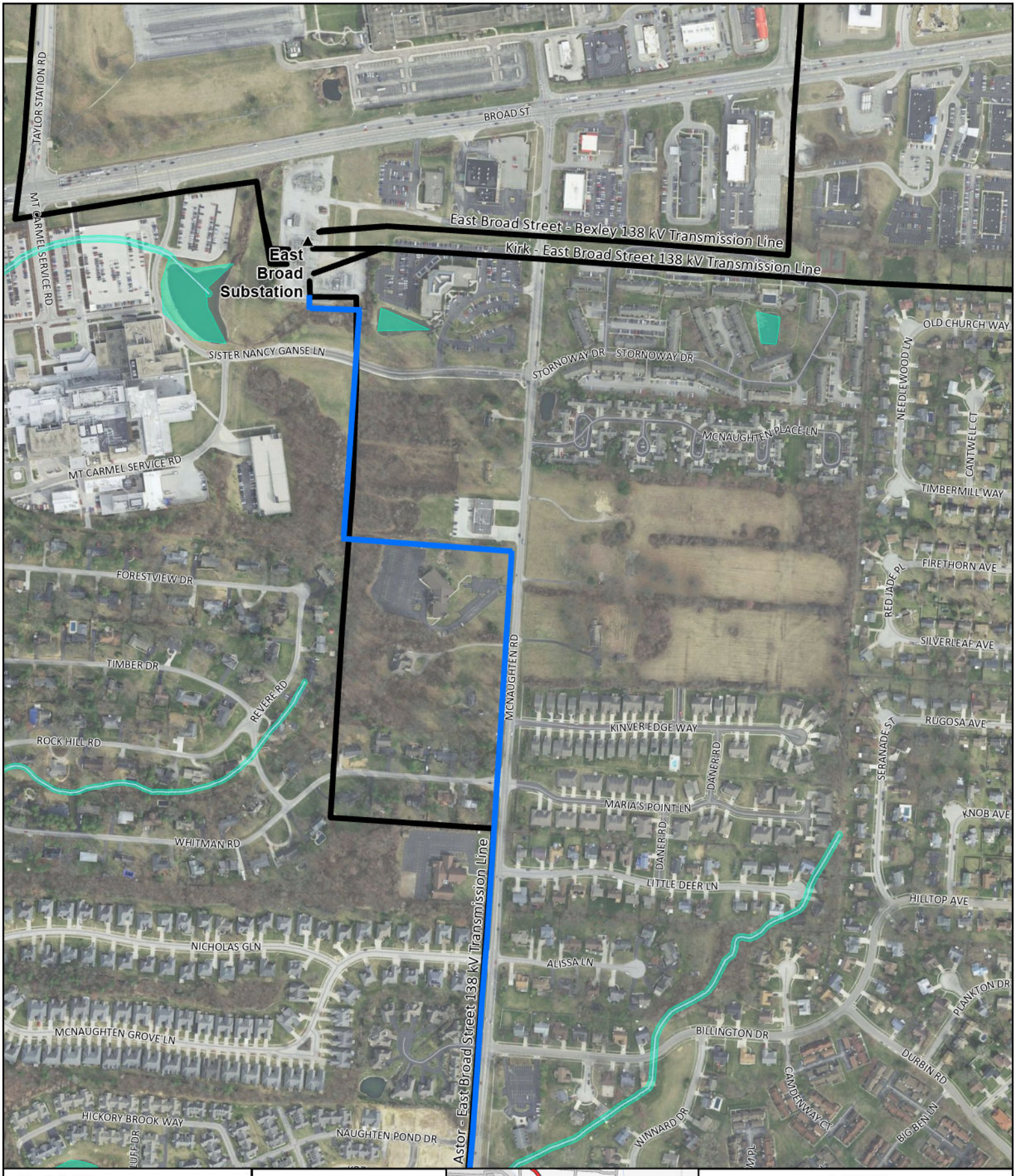
B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps


East Broad Substation
Astor Substation
Substation
Existing 40 kV Transmission Line
Existing 138 kV Transmission Line
Project Area
USGS 24k Topo Map Boundaries
Base Map Source:
USGS Topographic Map
Reynoldsburg Quadrangle
Coordinate System
State Plane Ohio South
FIPS 3401 (US Feet)
Datum: NAD 1983
Scale: 1:24,000
7/16/2024
N
Exhibit 1
Topographic Overview
AEP OHIO
An AEP Company
Astor-East Broad Street 138 kV
Transmission Line Rebuild Project
Franklin County, OH
0
2,000
4,000
Feet



- Substation
- Proposed Astor-East Broad 138 kV Transmission Line Rebuild
- Existing Transmission Line
- Road
- NHD Stream
- NWI Wetland

Base Map Source:
Franklin County
Aerial Imagery 2023

Coordinate System
State Plane Ohio South
FIPS 3401 (US Feet)
Datum: NAD 1983
Scale: 1:6,000

N

7/16/2024

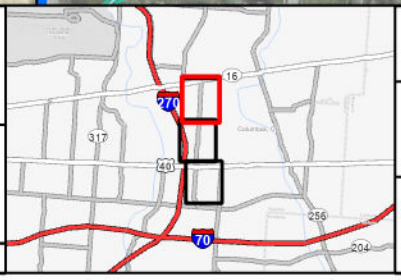
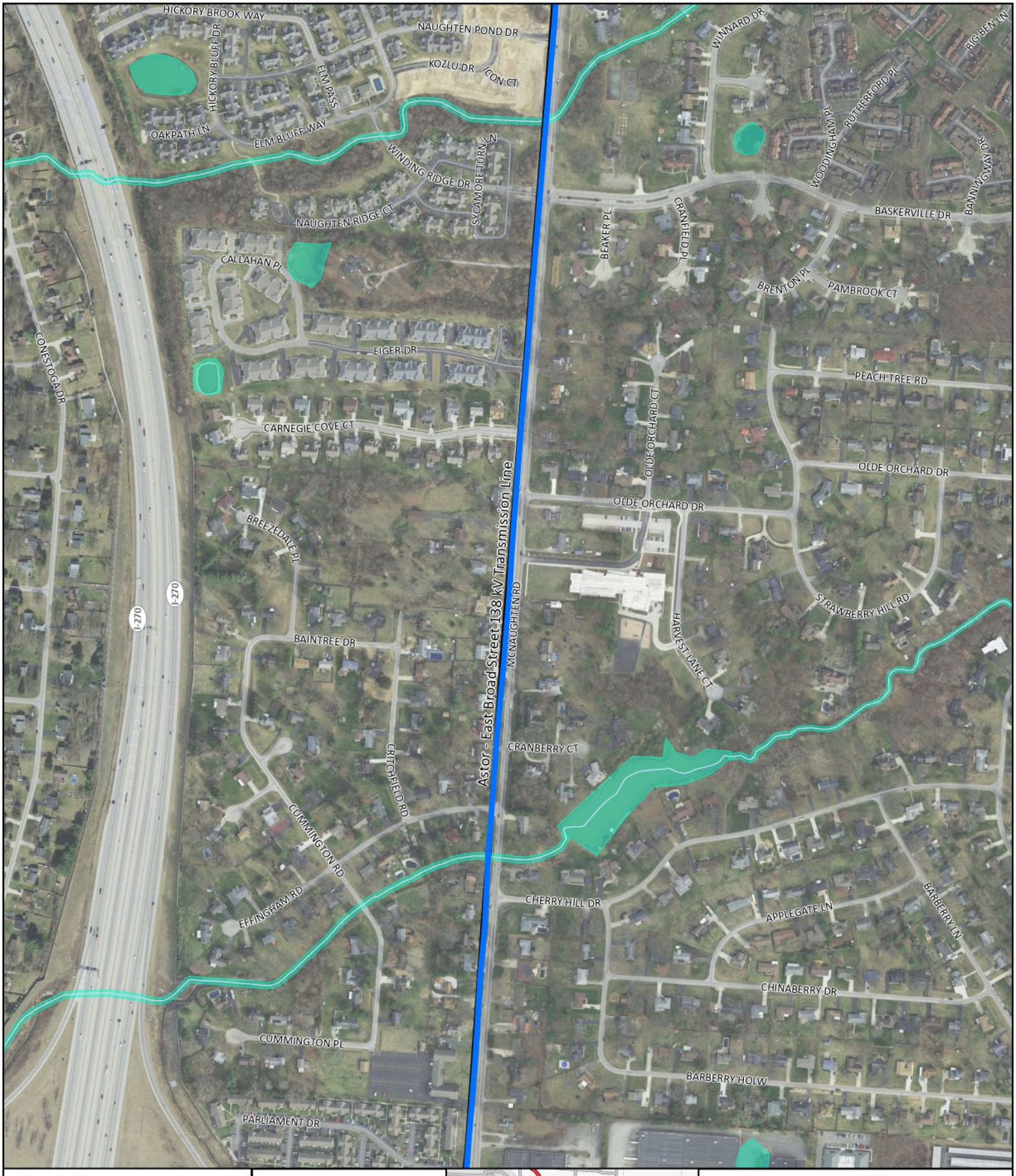


Exhibit 2
Aerial Overview

AEP OHIO
An AEP Company

Astor-East Broad Street 138 kV Transmission Line Rebuild Project
Franklin County, OH

0 500 1,000
Feet



- Substation
- Proposed Astor-East Broad 138 kV Transmission Line Rebuild
- Existing Transmission Line
- Road
- NHD Stream
- NWI Wetland

Base Map Source:
Franklin County
Aerial Imagery 2023

Coordinate System
State Plane Ohio South
FIPS 3401 (US Feet)
Datum: NAD 1983
Scale: 1:6,000

N

7/16/2024

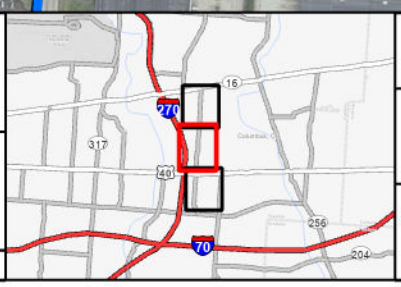
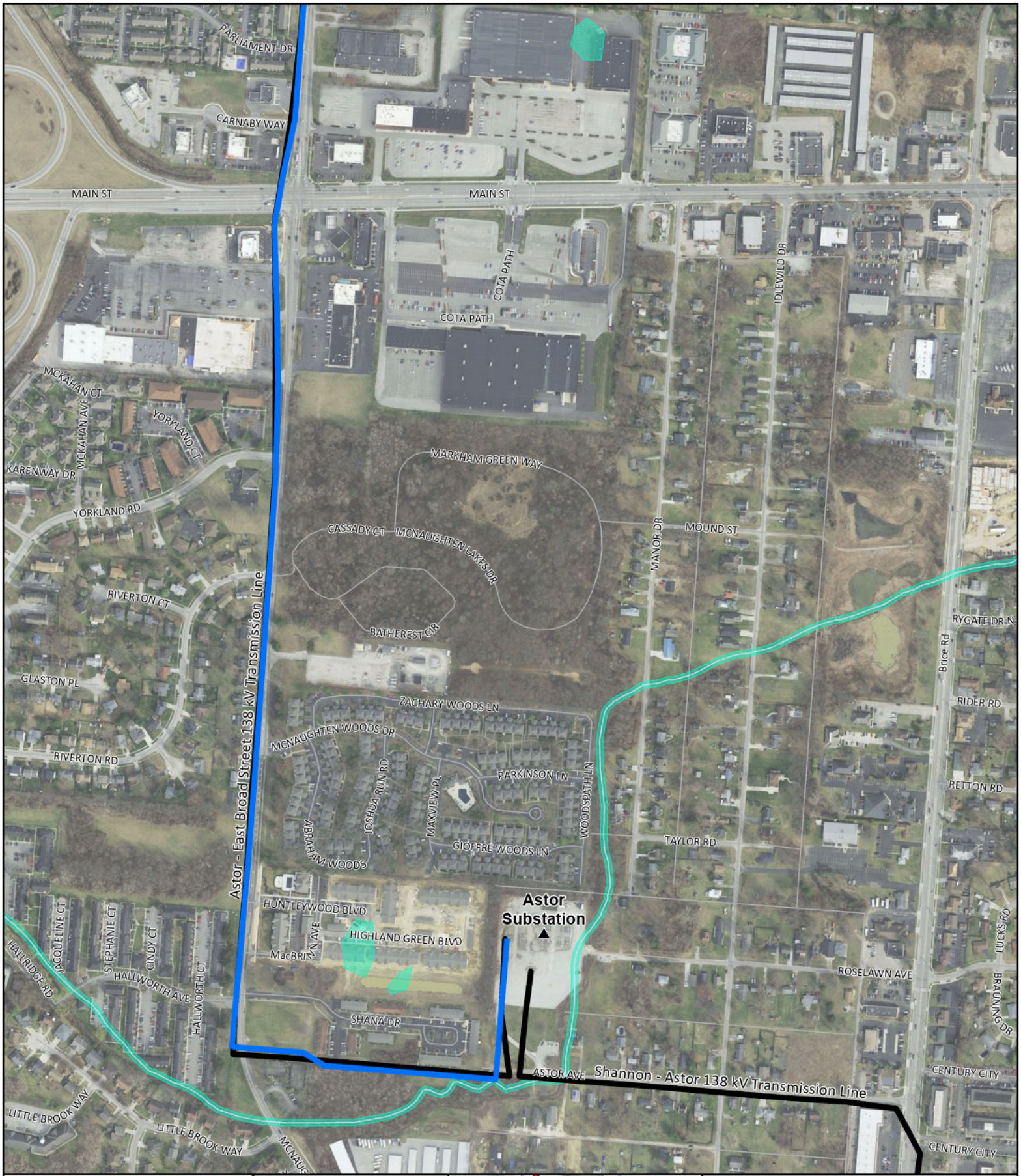


Exhibit 2
Aerial Overview

AEP OHIO
An AEP Company

Astor-East Broad Street 138 kV Transmission Line Rebuild Project
Franklin County, OH

0 500 1,000
Feet



▲ Substation

Proposed Astor-East Broad 138 kV Transmission Line Rebuild

Existing Transmission Line

Road

NHD Stream

NWI Wetland

Base Map Source:
Franklin County
Aerial Imagery 2023

Coordinate System
State Plane Ohio South
FIPS 3401 (US Feet)
Datum: NAD 1983
Scale: 1:6,000

N

7/16/2024

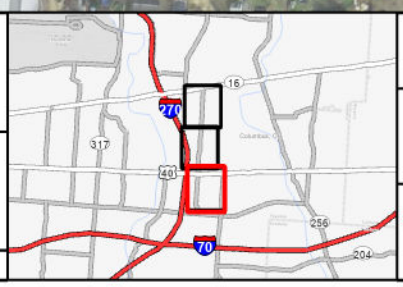


Exhibit 2
Aerial Overview

AEP OHIO
An AEP Company

Astor-East Broad Street 138 kV Transmission Line Rebuild Project
Franklin County, OH

0 500 1,000

Feet

Appendix B Long Term Forecast Report and PJM Solution Submittal

12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Risk of operational/reliability issues
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	West Lancaster - East Lancaster - Ralston (b3276), TP2020252
2	**POINTS OF ORIGIN AND TERMINATION**	West Lancaster, East Lancaster, Ralson INTERMEDIATE STATION - Lancaster Junction, Memorial Drive
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	9.7 mi / 60 ft / 1 circuit (proposed only 2.3 miles)
4	**VOLTAGE: DESIGN / OPERATE**	69 kV / 69 kV
5	**APPLICATION FOR CERTIFICATE:**	N/A
6	**CONSTRUCTION:**	2024-2025
7	**CAPITAL INVESTMENT:**	$4.0M
8	**PLANNED SUBSTATION:**	N/A
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Rebuild of copper sections of existing line to solve criteria violations
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Risk of operational/reliability issues
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	East Wheelerburg - Texas Eastern (TP2015095)
2	**POINTS OF ORIGIN AND TERMINATION**	East Wheelerburg - Texas Eastern INTERMEDIATE STATIONS - Sadiq SW
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	2 miles / N/A / 1 circuit (0.2 miles of line work)
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2025 - 2026
7	**CAPITAL INVESTMENT:**	$0.35M
8	**PLANNED SUBSTATION:**	Sadiq SW
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	To address the identified thermal violations
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Increased risk of equipment failure, reliability, and operational issues
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	Astor - East Broad (s2282 TP2020024)
2	**POINTS OF ORIGIN AND TERMINATION**	Astor - East Broad INTERMEDIATE STATIONS - N/A
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	2.75 miles / 100 ft. / 1 circuit
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2024 - 2025
7	**CAPITAL INVESTMENT:**	$5.9M
8	**PLANNED SUBSTATION:**	N/A
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Rebuild of existing 138 kV line
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Increased risk of equipment failure, reliability, and operational issues
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	Lick - Firebrick 69kV (s2576 TP2019248)
2	**POINTS OF ORIGIN AND TERMINATION**	Lick - Firebrick INTERMEDIATE STATIONS - Seel & Echo Valley Switch
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	16.6 miles / 50 ft. / 1 circuit (8.3 miles of line work)
4	**VOLTAGE: DESIGN / OPERATE**	69 kV / 69 kV
5	**APPLICATION FOR CERTIFICATE:**	N/A
6	**CONSTRUCTION:**	2024-2025
7	**CAPITAL INVESTMENT:**	$20.5M
8	**PLANNED SUBSTATION:**	Seel
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Install shield wire on line

Appendix C Easement List and Form

LETTER OF NOTIFICATION ASTOR – EAST BROAD 138 KV TRANSMISSION LINE REBUILD PROJECT

EASEMENT LIST

Property Parcel Number	Agreement Type	Easement Agreement Obtained
550-155999-00	Temporary Easement	Yes
550-155997-00	New Easement	Yes
550-155996-00	New Easement	Yes
550-155900-00	Supplemental Easement	Yes
550-188933-00	New Easement	Yes
550-156221-00	Supplemental Easement	Yes
010-129717-00	Supplemental Easement	Yes
010-016622-00	Supplemental Easement	Yes
010-129750-00	New Easement	Yes
010-129706-00	New Easement	Yes
010-129694-00	Supplemental Easement	Yes
010-137491-00	New Easement	Yes
010-137485-00	New Easement	Yes
010-137490-00	New Easement	Yes
010-137492-00	New Easement	Yes
010-139058-00	New Easement	Yes
010-139057-00	New Easement	Yes
010-139056-00	New Easement	Yes
010-139055-00	New Easement	Yes
010-139054-00	New Easement	Yes
010-139004-00	New Easement	Yes
010-139003-00	New Easement	Yes
010-139002-00	New Easement	Yes
010-139001-00	New Easement	Yes
010-139000-00	New Easement	Yes
010-138999-00	New Easement	Yes
010-138998-00	New Easement	Yes
261-148528-00	New Easement	Yes
261-148525-00	New Easement	Yes
261-148527-00	New Easement	Yes
261-148522-00	New Easement	Yes
010-272008-00	New Easement	Yes
010-271983-00	New Easement	Yes
HOA1247149	New Easement	Yes
010-109379-00	New Easement	Yes
HOA3420091	New Easement	Yes

010-100720-00	New Easement	Yes
010-271631-00	New Easement	Yes
010-271630-00	New Easement	Yes
010-271642-00	New Easement	Yes
010-271639-00	New Easement	Yes
010-246515-00	New Easement	Yes
010-246466-00	New Easement	Yes
010-109391-00	New Easement	Yes
010-125487-00	New Easement	Yes
010-125486-00	New Easement	Yes
550-262379-00	New Easement	Yes
550-266684-00	New Easement	Yes
550-103923-00	New Easement	Yes
550-103922-00	New Easement	Yes
550-156225-00	New Easement	No
010-001762-00	Supplemental Easement	No
010-002878-00	New Easement	No

Line Name: Astor-East Broad
Line No.: TLN160:00422
Easement No.:

EASEMENT AND RIGHT OF WAY

On this _____ day of _____, 202__, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the covenants hereinafter set forth, __[landowner name and marital status]__, whose address is _____ ("Grantor"), whether one or more persons, hereby grants, sells, conveys, and warrants to Ohio Power Company, an Ohio corporation, a unit of American Electric Power, whose principal business address is 1 Riverside Plaza, Columbus, Ohio 43215 ("AEP"), and its successors and affiliates, a permanent easement and right of way ("Easement") for a single electric transmission line, not to exceed 138 kV, and for internal communication purposes related to the transmission of electricity (the "Transmission Line"), being, in, on, over, under, through and across the following described lands of Grantor, situated in the State of Ohio, County of Union, and Township of Jerome and being a part of ___[abbreviated legal description]____ ("Grantor's Property").

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

Grantor claims title by ___[name of vesting instrument]___ dated _____ from ___[name of first grantor]___, recorded on __[date]__ at ___[record volume, page]___ in the Union County Recorder's Office.

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

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

GRANTOR FURTHER GRANTS AEP THE FOLLOWING RIGHTS:

The right, now or in the future, to construct, reconstruct, operate, maintain, alter, improve, inspect, patrol, protect, repair, remove, replace, upgrade and relocate within the Easement Area, structures and appurtenant equipment necessary for the Transmission Line.

The right, in AEP's discretion, now or in the future, to cut down, trim or remove, and otherwise control, any and all trees, overhanging branches, vegetation or brush situated within the Easement Area and any temporary access roads or temporary workspaces identified on Exhibit "A" outside the Easement Area. Provided, however, that AEP shall not use herbicides or similar products for these purposes on any portions of the Grantor's Property maintained for residential or agricultural use. AEP shall also have the right to cut down, trim or remove trees situated on Grantor's Property which adjoin the Easement Area within the Tree Protection Zone when in the reasonable opinion of AEP those trees are dead, dying, diseased, leaning, or structurally defective and may endanger the safety of, or interfere with the construction, operation or maintenance of AEP's facilities or

ingress or egress to, from or along the Easement Area. The Tree Protection Zone extends eighty feet on all sides of the Easement Area depicted in Exhibit A.

AEP shall also have the right of reasonable ingress and egress over, across and upon the Easement Area only, unless additional access routes are depicted in the attached Exhibit A. Provided, however, that in the event access over, across and upon the Easement Area – and access routes, if any, shown in Exhibit A – shall become blocked or otherwise rendered unsafe or hazardous for use, AEP may temporarily access the Easement Area from other points across Grantor's Property, so long as that access is both reasonable and limited to the duration of the interference or safety hazard. AEP shall return the access area to its preexisting condition or pay damages to Grantor.

AEP shall also have the right to use temporary workspaces and temporary access roads outside the Easement Area, if any are shown on Exhibit A, in connection with its initial construction of the Transmission Line. AEP may shift the location of such temporary workspaces, if any, up to twenty (20) feet in any direction, and also shift the location of such temporary access roads, if any, up to twenty (20) feet in any direction, as field conditions or other requirements dictate. Upon completion of the overall Transmission Line project, but in no event later than two (2) years following the start of construction on Grantor's Property, AEP shall remove its equipment from all such temporary workspaces and temporary access roads outside the Easement Area, and AEP's temporary rights outside of the Easement Area shall automatically cease, terminate and revert to Grantor. AEP shall return any such areas to their preexisting condition or pay damages to Grantor as soon as practicable.

THIS GRANT IS SUBJECT TO THE FOLLOWING CONDITIONS:

Grantor reserves the right to cultivate annual crops, pasture, construct fences (provided gates are installed that adequately provide AEP the access rights conveyed herein) and roads or otherwise use Grantor's Property encumbered by this Easement in any way not inconsistent with the rights herein granted. In no event, however, shall Grantor, its heirs, successors, affiliates and assigns plant or cultivate any trees or place, construct, install, erect or permit any temporary or permanent building, structure, improvement or obstruction including but not limited to, storage tanks, billboards, signs, sheds, dumpsters, light poles, water impoundments, above ground irrigation systems, swimming pools or wells, or permit any alteration of the ground elevation, over, or within the Easement Area. AEP may, at Grantor's cost, remove any structure or obstruction if placed within the Easement Area, and may re-grade any alterations of the ground elevation within the Easement Area.

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

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

This instrument contains the complete agreement, expressed or implied between the parties herein

and shall inure to the benefit of and be binding on their respective successors, affiliates, heirs, executors, and administrators.

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

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

IN WITNESS WHEREOF, said Grantor hereunto set their hand(s) and seal(s) as of the last date set forth below.

GRANTOR

SIGNATURE BLOCK FOR A BUSINESS ENTITY / TRUST:

[name of entity/trust & kind of business association identified]

By:_____
Print name:_____
Its Authorized Signer

State of Ohio §
§ SS:
County of Union §

This instrument was acknowledged before me on this _____ day of _____, 202__ by _____, the _____[title]_____ of ___[name of entity/trust]___, a/an ___[state of incorporation and type of entity/trust]____, on behalf of ___[name of entity/trust]___.

_____
Notary

SIGNATURE BLOCK FOR AN INDIVIDUAL:

_____
____[Typed name of individual]____

State of Ohio §
§ SS:
County of Union §

This instrument was acknowledged before me on this _____ day of _____, 202__ by ___[name of individual]____.

_____
Notary

This instrument prepared by Marland Turner, American Electric Power Service Corporation, 1 Riverside Plaza, Columbus, OH 43215 for and on behalf of AEP Ohio Transmission Company, Inc., a unit of American Electric Power.

When recorded return to: American Electric Power – Transmission Right of Way, 8600 Smith's Mill Road, New Albany, OH 43054.

Appendix D Agency Coordination

In reply, refer to
2021-FRA-52628

October 15, 2021

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

RE: Astor-East Broad Street 138kV Transmission Line Rebuild Project, City of Columbus, Franklin County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received September 16, 2021 regarding the proposed Astor-East Broad Street 138kV Transmission Line Rebuild Project, City of Columbus, 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 *Phase I Archaeological Investigations for the Approximately 4.42 km (2.75 mi) Astor-East Broad Street 138kV Transmission Line Rebuild Project in The City of Columbus, Franklin County, Ohio* by Ryan J. Weller (Weller & Associates, Inc., 2021).

A literature review, visual inspection, and shovel probe excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no further archaeological survey is necessary.

The following comments pertain to the *History/Architecture Investigations for the Approximately 4.42 km (2.75 mi) Astor-East Broad Street 138kV Transmission Line Rebuild Project in The City of Columbus, Franklin County, Ohio* by Austin White and Scott McIntosh (Weller & Associates, Inc., 2021).

A literature review and field survey were completed as part of the investigations. A total of seventy-one (71) extant architectural resources were identified within the Area of Potential Effects (APE) during the field survey. It is Weller's recommendation that none of these properties are eligible for inclusion in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendations of eligibility.

The following comments pertain to the *Addendum Cultural Resources Management Investigations for the Astor-East Broad Street 138kV Transmission Line Rebuild Project in Madison Township, Franklin County, Ohio* by Ryan J. Weller (Weller & Associates, Inc., 2021).

A literature review, visual inspection, and shovel probe excavation was completed as part of the investigations. No previously identified archaeological sites are located within the addendum project area and no new archaeological sites were identified during survey. Our office agrees no further archaeological survey is necessary.

A field survey was completed as part of the investigations. No significant architectural resources were identified during the survey for the current areas of investigation.

Based on the information provided, we agree that the project as proposed will have no 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, or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1090130, 1090131

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

June 5, 2024

Project Code: 2023-0089369

Dear Cory Kwolek:

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

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

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

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

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

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

Sincerely,

Erin Knoll
Field Office Supervisor

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

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: 05/23/2024 18:44:52 UTC
Project code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for '1672 AEP Astor - East Broad Street 138 kV Repair Project'

Dear Cory Kwolek:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 23, 2024, for '1672 AEP Astor - East Broad Street 138 kV Repair Project' (here forward, Project). This project has been assigned Project Code 2023-0089369 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Rayed Bean *Villosa fabalis* Endangered
- Round Hickorynut *Obovaria subrotunda* Threatened
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Ohio Ecological Services Field Office and reference Project Code 2023-0089369 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

1672 AEP Astor - East Broad Street 138 kV Repair Project

2. Description

The following description was provided for the project '1672 AEP Astor - East Broad Street 138 kV Repair Project':

> Wetland delineations for an electrical transmission repair project.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.961639149999996,-82.83795247940883,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Environmental Solutions & Innovations, Inc.
Name: Cory Kwolek
Address: 4300 Lynn Road, Suite 205
City: Ravenna
State: OH
Zip: 44266
Email ckwolek@envsi.com
Phone: 9376712103

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: 05/23/2024 18:43:04 UTC
Project Code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

PROJECT SUMMARY

Project Code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project
Project Type: Distribution Line - Maintenance/Modification - Above Ground
Project Description: Wetland delineations for an electrical transmission repair project.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.961639149999996,-82.83795247940883,14z

Counties: Franklin County, Ohio

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Rayed Bean *Villosa fabalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5862	Endangered
Round Hickorynut *Obovaria subrotunda* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9879	Threatened
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency: Environmental Solutions & Innovations, Inc.
Name: Cory Kwolek
Address: 4300 Lynn Road, Suite 205
City: Ravenna
State: OH
Zip: 44266
Email ckwolek@envsi.com
Phone: 9376712103

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

June 26, 2024

Cory Kwolek
Environmental Solutions & Innovations, Inc.
4300 Lynn Road, Suite 205
Ravenna, Ohio 44266

Re: 24-0800_AEP Astor - East Broad Street 138 kV Line Upgrades

Project: The proposed project involves the upgrade of approximately 2.75 miles of existing transmission line, with no tree clearing anticipated.

Location: The proposed project is located in Truro Township, Franklin County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has the following data within one mile of the project area:

Tippecanoe Darter (*Etheostoma tippecanoe*), SC
Elktoe (*Alasmidonta marginata*), SC
Wavy-rayed Lampmussel (*Lampsilis fasciola*), SC
Black Sandshell (*Ligumia recta*), SC
Kidneyshell (*Ptychobranchus fasciolaris*), SC
Deertoe (*Truncilla truncata*), SC

Conservation status abbreviations are as follows: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; U = state status under review; X = presumed extirpated in Ohio; FE = federally endangered, and FT = federally threatened. The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Features searched include locations of rare and endangered plants and animals determined to be of value to the conservation of their species, high quality plant communities, animal breeding assemblages, and outstanding geological features.

The species listed above are not recorded within the boundaries of the specified project area. However, please note that Ohio has not been completely surveyed and we rely on receiving information from many

sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible.

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

The project is within the range of the following listed mussel species.
Federally Endangered
clubshell (*Pleurobema clava*)
rayed bean (*Villosa fabalis*)
northern riffleshell (*Epioblasma torulosa rangiana*)
snuffbox (*Epioblasma triquetra*)
purple cat's paw (*Epioblasma o. obliquata*)

Federally Threatened
rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Endangered
elephant-ear (*Elliptio crassidens crassidens*)
pocketbook (*Lampsilis ovata*)
long solid (*Fusconaia maculata maculate*)
washboard (*Megalonaias nervosa*)
Ohio pigtoe (*Pleurobema cordatum*)

State Threatened
pondhorn (*Uniomerus tetralasmus*)
Salamander Mussel (*Simpsonaias ambigua*)

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the following listed fish species.
State Endangered
goldeye (*Hiodon alosoides*)
shortnose gar (*Lepisosteus platostomus*)
Iowa darter (*Etheostoma exile*)
spotted darter (*Etheostoma maculatum*)
northern brook lamprey (*Ichthyomyzon fossor*)
tonguetied minnow (*Exoglossum laurae*)
popeye shiner (*Notropis ariommus*)

State Threatened
lake chubsucker (*Erimyzon sucetta*)
paddlefish (*Polyodon spathula*)

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

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

Thank you for affording us the opportunity to comment.

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew
Environmental Services Administrator

Appendix E Ecological Survey Report

ADDENDUM: AEP ASTOR—EAST BROAD STREET
138 KV TRANSMISSION LINE UPGRADES PROJECT
TRURO TOWNSHIP
FRANKLIN COUNTY, OHIO

15 July 2024

Prepared for:

AMERICAN ELECTRIC POWER℠

BOUNDLESS ENERGY℠

American Electric Power
8500 Smith's Mill Road
New Albany, OH 43054

Prepared by:

ESI

Environmental Solutions & Innovations, Inc.

4525 Este Avenue
Cincinnati, Ohio 45232
Phone: (513) 451-1777
Fax: (513) 451-3321
Ravenna, OH • Indianapolis, IN • Orlando, FL • Pittsburgh, PA • Teays Valley, WV

TABLE OF CONTENTS

1.0 Introduction

American Electric Power (AEP) retained Environmental Solutions & Innovations, Inc. (ESI) to perform an ecological survey for additional workspace areas along the Astor—East Broad Street 138 kV Transmission Line Upgrade Project in Truro township, Franklin County, Ohio within the project's proposed Area of Investigation (AOI; Appendix A, Figures 1 and 2). ESI initially surveyed aquatic resources along the main route and additional workspaces in July 2021. This report serves as an addendum for subsequent surveys completed within the AOI on 21 May 2024 and outlines review of published resource materials, existing site conditions, updated agency coordination, and results of the field investigation for additional workspace areas within the AOI.

2.0 Methods

2.1 Desktop Evaluation

Prior to visiting the site, available topographic, aerial, soils, flood, and National Wetlands Inventory (NWI) mapping is reviewed to determine onsite areas that may contain aquatic resources. State stream designations, navigability, and other criteria that would determine agency jurisdiction are also reviewed.

2.2 Threatened and Endangered Species

To assist with Endangered Species Act (ESA), Bald and Golden Eagle Protection Act (BGEPA), and Migratory Bird Treaty Act (MBTA) compliance, a project review was requested, and a response was received on 5 June 2024 from U.S. Fish and Wildlife Service (USFWS) Ohio Field Office (Appendix B). To identify potential conflicts with state-listed species and appropriately complete Ohio Rapid Assessment Methods (ORAMs), a request was submitted to Ohio Department of Natural Resources (ODNR) and a response was received on 26 June 2024 (Appendix B).

2.3 Aquatic Resource Delineations

Wetland delineation procedures follow the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0 (USACE 2010), and the 1987 Corps of Engineers Wetland Delineation Manual (USACE 1987). The federally regulated Ordinary High Water Mark (OHWM) of streams is delineated using the USACE Regulatory Guidance Letter 05-05 – Guidance on Ordinary High Water Mark Identification. Each stream is categorized regarding its flow regime as perennial, intermittent, or ephemeral, as defined by the USACE. Delineated aquatic resources are classified according to the Classification of Wetland and Deepwater Habitats of the

United States (Cowardin et al. 1979). Each wetland identified is evaluated consistent with the Ohio Rapid Assessment Method (ORAM, Version 5.0), developed by the Ohio Environmental Protection Agency (OEPA). Streams with drainage areas less than one square mile are evaluated using the field evaluation manual for Ohio's primary headwater habitat streams (OEPA 2020). Aquatic resource boundaries and sample points are surveyed using a GPS with sub-meter accuracy.

3.0 Results

3.1 Desktop Evaluation

3.1.1 Topography and Drainage

The project appears on the Reynoldsburg, Ohio U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Appendix A, Figure 1). The AOI consists of relatively flat, urban terrain with elevations ranging from approximately 798 to 878 feet. The site drains to Big Walnut Creek.

3.1.2 Soil Survey

The Natural Resources Conservation Service (NRCS) maps seven soil series considered hydric within the entire AOI, including additional (21 May 2024) survey areas. The NRCS soil map and hydric soils list is provided in Appendix C.

3.1.3 National Wetlands Inventory

No NWI-mapped resources were identified within the AOI additional workspaces. Note that NWI maps are derived from aerial photo interpretation and are suitable for general planning purposes only; they typically do not show all the wetland or watercourse resources within any given area. All areas were field reviewed.

3.1.4 Aerial Imagery

Aerial mapping from 1984 through 2021 shows the site as dominated by urban and industrial areas. Aerial representation of the site is provided in Appendix A, Figure 2.

3.2 Threatened and Endangered Species

A summary table of state and federally threatened, and endangered species potentially occurring within the AOI is provided in Appendix D.

3.3 Aquatic Resource Delineations

Five wetlands, six streams, and one ditch were identified and delineated/extended within additional workspaces and are summarized in Appendix E. Seven additional upland sample points were also taken to characterize upland conditions.

Representative photographs of new and extended aquatic resources and additional upland sample points are provided in Appendix F. Field data sheets for wetland and upland sample points are provided in Appendix G. The aquatic resource delineation map depicting resource locations is provided in Appendix A, Figure 2.

4.0 Conclusion

Results of desktop review and field investigations completed within the AOI's additional workspaces on 21 May 2024 identified five wetlands, six streams, and one ditch. Seven additional upland sample points were taken to characterize the areas. Temporary or permanent impacts to these resources may require permits from the USACE and/or OEPA.

5.0 Literature Cited

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWSOBS 79/31, December 1979. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 79 pp.

OEPA. 2020. Field methods for evaluating primary headwater streams in Ohio. Version 4.1. Ohio Environmental Protection Agency, Division of Surface Water, Columbus, Ohio. 130 pp.

USACE. 1987. Corps of Engineers Wetlands Delineation Manual. Final Report. Wetlands Research Program Technical Report Y-87-1 (on-line edition), Waterways Experiment Station, Environmental Laboratory, Vicksburg, Mississippi. 143 pp.

USACE. 2010. Regional supplement to the Corps of Engineers wetland delineation manual: Midwest Region (Version 2.0). ERDC/EL TR-10-16, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi. 154 pp.

APPENDIX A
FIGURES

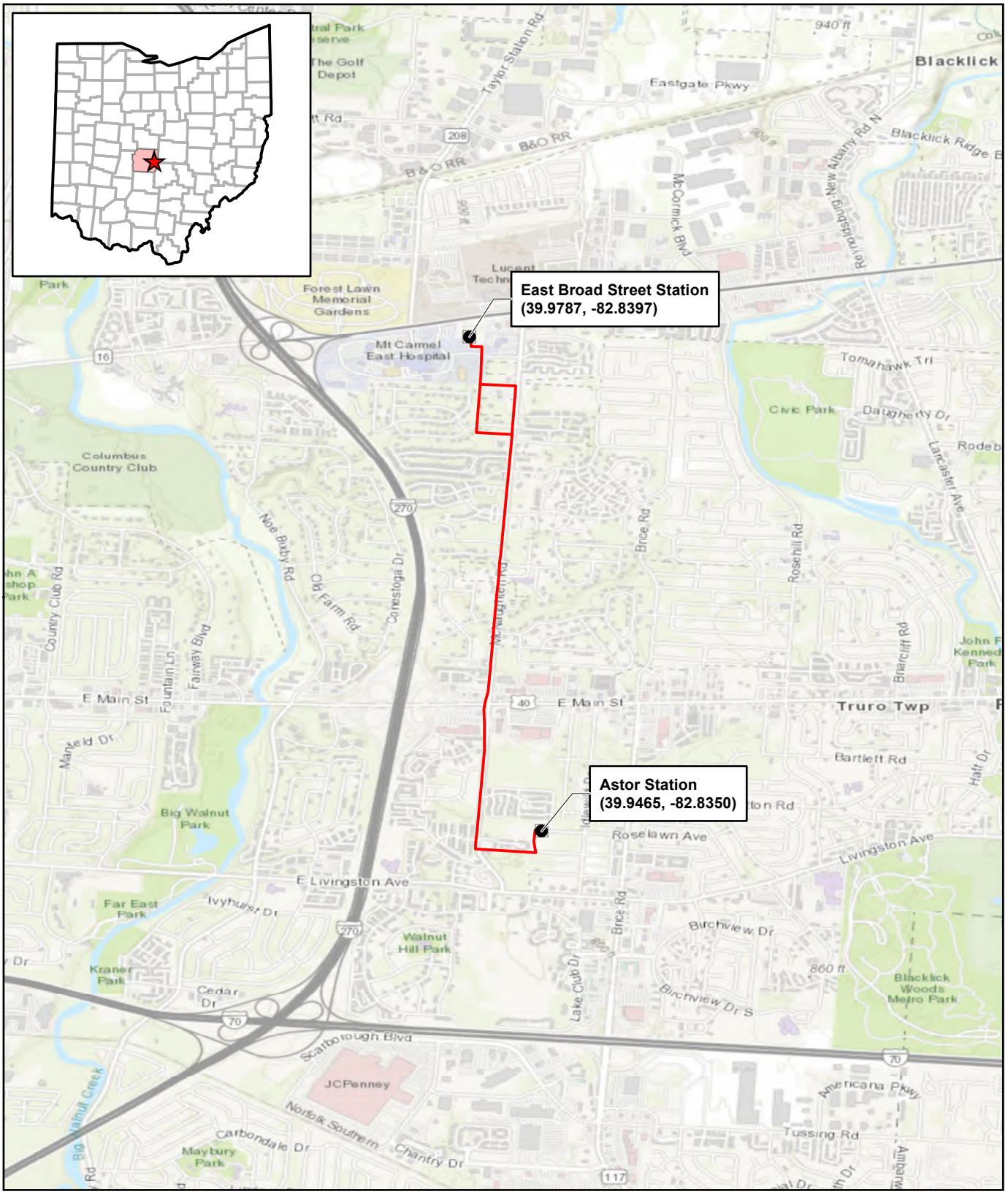

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Figure 1. Location of the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Project No. 1672

0 0.5 1 Mile

Base Map: USGS Topographic Map

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

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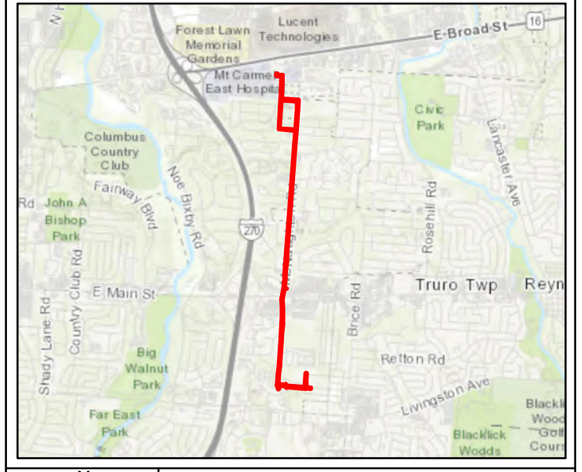
Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

MAP KEY

- National Hydrography Dataset (NHD) Stream
- Area Detailed on Subsequent Maps 1 through 6
- Area of Investigation (AOI)



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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap

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Project No. 1672

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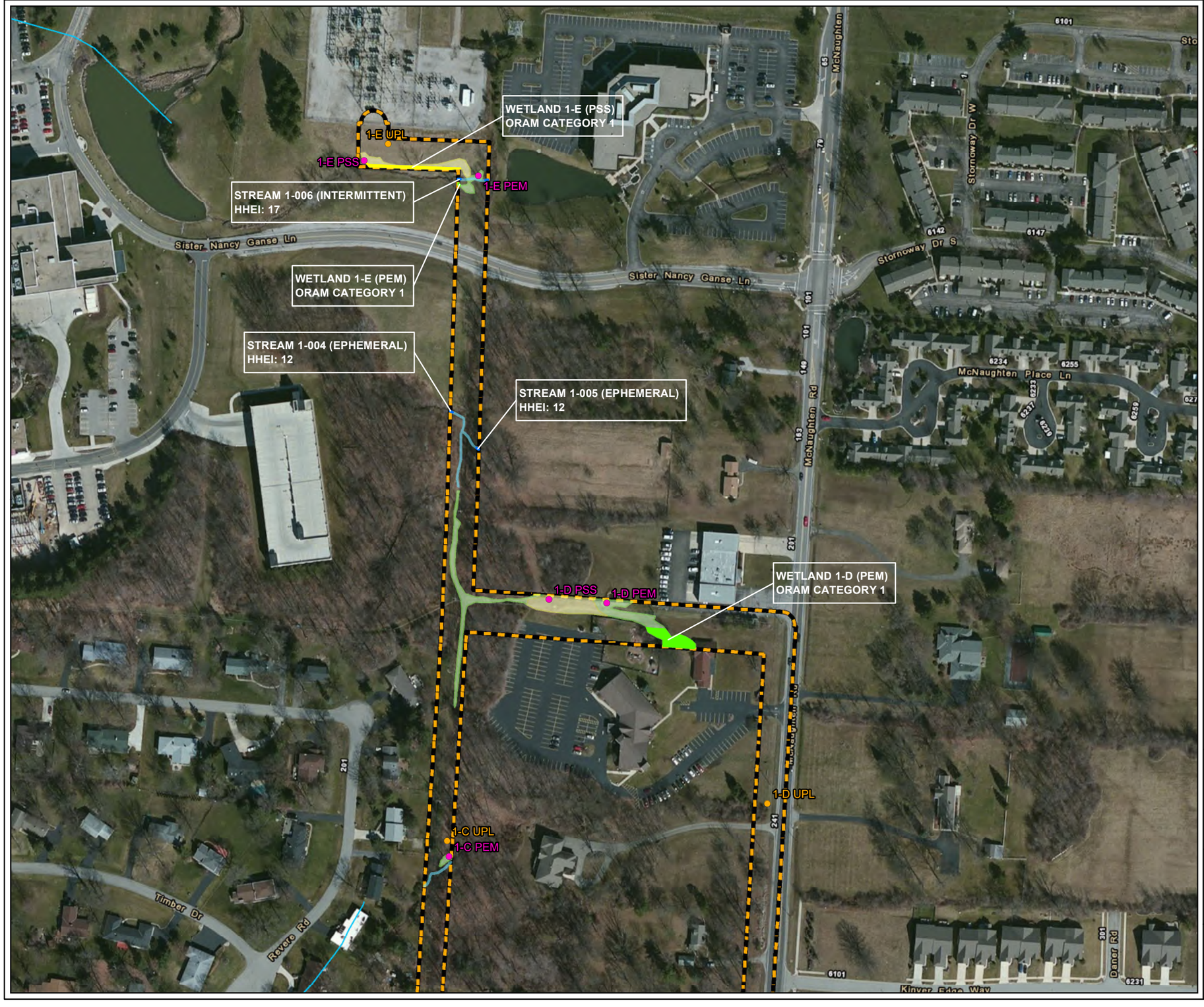


Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Map 1 of 6

- National Hydrography Dataset (NHD) Stream
- Field Delineated Stream Centerline - Extension
- Field Delineated Stream Centerline - 2021
- Area of Investigation (AOI)

Field Delineated Wetland - Extension

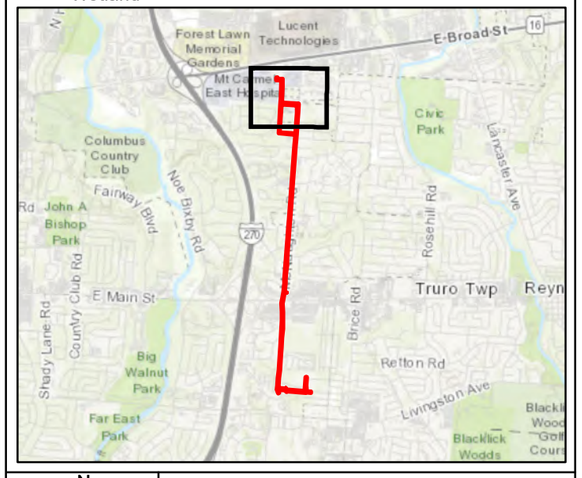
- PEM
- PSS

Field Delineated Wetland - 2021

- PEM
- PSS

Sample Point

- Upland
- Wetland



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Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
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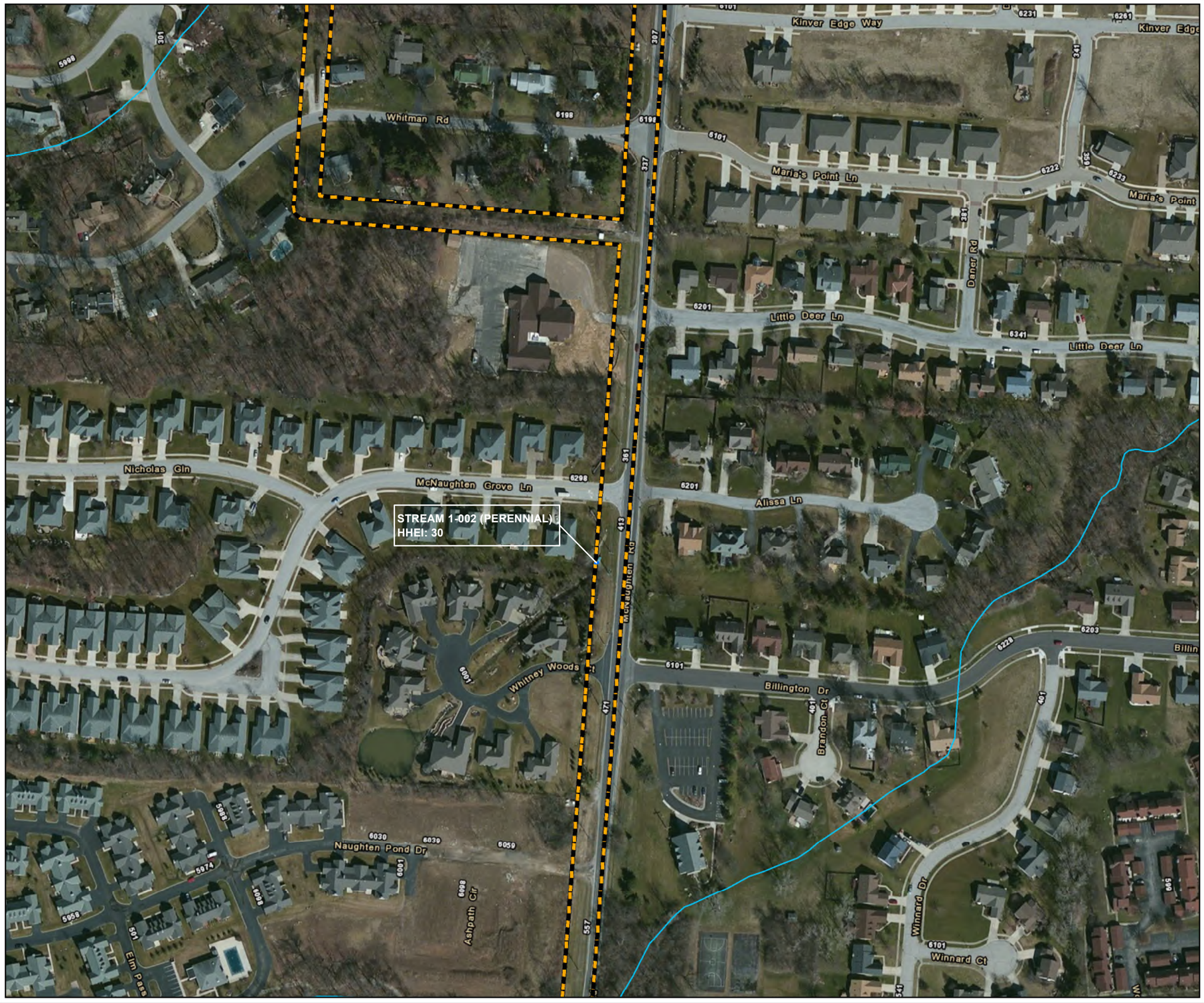
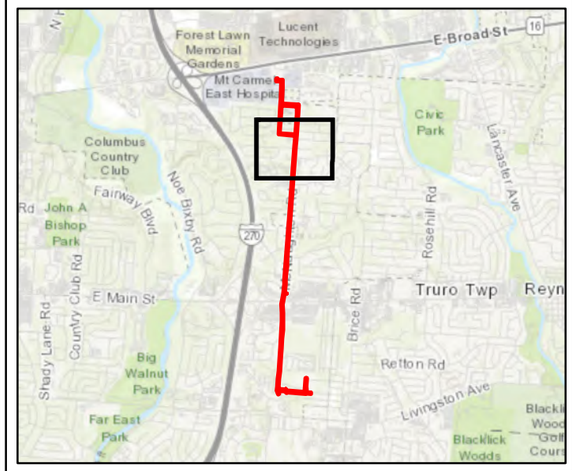


Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Map 2 of 6

- National Hydrography Dataset (NHD) Stream
- Field Delineated Stream Centerline - Extension
- Field Delineated Stream Centerline - 2021
- Area of Investigation (AOI)



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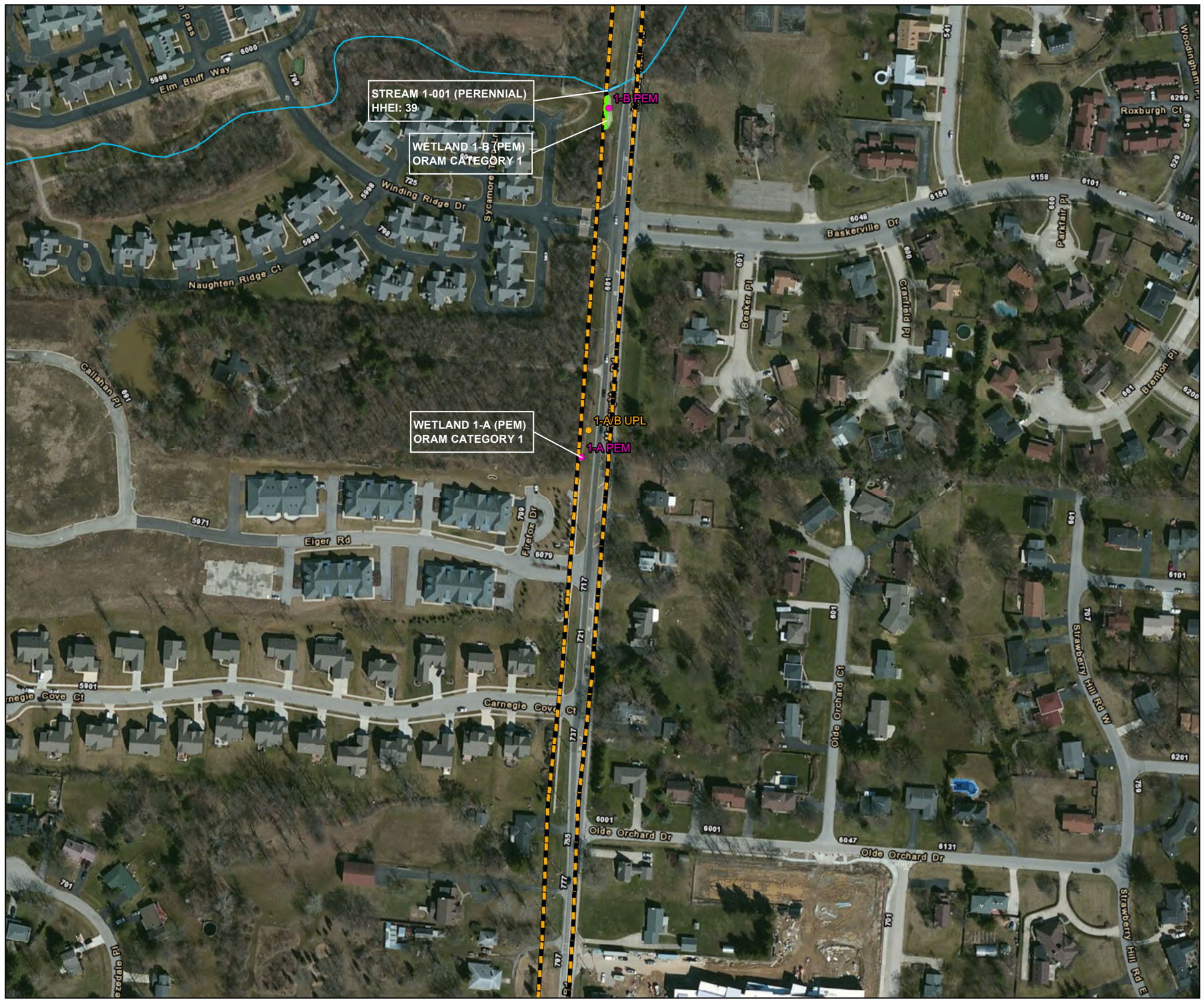


Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Map 3 of 6

- National Hydrography Dataset (NHD) Stream
- Field Delineated Stream Centerline - Extension
- Field Delineated Stream Centerline - 2021
- Area of Investigation (AOI)

Field Delineated Wetland - Extension

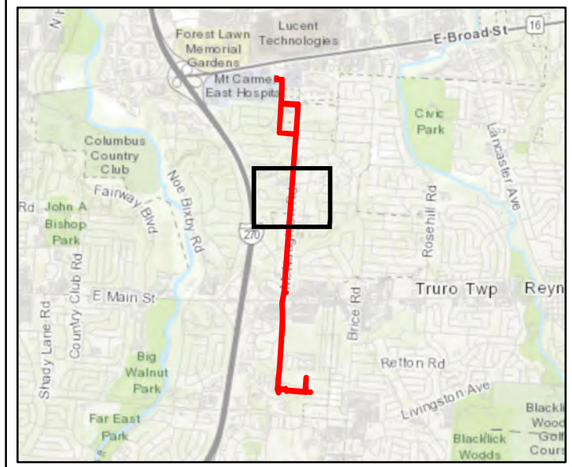
- PEM

Field Delineated Wetland - 2021

- PEM

Sample Point

- Upland
- Wetland



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Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
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Project No. 1672

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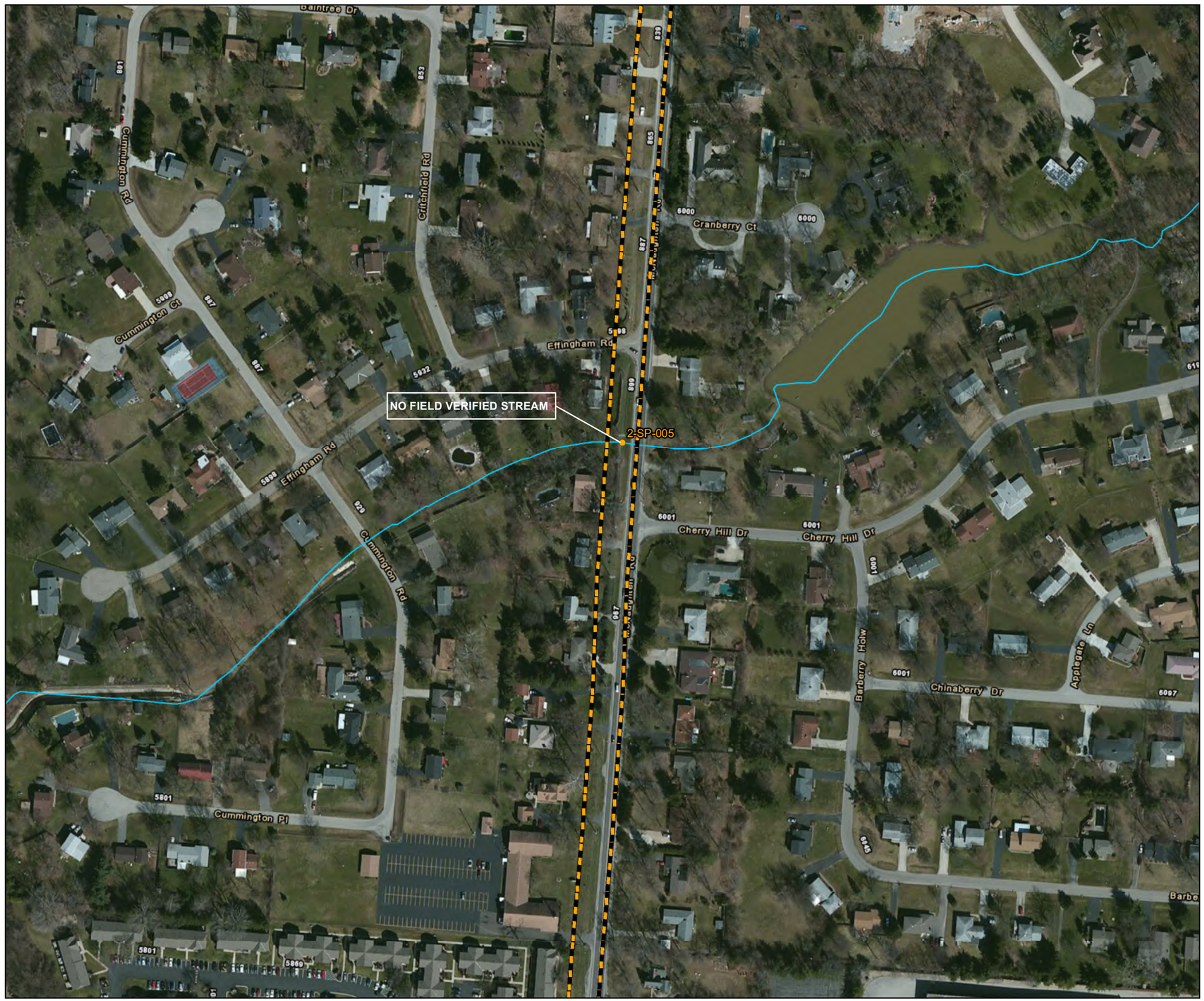


Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

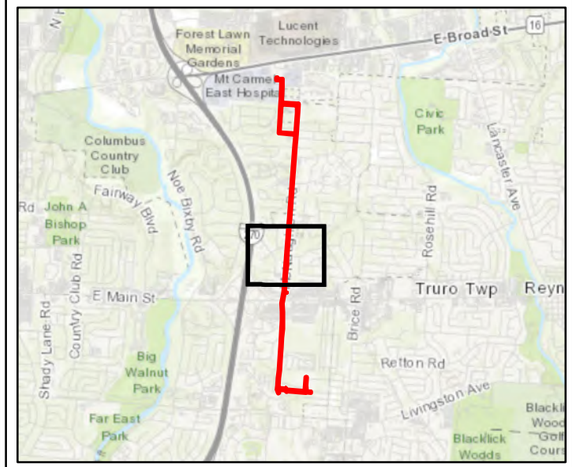
Map 4 of 6

National Hydrography Dataset (NHD) Stream

Area of Investigation (AOI)

Sample Point

Upland



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Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap

ESI ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Project No. 1672

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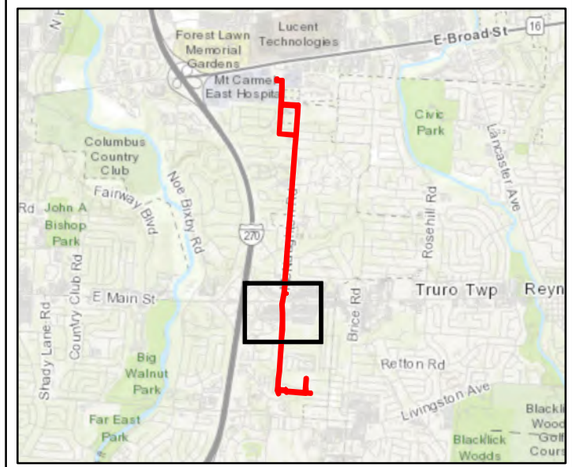
Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Map 5 of 6

Area of Investigation (AOI)

Sample Point

- Upland



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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap

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ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

Project No. 1672

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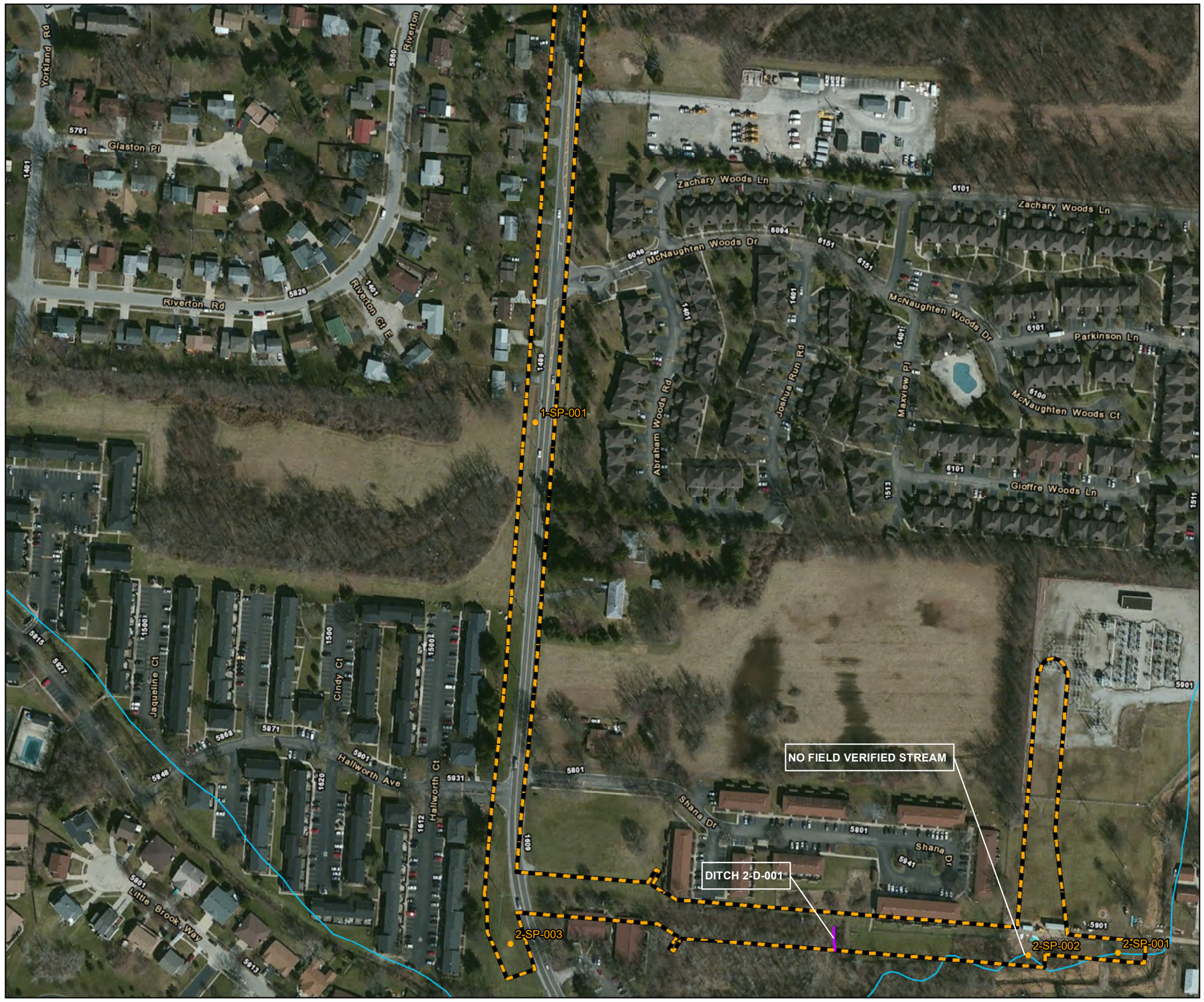


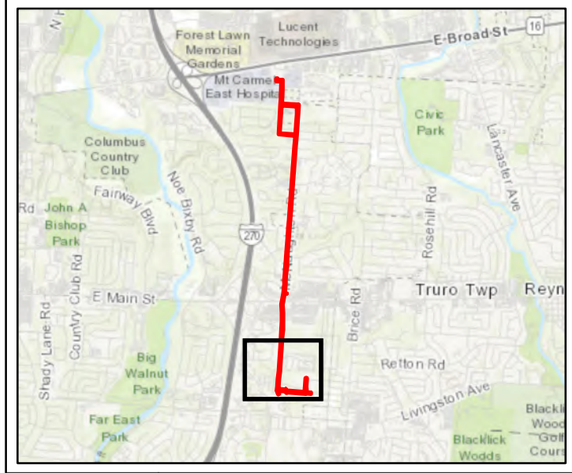
Figure 2. Addendum aquatic resources delineation on the Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Map 6 of 6

- National Hydrography Dataset (NHD) Stream
- Field Delineated Ditch Centerline
- Area of Investigation (AOI)

Sample Point

- Upland



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Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap

ESI
ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.
Project No. 1672

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APPENDIX B
AGENCY CORRESPONDENCE/DESKTOP ASSESSMENT

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

June 5, 2024

Project Code: 2023-0089369

Dear Cory Kwolek:

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

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

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

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

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

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

Sincerely,

Erin Knoll
Field Office Supervisor

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

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: 05/23/2024 18:44:52 UTC
Project code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Technical assistance for '1672 AEP Astor - East Broad Street 138 kV Repair Project'

Dear Cory Kwolek:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 23, 2024, for '1672 AEP Astor - East Broad Street 138 kV Repair Project' (here forward, Project). This project has been assigned Project Code 2023-0089369 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Rayed Bean *Villosa fabalis* Endangered
- Round Hickorynut *Obovaria subrotunda* Threatened
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Ohio Ecological Services Field Office and reference Project Code 2023-0089369 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

1672 AEP Astor - East Broad Street 138 kV Repair Project

2. Description

The following description was provided for the project '1672 AEP Astor - East Broad Street 138 kV Repair Project':

> Wetland delineations for an electrical transmission repair project.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.961639149999996,-82.83795247940883,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Environmental Solutions & Innovations, Inc.
Name: Cory Kwolek
Address: 4300 Lynn Road, Suite 205
City: Ravenna
State: OH
Zip: 44266
Email ckwolek@envsi.com
Phone: 9376712103

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: 05/23/2024 18:43:04 UTC
Project Code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

PROJECT SUMMARY

Project Code: 2023-0089369
Project Name: 1672 AEP Astor - East Broad Street 138 kV Repair Project
Project Type: Distribution Line - Maintenance/Modification - Above Ground
Project Description: Wetland delineations for an electrical transmission repair project.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.961639149999996,-82.83795247940883,14z

Counties: Franklin County, Ohio

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

---

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

MAMMALS

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Rayed Bean *Villosa fabalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5862	Endangered
Round Hickorynut *Obovaria subrotunda* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9879	Threatened
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

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

IPAC USER CONTACT INFORMATION

Agency: Environmental Solutions & Innovations, Inc.
Name: Cory Kwolek
Address: 4300 Lynn Road, Suite 205
City: Ravenna
State: OH
Zip: 44266
Email ckwolek@envsi.com
Phone: 9376712103

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

June 26, 2024

Cory Kwolek
Environmental Solutions & Innovations, Inc.
4300 Lynn Road, Suite 205
Ravenna, Ohio 44266

Re: 24-0800_AEP Astor - East Broad Street 138 kV Line Upgrades

Project: The proposed project involves the upgrade of approximately 2.75 miles of existing transmission line, with no tree clearing anticipated.

Location: The proposed project is located in Truro Township, Franklin County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has the following data within one mile of the project area:

Tippecanoe Darter (*Etheostoma tippecanoe*), SC
Elktoe (*Alasmidonta marginata*), SC
Wavy-rayed Lampmussel (*Lampsilis fasciola*), SC
Black Sandshell (*Ligumia recta*), SC
Kidneyshell (*Ptychobranchus fasciolaris*), SC
Deertoe (*Truncilla truncata*), SC

Conservation status abbreviations are as follows: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; U = state status under review; X = presumed extirpated in Ohio; FE = federally endangered, and FT = federally threatened. The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Features searched include locations of rare and endangered plants and animals determined to be of value to the conservation of their species, high quality plant communities, animal breeding assemblages, and outstanding geological features.

The species listed above are not recorded within the boundaries of the specified project area. However, please note that Ohio has not been completely surveyed and we rely on receiving information from many

sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible.

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

The project is within the range of the following listed mussel species.
Federally Endangered
clubshell (*Pleurobema clava*)
rayed bean (*Villosa fabalis*)
northern riffleshell (*Epioblasma torulosa rangiana*)
snuffbox (*Epioblasma triquetra*)
purple cat's paw (*Epioblasma o. obliquata*)

Federally Threatened
rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Endangered
elephant-ear (*Elliptio crassidens crassidens*)
pocketbook (*Lampsilis ovata*)
long solid (*Fusconaia maculata maculate*)
washboard (*Megalonaias nervosa*)
Ohio pigtoe (*Pleurobema cordatum*)

State Threatened
pondhorn (*Uniomerus tetralasmus*)
Salamander Mussel (*Simpsonaias ambigua*)

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the following listed fish species.
State Endangered
goldeye (*Hiodon alosoides*)
shortnose gar (*Lepisosteus platostomus*)
Iowa darter (*Etheostoma exile*)
spotted darter (*Etheostoma maculatum*)
northern brook lamprey (*Ichthyomyzon fossor*)
tonguetied minnow (*Exoglossum laurae*)
popeye shiner (*Notropis ariommus*)

State Threatened
lake chubsucker (*Erimyzon sucetta*)
paddlefish (*Polyodon spathula*)

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

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

Thank you for affording us the opportunity to comment.

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

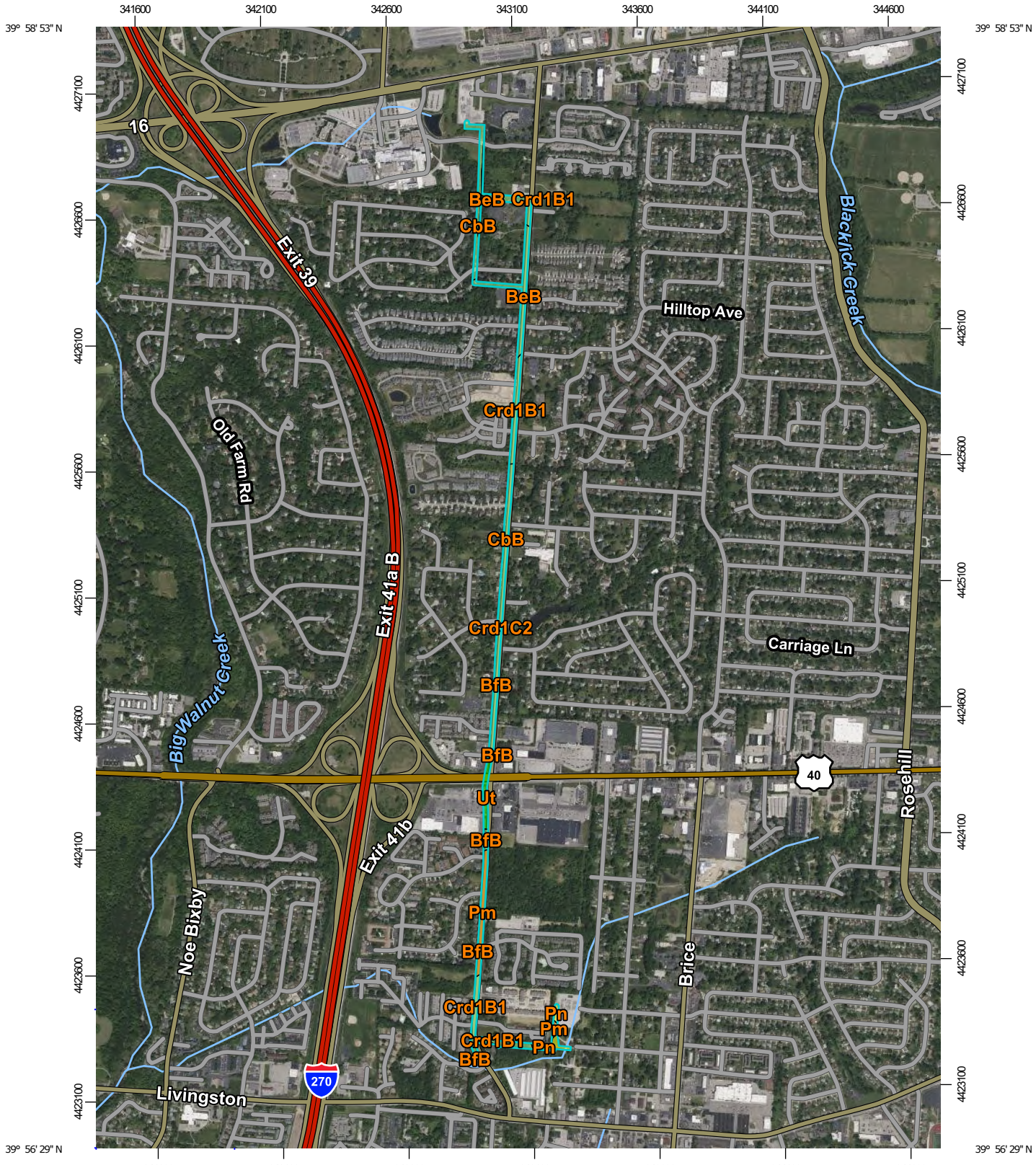
The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew
Environmental Services Administrator

APPENDIX C
SOIL REPORT

Hydric Rating by Map Unit—Franklin County, Ohio
(1672 Astor-East Broad Street 138kV Upgrades Project)



Map Scale: 1:21,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Ohio
Survey Area Data: Version 22, Sep 6, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 21, 2023—Aug 8, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Bennington silt loam, 2 to 6 percent slopes	6	3.3	14.5%
BfB	Bennington-Urban land complex, 0 to 6 percent slopes	6	3.8	16.6%
CbB	Cardington-Urban land complex, 2 to 6 percent slopes	10	5.4	23.5%
Crd1B1	Cardington silt loam, 2 to 6 percent slopes	7	5.3	23.1%
Crd1C2	Cardington silt loam, 6 to 12 percent slopes, eroded	4	0.1	0.4%
Pm	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	94	2.5	10.7%
Pn	Pewamo low carbonate till-Urban land complex, 0 to 2 percent slopes	59	1.3	5.7%
Ut	Udorthents-Urban land complex, gently rolling	0	1.3	5.6%
Totals for Area of Interest			**23.1**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

APPENDIX D
RTE TABLE

RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Summary of Potential Ohio State-Listed and Federally Listed Species within AEP's Astor-East Broad Street 138kV Upgrades Project in Franklin County, Ohio.

Common/Scientific Name	Federal Listing[1]	State Listing[1]	Habitat Preference	Habitat Observed in Project Area?	Aviodance Dates	Agency Comment[2]	Potential Impacts
Mammals							
Indiana bat/*Myotis sodalis*	E	E	Suitable summer habitat for the Indiana bat includes a wide variety of forested/wooded habitats where they roost, forage, and breed. Habitats potentially include adjacent and interspersed non-forested habitats such as emergent wetlands, agricultural fields, woodlots, fallow fields, and pastures. Females form nursery colonies under exfoliating bark of dead, dying, and living trees in a variety of habitat types, including upland and riparian habitats.	Yes	1 April through 30 September	USFWS and ODNR-DOW recommend conserving trees exhibiting loose, shaggy bark and/or crevices, holes, or cavities. Tree cutting is recommended between 1 October and 31 March. If suitable trees require removal during summer months, ODNR-DOW recommends completing a mist net or acoustic survey between 1 June and 15 August, prior to any cutting. If no tree removal is proposed, the project is unlikely to impact Indiana bat. A desktop assessment for features potentially suitable as bat hibernacula was conducted and portal searches were completed within the Project's AOI. No features potentially suitable for hibernating bat use were documented.	Yes
northern long-eared bat/*Myotis septentrionalis*	E	E	Suitable summer habitat for the northern long-eared bat includes a wide variety of forested/wooded habitats where they roost, forage, and breed. Habitats potentially include adjacent and interspersed non-forested habitats such as emergent wetlands, agricultural fields, woodlots, fallow fields, and pastures. Maternity colonies are typically found in hollow trees and under bark although they also use bat-houses, buildings, and other anthropogenic structures.	Yes	1 April through 30 September	Same as above for Indiana bat.	Yes
tricolored bat/*Perimyotis subflavus*	PE	E	During spring and summer (1 April through 15 October), the species predominantly roosts in trees, but unlike bats in the genus *Myotis* , they do not use cracks and crevices in trees. In the Midwest portion of their range, this species roosts primarily in clusters of dead leaves hanging from the branches of trees. Maternity colonies are formed primarily within dead leaf clusters, but can also form in live leaf foliage, buildings, caves, and rock crevices	Yes	1 April through 30 September	Same as above for Indiana bat.	Yes
little brown bat/*Myotis lucifugus*	N/A	E	During spring and summer (1 April through 15 October), the specie predominantly roosts in trees behind loose, exfoliating bark, in crevices and cavities. They may roost in anthropogenic structures as well. For natural roosts, both sexes prefer old-growth and mature trees at sites close to water, because of a preference to forage over open water, near shorelines, and along edge habitat providing crevices and cavities. However, the species is also dependent on forest structure surrounding roost trees.	Yes	1 April through 30 September	Same as above for Indiana bat.	Yes
Clams							
clubshell/*Pleurobema clava*	E	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	If mussels that cannot be avoided are found in the project area, the ODNR-DOW recommends mussel collection and relocation to suitable and similar habitat upstream of the project site by a professional malacologist. Complete mussel surveys and any subsequent mussel relocation in accordance with the Ohio Mussel Survey Protocol (2024). If no in-water work is proposed, impacts to mussels are not likely.	No
rayed bean/*Villosa fabalis*	E	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
round hickorynut/*Obovaria subrotunda*	T	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
northern riffleshell/*Epioblasma torulosa rangiana*	E	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
snuffbox/*Epioblasma triquetra*	E	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
purple cat's paw/*Epioblasma o. obliquata*	E	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No

rabbitsfoot/*Quadrula cylindrica cylindrica*	T	N/A	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
elephant-ear/*Elliptio crassidens crassidens*	N/A	E	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
pocketbook/*Lampsilis ovata*	N/A	E	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
long solid/*Fusconaia maculata maculata*	N/A	E	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
washboard/*Megalonaias nervosa*	N/A	E	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
Ohio pigtoe/*Pleurobema cordatum*	N/A	E	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
salamander mussel/*Simpsonaias ambigua*	PE	T	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024).	No	Year round	Same as above for clubshell.	No
pondhorn/*Uniomerus tetralasmus*	N/A	T	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	No	Year round	Same as above for clubshell.	No
elktoe/*Alasmidonta marginata*	N/A	SC	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	Yes, within 1-mile	Year round	Same as above for clubshell.	No
wavy-rayed Lampmussel/*Lampsilis fasciola*	N/A	SC	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	Yes, within 1-mile	Year round	Same as above for clubshell.	No
black Sandshell/*Ligumia recta*	N/A	SC	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	Yes, within 1-mile	Year round	Same as above for clubshell.	No
kidneyshell/ *Ptychobranchus fasciolaris*	N/A	SC	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	Yes, within 1-mile	Year round	Same as above for clubshell.	No
deertoe/*Truncilla truncata*	N/A	SC	Freshwater streams as defined in the Ohio Mussel Survey Protocol (2024)	Yes, within 1-mile	Year round	Same as above for clubshell.	No
Fish							
goldeye/*Hiodon alosoides*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.	No
shortnose gar/*Lepisosteus platostomus*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No

Iowa darter/*Etheostoma exile*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
spotted darter/*Etheostoma maculatum*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
northern brook lamprey/*Ichthyomyzon fossor*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
tonguetied minnow/*Exoglossum laurae*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
popeye shiner/*Notropis ariommus*	N/A	E	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
lake chubsucker/*Erimyzon sucetta*	N/A	T	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
paddlefish/*Polyodon spathula*	N/A	T	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
Tippecanoe Darter/*Etheostoma tippecanoe*	N/A	SC	Perennial streams, especially very slow moving, heavily vegetated streams, oxbows, or marshes.	No	15 March through 30 June	Same as above for goldeneye.	No
Insects							
monarch butterfly/*Danaus plexippus*	CA	N/A	Monarch butterflies have an extensive range within the U.S. and are associated with open lands, including meadows, native prairie patches, roadsides, woodland clearing, early successional woody habitat, utility corridors, and grassland/shrublands, where host and nectar plants are commonly found.Monarchs are considered habitat generalists as they forage on any nectar-producing flowering vegetation, but also considered habitat specialists as monarch caterpillars (larvae) rely exclusively on milkweed species (Asclepias spp.)	No	N/A	No impacts anticipated.	No

[1]E=Endangered; T=Threatened; PE=Proposed Endangered; CA; Candidate; SC=State Species of Concern

[2]Information is based on literature review information response from ODNR-DOW and USFWS

APPENDIX E
WETLAND AND STREAM TABLES

AEP Astor-East Broad Street 138 kV Transmission Line Upgrade Project **7/15/2024**

WETLAND TABLE

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acres)	ORAM	
	Latitude	Longitude				Score	Category
1-A (Previously Delineated)	39.96583	-82.83763	Yes	PEM	0.001	15	1
1-B (Extended)	39.96774	-82.83744	No	PEM	0.017	15	1
1-C (Previously Delineated)	39.97417	-82.83905	No	PEM	0.007	21	1
1-D (Extended)	39.97557	-82.83794	No	PEM	0.217	23	1
1-D (Previously Delineated)	39.97559	-82.83835	No	PSS	0.094	23	1
1-E (Extended)	39.97791	-82.83886	No	PEM	0.017	17	1
1-E (Extended)	39.97799	-82.83968	No	PSS	0.063	17	1
				Total:	**0.4149**		

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

AEP Astor-East Broad Street 138 kV Upgrade Project
STREAMS AND DITCHES TABLE

7/15/2024

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation		
	Latitude	Longitude						Method	Score	Category / Rating / OAC Designation
1-001 (Extended)	39.96786	-82.83735	Perennial	UNT[1] to Big Walnut Creek	27	5	4	HHEI	39	Class II
1-002 (Extended)	39.97056	-82.8371	Perennial	UNT[1] to Big Walnut Creek	15	5	4	HHEI	30	Class II
1-003 (Previously Delineated)	39.97408	-82.83915	Ephemeral	UNT[1] to Big Walnut Creek	76	2.5	2	HHEI	13	Class I
1-004 (Extended)	39.9779	-82.83891	Ephemeral	UNT[1] to Big Walnut Creek	169	3	1.5	HHEI	12	Class I
1-005 (Extended)	39.97644	-82.83898	Ephemeral	UNT[1] to Big Walnut Creek	52	3	1.5	HHEI	12	Class I
1-006 (Extended)	39.97647	-82.83892	Intermittent	UNT[1] to Big Walnut Creek	61	2.5	2	HHEI	17	Class I
1-D-001 (New)	39.94509	-82.83697	Ditch	N/A	47	N/A	N/A	N/A	N/A	N/A
				Total:	**446**					

[1]UNT=Unnamed Tributary

Please note that the information presented in this table may not be verified by applicable regulatory agencies.

APPENDIX F
SITE PHOTOS

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Wetland 1-B PEM (North)
Feature Extended

Wetland 1-B PEM (East)
Feature Extended

Wetland 1-B PEM (South)
Feature Extended

Wetland 1-B PEM (West)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Wetland 1-B PEM (Soil)
Feature Extended

Wetland 1-D PEM (North)
Feature Extended

Wetland 1-D PEM (East)
Feature Extended

Wetland 1-D PEM (South)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Wetland 1-D PEM (West)
Feature Extended

Wetland 1-D PEM (Soil)
Feature Extended

Wetland 1-E PEM (North)
Feature Extended

Wetland 1-E PEM (East)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Wetland 1-E PEM (South)
Feature Extended

Wetland 1-E PEM (West)
Feature Extended

Wetland 1-E PEM (Soil)
Feature Extended

Wetland 1-E PSS (North)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Wetland 1-E PSS (East)
Feature Extended

Wetland 1-E PSS (South)
Feature Extended

Wetland 1-E PSS (West)
Feature Extended

Wetland 1-E PSS (Soil)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point 2-SP-001 (North)

Representative Upland Sample Point 2-SP-001 (East)

Representative Upland Sample Point 2-SP-001 (South)

Representative Upland Sample Point 2-SP-001 (West)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point
2-SP-001 (Soil)

Representative Upland Sample Point
2-SP-002 (North)

Representative Upland Sample Point
2-SP-002 (East)

Representative Upland Sample Point
2-SP-002 (South)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point 2-SP-002 (West)

Representative Upland Sample Point 2-SP-002 (Soil)

Representative Upland Sample Point 2-SP-003 (North)

Representative Upland Sample Point 2-SP-003 (East)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point 2-SP-003 (South)

Representative Upland Sample Point 2-SP-003 (West)

Representative Upland Sample Point 2-SP-003 (Soil)

Representative Upland Sample Point 2-SP-004 (North)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point 2-SP-004 (East)

Representative Upland Sample Point 2-SP-004 (South)

Representative Upland Sample Point 2-SP-004 (West)

Representative Upland Sample Point 2-SP-004 (Soil)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point 2-SP-005 (North)

Representative Upland Sample Point 2-SP-005 (East)

Representative Upland Sample Point 2-SP-005 (South)

Representative Upland Sample Point 2-SP-005 (West)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Representative Upland Sample Point
2-SP-005 (Soil)

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Stream 1-001 (Upstream)
Feature Extended

Stream 1-001 (Downstream)
Feature Extended

Stream 1-001 (Substrate)
Feature Extended

Stream 1-002 (Upstream)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Stream 1-002 (Downstream)
Feature Extended

Stream 1-002 (Substrate)
Feature Extended

Stream 1-004 (Upstream)
Feature Extended

Stream 1-004 (Downstream)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Stream 1-004 (Substrate)
Feature Extended

Stream 1-005 (Upstream)
Feature Extended

Stream 1-005 (Downstream)
Feature Extended

Stream 1-005 (Substrate)
Feature Extended

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Stream 1-006 (Upstream)
Feature Extended

Stream 1-006 (Downstream)
Feature Extended

Stream 1-006 (Substrate)
Feature Extended

Ditch 2-D-001

Environmental Solutions & Innovations, Inc.
Photo Documentation

Client/Site Name:
American Electric Power (AEP)
Astor - East Broad Street 138kV Upgrades Project

Site Location:
Franklin County, OH

Project #:
1672

Ditch 2-D-001

APPENDIX G
WETLAND, UPLAND, AND STREAM DATASHEETS

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-A PEM

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S11 T12N R21W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 39.965834 Long: -82.837628 Datum: WGS 84

Soil Map Unit Name: CbB 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PEM wetland within low depression on edge of AOI.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Acer negundo	5	✔	FAC
2. Celtis occidentalis	5	✔	FAC
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Leersia oryzoides	35	✔	OBL
2. Typha angustifolia	25	✔	OBL
3. Impatiens capensis	20	✔	FACW
4. Daucus carota	10		UPL
5.			
6.			
7.			
8.			
9.			
10.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	100 (A)		180 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-A PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	94	10YR 5/4	6	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-A/B UPL

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S11 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 1 Lat: 39.965982 Long: -82.837578 Datum: WGS 84

Soil Map Unit Name: Crd1B1 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample point for wetland 1-A PEM and 1-B PEM.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Liquidambar styraciflua	5	✔	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Parthenocissus quinquefolia	30	✔	FACU
2. Asclepias syriaca	25	✔	FACU
3. Toxicodendron radicans	20	✔	FAC
4. Daucus carota	15		UPL
5. Cichorium intybus	10		FACU
6.			
7.			
8.			
9.			
10.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	65	x 4 =	260
UPL species	15	x 5 =	75
Column Totals:	105 (A)		405 (B)

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-A/B UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 4/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-B PEM

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S11 T12N R21W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 39.967742 Long: -82.837446 Datum: WGS 84

Soil Map Unit Name: Crd1B1 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

PEM wetland within low depression on edge of AOI.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Typha angustifolia	70	✔	OBL
2. Leersia oryzoides	15		OBL
3. Impatiens capensis	10		FACW
4. Cirsium discolor	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	100 (A)		125 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-B PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	95	10YR 4/6	5	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-C PEM

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 39.97418 Long: -82.839057 Datum: WGS 84

Soil Map Unit Name: BeB 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

PEM wetland that abuts to stream 1-003.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Fraxinus pennsylvanica	10	✔	FACW
2.			
3.			
4.			
5.			
	10% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Carex squarrosa	45	✔	OBL
2. Leersia oryzoides	25	✔	OBL
3. Solidago gigantea	15		FACW
4. Impatiens capensis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		130 (B)

Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-C PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	95	10YR 5/4	5	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-C UPL

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 1 Lat: 39.974266 Long: -82.839072 Datum: WGS 84

Soil Map Unit Name: BeB 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample point for wetland 1-C PEM.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus coccinea	15	✔	
2.			
3.			
4.			
5.			
	15%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Lonicera morrowii	20	✔	FACU
2. Acer saccharum	10	✔	FACU
3. Fraxinus pennsylvanica	5		FACW
4.			
5.			
	35%	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Parthenocissus quinquefolia	20	✔	FACU
2. Toxicodendron radicans	15	✔	FAC
3. Persicaria virginiana	10	✔	FAC
4. Rubus allegheniensis	5		FACU
5.			
6.			
7.			
8.			
9.			
10.			
	50%	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	25	x 3 =	75
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	85 (A)		305 (B)

Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-C UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 4/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street | City/County: Laurel Canyon/ Franklin | Sampling Date: 2021-07-29

Applicant/Owner: AEP | State: Ohio | Sampling Point: 1-D PEM

Investigator(s): E. Wilson, C. Kwolek | Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 0 | Lat: 39.975576 | Long: -82.83794 | Datum: WGS 84

Soil Map Unit Name: Crd1B1 | 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PEM wetland within low area behind nearby firehall.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
	10%	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Typha angustifolia	40	✔	OBL
2. Mentha aquatica	25	✔	OBL
3. Solidago gigantea	15		FACW
4. Eupatorium perfoliatum	10		OBL
5.			
6.			
7.			
8.			
9.			
10.			
	90%	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		115 (B)

Prevalence Index = B/A = 1.2

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-D PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 3/1	92	10YR 5/6	8	C	PL / M	Mucky Loam/Clay	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 4

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-D PSS

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 1 Lat: 39.975594 Long: -82.838352 Datum: WGS 84

Soil Map Unit Name: Crd1B1 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PSS portion of wetland 1-D. Wetland is within lowland area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	✔	OBL
2.			
3.			
4.			
5.			
	10%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix nigra	25	✔	OBL
2. Fraxinus pennsylvanica	15	✔	FACW
3.			
4.			
5.			
	40%	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Solidago gigantea	20	✔	FACW
2. Carex frankii	15	✔	OBL
3. Carex cristatella	10	✔	FACW
4. Scirpus atrovirens	5		OBL
5.			
6.			
7.			
8.			
9.			
10.			
	50%	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		145 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-D PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 3/2	92	10YR 5/4	8	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-D UPL

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 1 Lat: 39.974478 Long: -82.836786 Datum: WGS 84

Soil Map Unit Name: BeB 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample for complex wetland 1-D.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Elaeagnus umbellata	15	✔	
2.			
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Festuca rubra	25	✔	FACU
2. Lamium purpureum	20	✔	
3. Daucus carota	15	✔	UPL
4. Plantago major	10		FAC
5. Trifolium repens	5		FACU
6.			
7.			
8.			
9.			
10.			
	75% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Vitis aestivalis	10	✔	FACU
2.			
	10% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	15	x 5 =	75
Column Totals:	65 (A)		265 (B)

Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-D UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 5/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street | City/County: Laurel Canyon/ Franklin | Sampling Date: 2021-07-29

Applicant/Owner: AEP | State: Ohio | Sampling Point: 1-E PEM

Investigator(s): E. Wilson, C. Kwolek | Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Basin | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 39.977922 | Long: -82.838866 | Datum: WGS 84

Soil Map Unit Name: CbB | 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

PEM portion of wetland 1-E. Wetland is influenced from stream 1-006.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Fraxinus pennsylvanica	5	✔	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	50	✔	FACW
2. Carex cristatella	20	✔	FACW
3. Impatiens capensis	15		FACW
4. Solidago gigantea	10		FACW
5.			
6.			
7.			
8.			
9.			
10.			
	95% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-E PEM

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/1	94	10YR 5/6	6	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes ✔ No _____

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-E PSS

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 39.97792 Long: -82.839413 Datum: WGS 84

Soil Map Unit Name: CbB 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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

PSS portion of wetland complex 1-E.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	5	✔	OBL
2.			
3.			
4.			
5.			
	5% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Cornus amomum	20	✔	FACW
2. Salix nigra	15	✔	OBL
3. Celtis occidentalis	10	✔	FAC
4. Acer negundo	5		FAC
5.			
	50% = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Solidago gigantea	35	✔	FACW
2. Fraxinus pennsylvanica	10	✔	FACW
3. Populus deltoides	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	65	x 2 =	130
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		210 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 1-E PSS

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/2	95	10YR 4/6	5	C	M	Sandy Clay	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ✔ No ___

Remarks:

Hydric soils are present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): ___

Water Table Present? Yes ___ No ✔ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✔ Depth (inches): ___

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Hydrology indicators are present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street | City/County: Laurel Canyon/ Franklin | Sampling Date: 2021-07-29

Applicant/Owner: AEP | State: Ohio | Sampling Point: 1-E UPL

Investigator(s): E. Wilson, C. Kwolek | Section, Township, Range: S2 T12N R21W

Landform (hillslope, terrace, etc.): Upland | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 39.978094 | Long: -82.839513 | Datum: WGS 84

Soil Map Unit Name: CbB | 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample for complex wetland 1-E.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Elaeagnus umbellata			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Solidago canadensis	35	✔	FACU
2. Vicia americana	25	✔	FACU
3. Festuca rubra	20	✔	FACU
4. Erigeron annuus	15		FACU
5. Daucus carota	5		UPL
6.			
7.			
8.			
9.			
10.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1. Vitis aestivalis	10	✔	FACU
2.			
	10% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	5	x 5 =	25
Column Totals:	110 (A)		445 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-E UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 5/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-SP-001

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 2 Lat: 39.94791 Long: -82.839105 Datum: WGS 84

Soil Map Unit Name: Pm 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Representative upland sample point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Festuca rubra	45	✔	FACU
2. Asclepias syriaca	25	✔	FACU
3. Trifolium pratense	15		FACU
4. Cichorium intybus	10		FACU
5. Cirsium discolor	5		FACU
6.			
7.			
8.			
9.			
10.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-SP-001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 5/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP Astor-East Broad Street City/County: Laurel Canyon/ Franklin Sampling Date: 2021-07-29

Applicant/Owner: AEP State: Ohio Sampling Point: 1-SP-002

Investigator(s): E. Wilson, C. Kwolek Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 2 Lat: 39.955919 Long: -82.838455 Datum: WGS 84

Soil Map Unit Name: BfB 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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Representative upland sample point.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Daucus carota	30	✔	UPL
2. Festuca rubra	30	✔	FACU
3. Cichorium intybus	25	✔	FACU
4. Plantago major	10		FAC
5. Trifolium pratense	5		FACU
6.			
7.			
8.			
9.			
10.			
	100% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	60	x 4 =	240
UPL species	30	x 5 =	150
Column Totals:	100 (A)		420 (B)

Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 1-SP-002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 3/4	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 1672 AEP Astor - East Broad Street City/County: Franklin County Sampling Date: 2024-05-21

Applicant/Owner: AEP State: Ohio Sampling Point: 2-SP-001

Investigator(s): E. Wilson Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 0 Lat: 39.945026 Long: -82.834958 Datum: WGS 84

Soil Map Unit Name: Pn - Pewamo low carbonate till-Urban land complex, 0 to 2 percent slopes NWI classification: R2UBH

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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Representative upland sample point to characterize the area. Sample point was taken in herbaceous area alongside access road. No NHD stream present at this location. Mapping/aerial projection of stream is off.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	35	✔	FAC
2. Trifolium repens	30	✔	FACU
3. Plantago lanceolata	25	✔	FACU
4. Taraxacum officinale	15		FACU
5. Erigeron annuus	5		FACU
6.			
7.			
8.			
9.			
10.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	110 (A)		405 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation present.

SOIL

Sampling Point: 2-SP-001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 20	10YR 4/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 1672 AEP Astor - East Broad Street City/County: Franklin County Sampling Date: 2024-05-21

Applicant/Owner: AEP State: Ohio Sampling Point: 2-SP-002

Investigator(s): E. Wilson Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 0 Lat: 39.945013 Long: -82.835596 Datum: WGS 84

Soil Map Unit Name: Pn - Pewamo low carbonate till-Urban land complex, 0 to 2 percent slopes NWI classification: R2UBH

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Representative upland sample point to characterize the area. Sample was taken on edge of upland area and cleared ROW. No NHD stream present at this location. NHD line/aerial projection of stream is off.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus palustris	5	✔	FACW
2.			
3.			
4.			
5.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Lonicera morrowii	45	✔	FACU
2. Acer negundo	10		FAC
3.			
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Apocynum cannabinum	15	✔	FAC
2. Toxicodendron radicans	5	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft r)			
1. Vitis rotundifolia	10	✔	
2.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	30	x 3 =	90
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals:	80 (A)		280 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 2-SP-002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 1672 AEP Astor - East Broad Street City/County: Franklin County Sampling Date: 2024-05-21

Applicant/Owner: AEP State: Ohio Sampling Point: 2-SP-003

Investigator(s): E. Wilson Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 0 Lat: 39.945064 Long: -82.839267 Datum: WGS 84

Soil Map Unit Name: Crd1B1 - Cardington silt loam, 2 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Representative upland sample point to characterize the area. Sample was taken in mowed/maintained yard.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	90	✔	FAC
2. Trifolium repens	10		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	100 (A)		310 (B)

Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 2-SP-003

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 1672 AEP Astor - East Broad Street City/County: Franklin County Sampling Date: 2024-05-21

Applicant/Owner: AEP State: Ohio Sampling Point: 2-SP-004

Investigator(s): E. Wilson Section, Township, Range: S14 T12N R21W

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None

Slope (%): 0 Lat: 39.955566 Long: -82.838214 Datum: WGS 84

Soil Map Unit Name: BfB - Bennington-Urban land complex, 0 to 6 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Representative upland sample point to characterize the area. Sample was taken in maintained herbaceous area abutting a road/business center.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	65	✔	FAC
2. Trifolium repens	25	✔	FACU
3. Taraxacum officinale	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	100 (A)		335 (B)

Prevalence Index = B/A = 3.35

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

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

No hydrophytic vegetation is present.

SOIL

Sampling Point: 2-SP-004

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 3/3	100					Sandy Loam	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 1672 AEP Astor - East Broad Street City/County: Franklin County Sampling Date: 2024-05-21

Applicant/Owner: AEP State: Ohio Sampling Point: 2-SP-005

Investigator(s): E. Wilson Section, Township, Range: S11 T12N R21W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave

Slope (%): 0 Lat: 39.959797 Long: -82.838124 Datum: WGS 84

Soil Map Unit Name: BfB - Bennington-Urban land complex, 0 to 6 percent slopes NWI classification: R2UBH

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 _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Representative upland sample point to characterize the area. Sample was taken within swale to prove that no NHD stream is present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	75	✔	FAC
2. Trifolium repens	15		FACU
3. Plantago lanceolata	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	100 (A)		325 (B)

Prevalence Index = B/A = 3.25

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: 2-SP-005

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 100	10YR 4/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✔ Depth (inches): _____

Water Table Present? Yes _____ No ✔ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✔ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

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

Remarks:

No hydrology indicators present.

ORAM v. 5.0 Field Form Quantitative Rating

1-A PEM

Site: 1672 Aster - Broad Street	Rater(s): E. Wilson, C. Kwolek	Date: 7/29/2021

Metric 1. Wetland Area (size).

0	0
max 6 pts.	subtotal

Select one size class and assign score.

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

0

Metric 2. Upland buffers and surrounding land use.

2	2
max 14 pts.	subtotal

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

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

(2)

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)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

5	7
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

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)
- [x] <0.4m (<15.7in) (1)

(5)

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

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

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

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

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other mowing

Metric 4. Habitat Alteration and Development.

7	14
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

14
subtotal this page

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1-A PEM

ORAM v. 5.0 Field Form Quantitative Rating

Site: 1072 Aster - Broad Street	Rater(s): E. Wilson, C. Kwolek	Date: 7/29/2021

14
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 14 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

1 max 20 pts. | 15 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [X] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

15

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

1-B PEM

Site: 1072 Astor - Broad Street | Rater(s): E. Wilson, C. Kwolek | Date: 7/29/2021

Metric 1. Wetland Area (size).

0 (max 6 pts.) | 0 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

4 (max 14 pts.) | 4 (subtotal)

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

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

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

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

Metric 3. Hydrology.

7 (max 30 pts.) | 11 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

5 (max 20 pts.) | 10 (subtotal)

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

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

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

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

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

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

Check all disturbances observed

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

10 subtotal this page

last revised 1 February 2001 jjm

1-B PEM

ORAM v. 5.0 Field Form Quantitative Rating

Site: 1072 Astor - Broad Street	Rater(s): E. Wilson, C. Kwolek	Date: 7/29/2021

16
subtotal first page

Metric 5. Special Wetlands.

0	16
max 10 pts.	subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

-1	15
max 20 pts.	subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [1] Shrub
- [0] Forest
- [1] Mudflats
- [1] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

15

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

1-C PEM

Site: 11072 Astor - Broad Street	Rater(s): E. Wilson, C. Kwolek	Date: 7/29/2021

Metric 1. Wetland Area (size).

0	0
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

3	3
max 14 pts.	subtotal

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

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

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

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

Metric 3. Hydrology.

7	10
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

(1)

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)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other ROW

Metric 4. Habitat Alteration and Development.

8	18
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

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subtotal this page

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1-C PEM

ORAM v. 5.0 Field Form Quantitative Rating

Site: 1672 Aster- Broad Street	Rater(s): E. Wilson, C. Kuclek	Date: 7/29/2021

18
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 18 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

3 max 20 pts. | 21 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [X] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

6c. Coverage of invasive plants. Refer 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)
- [X] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

21

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

1-D PEM/PSS

Site: 1672 Astor - Broad Street	Rater(s): E.Wilson, C.Kwolek	Date: 7/29/2021

Metric 1. Wetland Area (size).

1	1
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

10	7
max 14 pts.	subtotal

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

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

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

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [x] LOW. Old field (>10 years), 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)

Metric 3. Hydrology.

8	15
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

1

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)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other RCW

Metric 4. Habitat Alteration and Development.

8	23
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

23
subtotal this page

last revised 1 February 2001 jjm

1-D PEM/PSS

ORAM v. 5.0 Field Form Quantitative Rating

Site: 1072 Aster - Broad Street	Rater(s): Ewilson, C. Kwolek	Date: 7/29/2021

23
subtotal first page

Metric 5. Special Wetlands.

0 (max 10 pts.) | 23 (subtotal)

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

0 (max 20 pts.) | 23 (subtotal)

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [1] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [X] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

23

End of Quantitative Rating. Complete Categorization Worksheets.

1-E PEM/PSS

ORAM v. 5.0 Field Form Quantitative Rating

Site: 1072 Aster - Broad Street	Rater(s): E. Wilson, C. Kwolek	Date: 7/29/2021

Metric 1. Wetland Area (size).

1 (max 6 pts.) | 1 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

2 (max 14 pts.) | 3 (subtotal)

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

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

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

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

Metric 3. Hydrology.

7 (max 30 pts.) | 10 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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)
- [x] <0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7 (max 20 pts.) | 17 (subtotal)

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

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

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

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

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

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

Check all disturbances observed

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

17 subtotal this page

last revised 1 February 2001 jjm

1-E PEM/PSS

Site: 1072 Aster - Broad Street	Rater(s): E. Wilson, C. Kuczek.	Date: 7/29/2021

17
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 17 subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

0 max 20 pts. | 17 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [1] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [X] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
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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

17

End of Quantitative Rating. Complete Categorization Worksheets.

Perennial 1-001

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 39

SITE NAME/LOCATION 1672 Astor - E. Broad Street

SITE NUMBER 1-001 RIVER BASIN Scioto River RIVER CODE — DRAINAGE AREA (mi²) 0.22

LENGTH OF STREAM REACH (ft) 200 LAT 39.967875 LONG -82.837350 RIVER MILE —

DATE 7/29/2021 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐	BLDR SLABS [16 pts]		☒	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	10%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☒	COBBLE (65-256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]		☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 50% (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

(B) TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points — Substrate Max = 40: 19 (A + B)

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☒ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS N/A MAXIMUM POOL DEPTH (centimeters): 10

Pool Depth Max = 30: 15

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): 1

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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐ Moderate 5-10m	☐	☐ Immature Forest, Shrub or Old Field	☒	☒ Urban or Industrial
☒	☒ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS N/A

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

- ☒ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS N/A

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

Perennial 1-001

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: Big Walnut Creek Distance from Evaluated Stream 1800 m

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/28/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): Unidentified

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

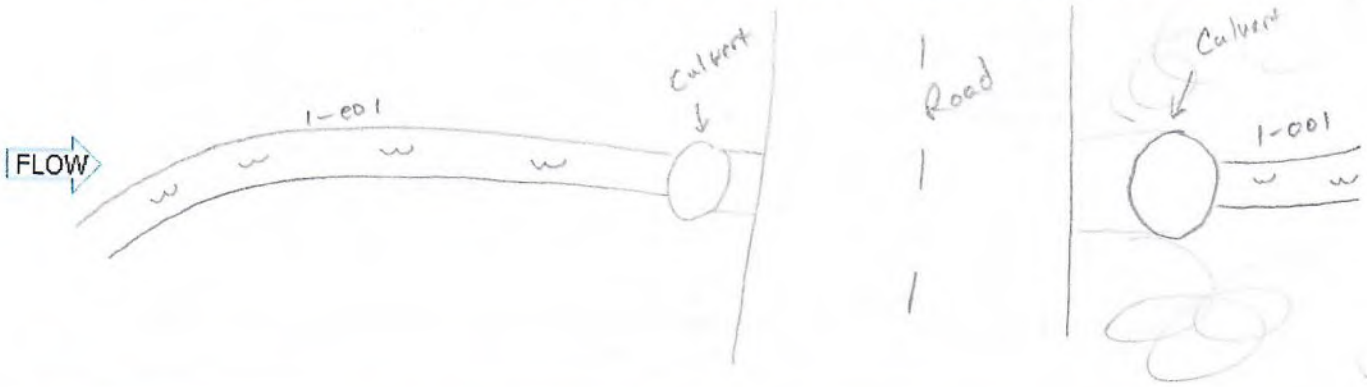
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: N/A

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



Perennial 1-002?

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 30

SITE NAME/LOCATION 1672 Aster – E. Broad St.

SITE NUMBER 1-002 RIVER BASIN Scioto River RIVER CODE — DRAINAGE AREA (mi²) 0.0591

LENGTH OF STREAM REACH (ft) 200 LAT 39.970569 LONG -82.837102 RIVER MILE —

DATE 7/29/2021 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	10%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☒	COBBLE (65-256 mm) [12 pts]	40%	☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 50% (A) 15 (B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points — Substrate Max = 40: 20 — A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☒ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS N/A 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):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): 1

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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☒	☒ Moderate 5-10m	☒	☒ Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☐	☐ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS N/A

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

- ☒ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS N/A

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

- ☒ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

Perennial 1-002

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: Big Walnut Creek Distance from Evaluated Stream 1750 m

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/28/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): Unidentified

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: N/A

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

Ephemeral 1-003

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 13

SITE NAME/LOCATION 1672 Astor-E. Broad St.

SITE NUMBER 1-003 RIVER BASIN Scioto River RIVER CODE — DRAINAGE AREA (mi²) 0.0348

LENGTH OF STREAM REACH (ft) 200 LAT 39.974099 LONG -82.839128 RIVER MILE —

DATE 7/29/2021 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]	5%	☐☒	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10%	☒☐	CLAY or HARDPAN [0 pt]	40%
☐☐	GRAVEL (2-64 mm) [9 pts]	20%	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15% (A) 3 (B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points Substrate Max = 40: B

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☒ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS N/A MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): .5

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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☒	☒ Urban or Industrial
☒	☒	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐ Mining or Construction

COMMENTS N/A

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☒ Dry channel, no water (ephemeral)

COMMENTS N/A

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

☐ None	☒ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

Ephemeral 1-003

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: UNT to Big Walnut Creek Distance from Evaluated Stream 2000 m

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/29/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

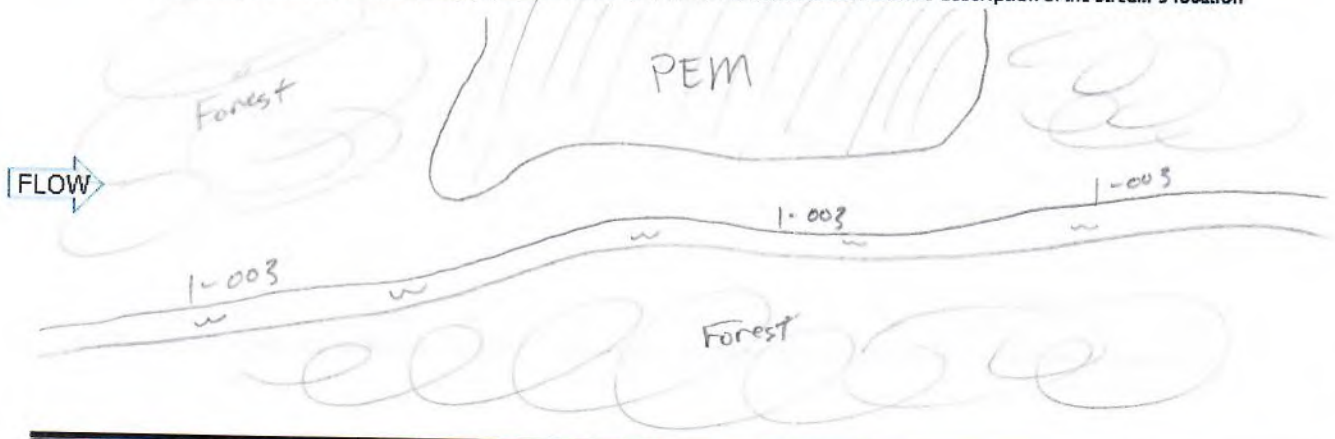
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: N/A

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



Ephemeral 1-004

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 12

SITE NAME/LOCATION 1672 Astor - E. Broad St.

SITE NUMBER 1-004 RIVER BASIN Scioto River RIVER CODE — DRAINAGE AREA (mi²) 0.00178

LENGTH OF STREAM REACH (ft) 200 LAT 39.976455 LONG -82.838988 RIVER MILE —

DATE 7/29/2021 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☒	FINE DETRITUS [3 pts]	20%
☐	COBBLE (65-256 mm) [12 pts]		☒	CLAY or HARDPAN [0 pt]	60%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	100%
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0% (A) 3

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points Substrate Max = 40: 7 A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☒ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS Moist channel MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): .5

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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☒	☒ Moderate 5-10m	☒	☒ Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☐	☐ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS N/A

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☒ Dry channel, no water (ephemeral)

COMMENTS N/A

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

Ephemeral 1-004

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: UNT to Big Walnut Creek Distance from Evaluated Stream 2000 m

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/28/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 25%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: N/A

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): —

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): —

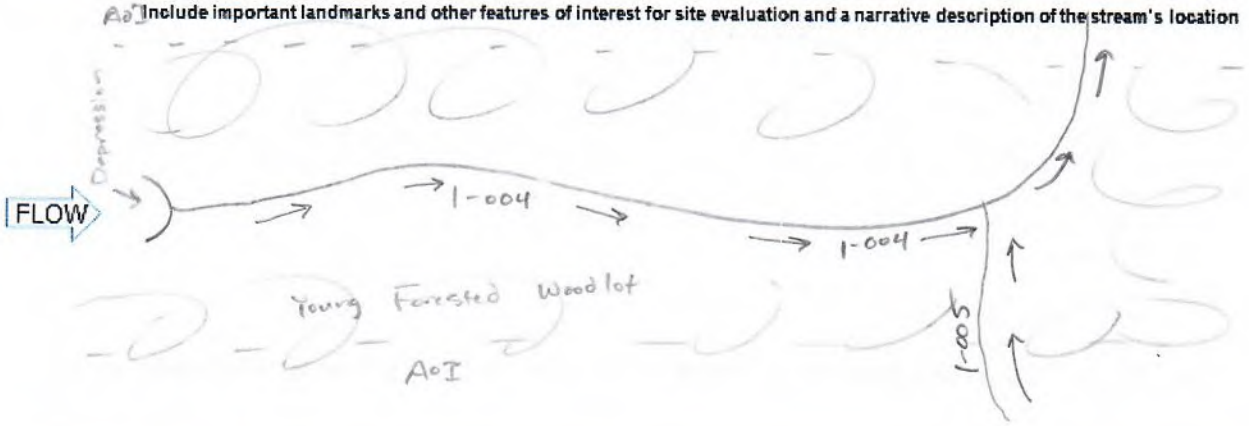
Salamanders Observed? (Y/N) N Species observed (if known): —

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): —

Comments Regarding Biology: N/A

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



Ephemeral 1-005

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 12

SITE NAME/LOCATION 1672 Aster - E Broad St

SITE NUMBER 1-005 RIVER BASIN Scioto River RIVER CODE — DRAINAGE AREA (mi²) 0.60007

LENGTH OF STREAM REACH (ft) 200 LAT 39.976447 LONG -82.836921 RIVER MILE —

DATE 7/29/21 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☒	LEAF PACK/WOODY DEBRIS [3 pts]	70%
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10%	☒☐	CLAY or HARDPAN [0 pt]	60%
☐☐	GRAVEL (2-64 mm) [9 pts]	10%	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10% (A) 3 (B) 4

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points Substrate Max = 40: 7 (A + B)

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☒ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS N/A MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): .5

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 (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☒	☒ Moderate 5-10m	☒	☒ Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☐	☐ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS N/A

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS N/A

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

- ☐ None
- ☐ 0.5
- ☒ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

Ephemeral 1-005

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: UNT to Big Walnut Creek Distance from Evaluated Stream 2000 m

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/28/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

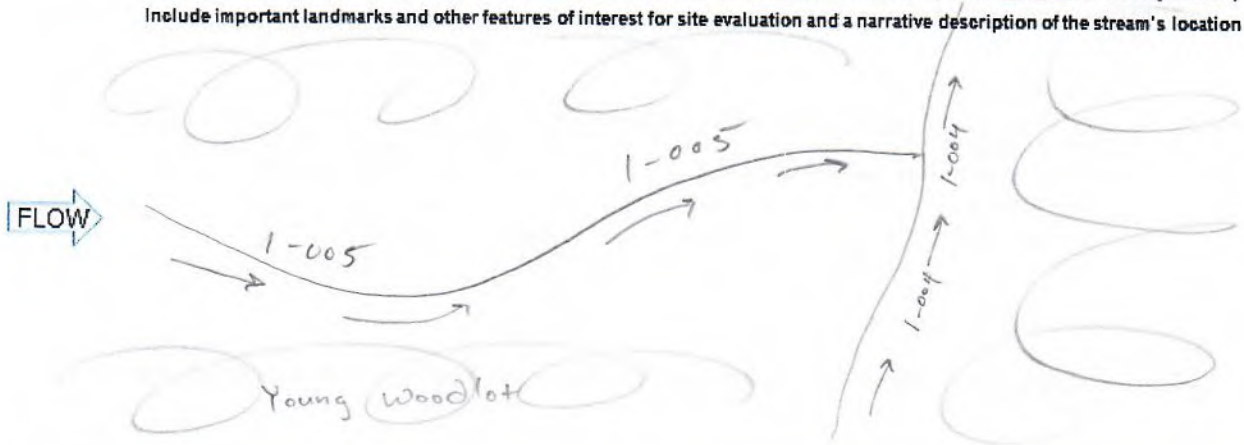
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: N/A

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



Intermittent 1-006

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 17

SITE NAME/LOCATION 1672 Astor - E. Broad St.

SITE NUMBER 1-006 RIVER BASIN Scioto River RIVER CODE _____ DRAINAGE AREA (mi²) 0.0628

LENGTH OF STREAM REACH (ft) 200 LAT 39.97790467 LONG -82.83890299 RIVER MILE —

DATE 7/29/2021 SCORER C. Kwolek COMMENTS N/A

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

1. SUBSTRATE (Estimate percent of every type 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
☐	BLDR SLABS [16 pts]		☒	SILT [3 pt]	35%
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]		☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]		☒	MUCK [0 pts]	30%
☐	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0% (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points Substrate Max = 40: 7 A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☒ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS N/A MAXIMUM POOL DEPTH (centimeters): 4.5

Pool Depth Max = 30: 5

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS N/A AVERAGE BANKFULL WIDTH (meters): .5

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 (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☒	☒	Urban or Industrial
☒	☒	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS N/A

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

- ☒ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS fed by culvert

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

Intermittent 1-006

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: Big Walnut Creek Distance from Evaluated Stream 2,000 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Reynoldsburg NRCS Soil Map Page: — NRCS Soil Map Stream Order: —

County: Franklin Township/City: N/A / Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/28/21 Quantity: Unknown

Photo-documentation Notes: Upstream, Downstream, Substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): —

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (umhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, explain: N/A

Additional comments/description of pollution impacts: N/A

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: N/A

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