Letter of Notification Clinton County (Duke) – Hillsboro 138kV Line Project

PUCO Case No. 19-1987-EL-BLN

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

Submitted by:
American Electric Power Ohio Transmission Company, Inc.

January 3, 2020

Letter of Notification

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco)
Clinton County (Duke) – Hillsboro 138kV Line Project

4906-6-05

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

4906-6-5(B) General Information

B(1) Project Description

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

AEP Ohio Transco proposes the Clinton County (Duke) – Hillsboro 138 kV Line Project ("Project"), located in Highland and Clinton Counties, Ohio. The Project proposes to rebuild 17-miles of the Hillsboro-Hutchings 138kV Circuit and Hillsboro-Warren 138kV Circuit between Hillsboro Substation and Clinton County Substation (Duke) tap point. The Hillsboro-Hutchings 138 kV Circuit is along the existing Portsmouth-Trenton No. 1 Line and the Hillsboro-Warren 138 kV Circuit is along the existing Portsmouth-Trenton No. 2 Line. These circuits currently exist as parallel H-frame structures; the Project proposes to be rebuild these circuits on new double-circuit monopole structures between the existing parallel H-frame structures. The existing H-frame structures will be removed upon completion of this Project. The Company will keep and maintain the 180ft right-of-way ("ROW"). The line asset will be renamed the Clinton County (Duke)-Hillsboro 138kV Line. Map 3 shows the Project components as explained above. This Project is part of the Hillsboro-Hutchings 138kV Circuit 36-mile rebuild, and the remaining 19 miles of the circuit rebuild was filed with the Ohio Power Siting Board under Case No. 19-1941-EL-BLN. Maps 1 and 2A-2I in Appendix A show the location of the Project in relation to the surrounding vicinity.

The Project meets the requirements for a LON because it is within the types of projects defined by item 2(b) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix for Electric Power Transmission Lines:

> *(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. 19-1987-EL-BLN

B(2) Statement of Need

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

The Project proposes a double-circuit rebuild of a 17-mile section of the Hillsboro-Hutchings 138kV Circuit and Hillsboro-Warren 138kV Circuit from Clinton County Substation (Duke) tap point to Hillsboro Substation. Previously filed in Case No. 19-1941-EL-BLN, the Company also proposed the single-circuit rebuild of a 19-mile section of the Hillsboro-Hutchings 138kV Circuit from the Hutchings tap point to Structure 44 near the Clinton County (Duke) Substation. These two projects combine to rebuild the Hillsboro-Hutchings 138 kV Circuit, which is part of the overall rebuild of the Portsmouth-Trenton Line No. 1. Due to its length (98.5 total miles), the rebuild of the Portsmouth-Trenton Line No. 1 was split into multiple projects, and the Company plans to propose additional projects to complete the rebuild of the line in the near future. The Hillsboro-Warren 138kV Circuit of the Portsmouth-Trenton Line No. 2 is jointly owned and operated by Duke-Ohio and AEP. The Company proposes to rebuild this circuit on the AEP-owned portion from Hillsboro Station to Clinton County Substation (Duke) tap point.

The Hillsboro-Hutchings 138kV Circuit portion of the Portsmouth-Trenton Line No. 1 and the Hillsboro-Warren 138kV Circuit of the Portsmouth-Trenton Line No. 2 were originally placed in-service in 1943 and most of the original equipment is still in place. There are 1,021 open conditions along the Company owned portions of these circuits west of Hillsboro Substation. The Hillsboro-Warren 138kV circuit has 323 open conditions from structures 345-494A, and the Hillsboro-Hutchings 138kV circuit has 698 open conditions between structures 337-645A. Therefore, the Project is necessary to improve reliability as it will reduce the likelihood of power outages due to equipment failure. The Company will utilize a larger conductor to match the rating proposed by Duke on their portion of the line. The conductor utilized by the Company is a standard conductor used by utilities across North America for similar construction.

The PJM supplemental project identification number for this project is s1599. This Project was included in the Company's 2019 Long-Term Forecast on page 60 and 61. The PJM slide and Long-Term Forecast pages can be found as Appendix B.

B(3) Project Location

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

Map 1 shows the location of the Project in relation to existing transmission lines and the electric power transmission substations.

B(4) Alternatives Considered

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

As an alternative to the Project, the Company considered rebuilding both lines as single-circuit parallel structures instead of combining the lines onto double-circuit monopoles. Given the opportunity to consolidate assets, the Company deemed it appropriate to create a lesser impact to the existing corridor, and combine the transmission assets onto one structure. No significant alternatives were considered on the location of the route, as rebuilding within the Company's existing rights was deemed to be best suited for the proposed facility. Socioeconomic, land use, and ecological information is presented in Section B(10).

B(5) Public Information Program

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

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

B(6) Construction Schedule

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

Construction of the Project is planned to begin in the first quarter of 2020, and the anticipated in-service date will be approximately June 2021.

B(7) Area Map

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

Map 1 in Appendix A provides the proposed Project area on a map of 1:110,880-scale (1 inch equals 1.75 miles), and provides the locations of the approximately 17-mile long existing Clinton County (Duke) - Hillsboro 138 kV line, as well as Hillsboro and Clinton County (Duke) substations on the United States Geological Survey (USGS) 7.5-minute topographic map of the New Market, Ohio, Lynchburg, Ohio, Martinsville, Ohio, and Blanchester, Ohio quadrangles. Maps 2A-2I in Appendix A show the Project area on recent aerial photography, as provided by Bing Maps at a scale of 1:12,000-scale (1 inch equals 1,000 feet).

To visit the Hillsboro Station from Columbus, Ohio, take I-70 West to I-71 South. Proceed on I-71 South for 47.5 miles to take exit 58 for OH-72 toward Sabina/Jamestown and turn left onto OH-72 South. Proceed on OH-72 South for approximately 10 miles to turn right onto OH-729 South. Proceed on OH-729 South for approximately 7.5 miles, then turn right onto Mad River Road. Proceed on Mad River Road for approximately 5.5 miles, then turn right to stay on Mad River Road for approximately 5 more miles. The Hillsboro Station will be on the right. The approximate address of the Hillsboro Station site is 5995 County Highway 7, Hillsboro, Ohio 45133, at latitude 39.173534, longitude -83.677880.

To visit the Clinton County Substation (Duke) from Columbus, Ohio, take 1-70 West to I-71 South. Proceed on I-71 South for approximately 55 miles to take exit 50 for US-68 toward Wilmington and turn left onto US-68. Proceed on US-68 for approximately 3 miles and then turn right onto Center Road. Continue on Center Road for approximately one mile and then turn left onto North Nelson Avenue and proceed approximately 3.3 miles before turning right onto OH-730 South. Proceed on OH-730 South for approximately 10 miles and then continue onto OH-133 South for 2.5 miles to turn left onto North Columbus Street. Proceed on North Columbus Street for approximately 0.7 miles and then turn left onto OH-28 East/Cherry Street, continuing for approximately one mile. The Clinton County Substation (Duke) will be on the right. The approximate address of the Clinton Station is 504 Cherry Street, at latitude 39.295994, longitude -83.961433.

B(8) Property Agreements

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

The Project is within existing ROW. No additional easements, options, or land use agreements are necessary.

B(9) Technical Features

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

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

The transmission line construction will include the following:
Voltage: 138kV
Conductors: 1033.5 kcmil 54/7 "Curlew" ACSR
Static Wire: 7#8 Alumoweld & 48-CT OPGW
Insulators: Polymer
ROW Width: 180-Feet
Span Length: 1100ft. (Existing span is 600ft)

Structure Types: (next page)

- Single circuit, galvanized steel, monopole, custom structure on a reinforced concrete foundation. (1) structure needed.
- Double circuit, galvanized steel, monopole, custom structure on a reinforced concrete foundation. (84) structures needed.
- Double circuit, galvanized steel, monopole, custom structure, direct embedded. (1) structure needed.
- Double circuit, galvanized steel, two-pole, custom structure, direct embedded. (1) structure needed.
- Single circuit, galvanized steel, monopole, pre-engineered, direct embedded structures. (1) structure needed.
- Double circuit, galvanized steel, monopole, pre-engineered, direct embedded. (1) structure needed.

B(9)(b) Electric and Magnetic Fields

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

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

i) Calculated Electric and Magnetic Field Levels

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 either circuit of this line would operate at its WN rating in the foreseeable future. Loading levels and the calculated electric and magnetic fields (EMF) are summarized below.

EAST LIMA-MADDOX CREEK 345 KV EMF CALCULATIONS				
Condition	**Circuit Load (A)**	**Ground Clearance (feet)**	**Electric Field (kV/m)***	**Magnetic Field (mG)***
(1) Normal Maximum Loading^	225.93 / 66.65	29.3	0.07/2.10/0.07	3.66/23.65/3.0
(2) Emergency Line Loading^^	343.07 / 283.48	28.8	0.07/2.14/0.07	7.30/46.74/7.03
(3) Winter Normal Conductor Rating^^^	1568 / 1568	29.3	0.07/2.10/0.07	35.86/227.37/35.79

* 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 75 feet (left) and 75 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

The above EMF levels are well within the limits of the specified 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 0-3kHz".

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.

Design alternatives were not considered due to EMF 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 have impacts on human

health. Due to these concerns, EMF associated with the new circuits was calculated and set forth in the table above. The EMF was computed assuming the highest possible EMF values that could exist along the proposed transmission line rebuild. 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, shavers and hair dryers. For additional information regarding EMF, the National Institutes of Health has posted information on their website: http://www.niehs.nih.gov/health/topics/agents/emf/. Additionally, information on electric and magnetic fields is available on AEP Ohio's website: https://www.aepohio.com/info/projects/emf/OurPosition.aspx. The information found on AEP Ohio's website describes the basics of electromagnetic field theory, scientific research activities, and EMF exposures encountered in everyday life. Similar material will be made available for those affected by the construction activities for this Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $43,300,000, from a Class 3 estimate.

B(10) Social and Economic Impacts

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

B(10)(a) Land Use Characteristics

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project extends approximately 17 miles from Hillsboro Substation to Clinton County Substation (Duke). The Project is located in New Market, Hamer, and Dodson Townships in Highland County and Clark, Jefferson, and Marion townships in Clinton County.

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 Clinton and Highland County Auditors provided a list of parcels registered as Agricultural District Land in September 2019. The proposed Clinton County (Duke) - Hillsboro 138 kV line intersects 11 parcels that were identified as Agricultural District Land parcels. The Clinton County (Duke) - Hillsboro 138 kV line crosses approximately 2.1 miles of agricultural district land.

Overall, the proposed Clinton County (Duke) - Hillsboro 138 kV line crosses approximately 13.5 miles of agricultural land. As the Project is to rebuild within the existing maintained corridor, minimal additional impacts to agricultural land are expected.

B(10)(c) Archaeological and Cultural Resources

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

A cultural report was completed and will be coordinated directly with the OPSB. The coordination letter is provided within 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 storm water discharges under General Permit OHCD000005. AEP Ohio Transco will also coordinate storm water permitting needs with local government agencies, as necessary. AEP Ohio Transco will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion control sediment to protect surface water quality during storm events.

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

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

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

The United States Fish and Wildlife Service (USFWS) *Ohio County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species* (available at https://www.fws.gov/midwest/Endangered/lists/pdf/OhioCtyList29Jan2018.pdf) was reviewed to identify the threatened and endangered species known to occur in the Project counties. This USFWS publication lists the Indiana bat (*Myotis sodalist*; federally endangered) and the Northern long-eared bat (*Myotis sepententrionalis*; federally threatened) for all three counties, the Eastern massasauga (*Sistrurus catenatus*; federally threatened) for Clinton and Warren Counties, the running buffalo clover (*Trifolium*

stoloniferum; federally endangered) for Highland and Warren Counties, and the rayed bean (*Villosa fabalis*; federally endangered) for Warren County. On October 17, 2017, coordination letters were sent to USFWS and the Ohio Department of Natural Resources (ODNR) soliciting responses.

Responses were received from the USFWS on January 9, 2018 and from the ODNR on January 4, 2018. The ODNR and the USFWS identified several state and federal listed crustacean, mussel, reptile, and fish species within the Project survey corridor area; however, no in-water work is planned as part of the Project and impacts to the species and their habitat is not anticipated. The USFWS indicated that the Project area contains potential habitat for the Indiana bat and the Northern long-eared bat and is in vicinity of multiple records of the Indiana bat. The USFWS recommended that tree removal only occur between October 1 and March 31, if trees less than or equal to 3 inches of diameter at breast height (dbh) cannot be avoided. Additionally, the USFWS indicated that implementation of the recommended seasonal tree cutting is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer.

The ODNR indicated that the Project area contains suitable habitat for the Northern harrier (*Circus cyaneus*) and the upland sandpiper (*Bartramia longicauda*) in old field, pasture, and emergent wetland habitats. AEP Ohio Transco consultant confirmed that limited suitable habitat (old field, pasture, and emergent wetland habitat) is present within or adjacent to the Project area for the Northern Harrier and Upland Sandpiper in their Wetland Delineation and Stream Assessment Report. The Ohio Department of Wildlife (DOW) recommends that construction should be avoided during the Northern Harrier's nesting period (May 15 to August 1) if the species' suitable habitat will be impacted, and that construction should be avoided during the upland sandpiper's nesting period (April 15 to July 31) if the species' suitable habitat will be impacted.

Based on the primarily agricultural nature of the Project area and minimal amount of tree clearing required, no impacts to federally listed species are anticipated. Additional details regarding species are provided in Appendix C.

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.

AEP Ohio Transco's consultant prepared a Wetland Delineation and Stream Assessment Report. No impacts to wetlands or streams are anticipated. Copies of the Wetland Delineation and Stream Assessment Reports for the Project are included as Appendix C. A Stormwater Pollution Prevention Plan (SWPPP) will also be prepared prior to construction.

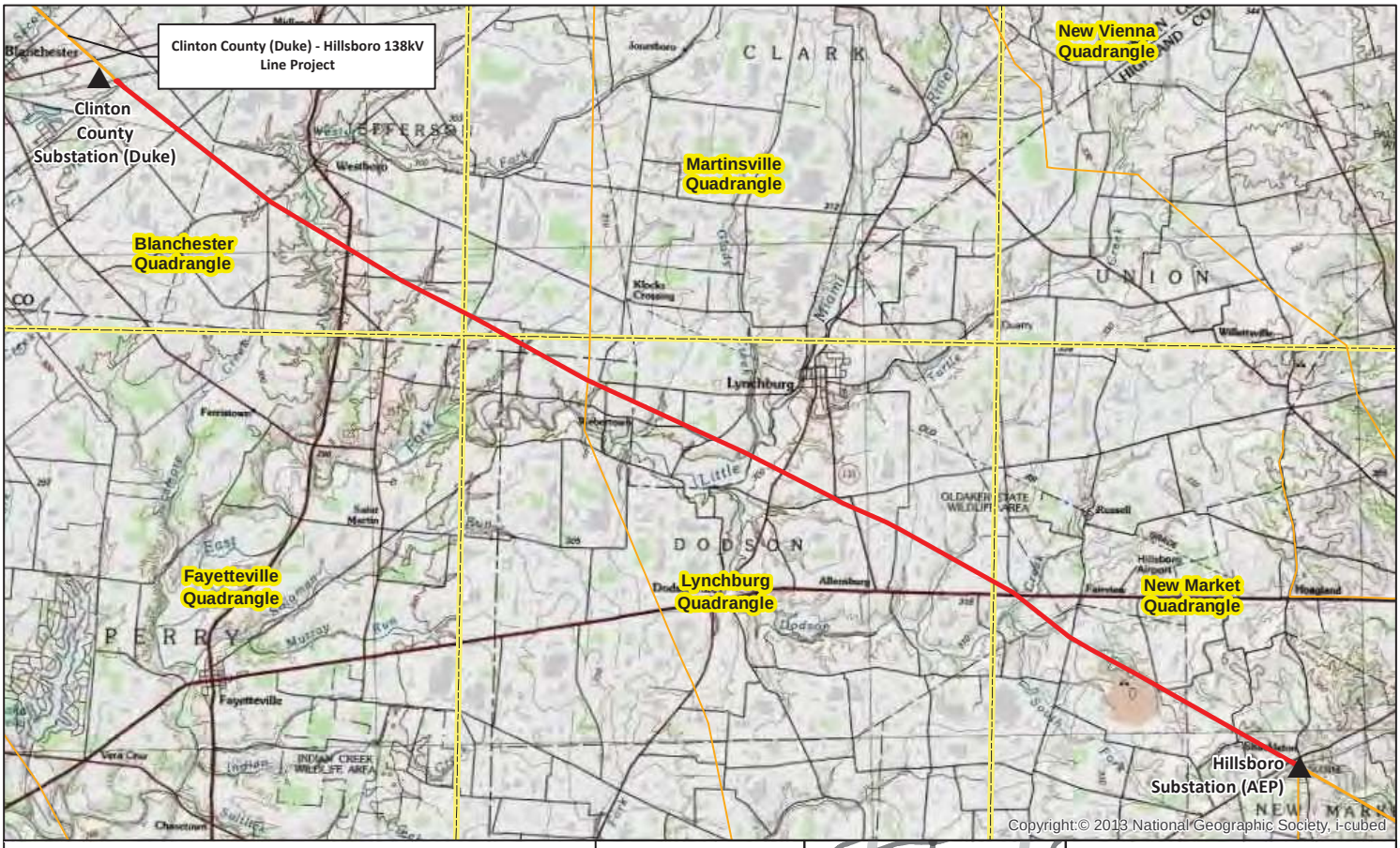
B(10)(g) Unusual Conditions

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

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

APPENDIX A

PROJECT MAPS

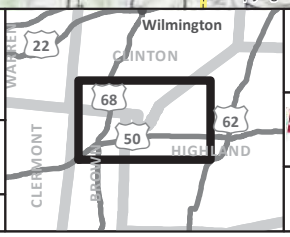


Station
Clinton County (Duke)-Hillsboro 138kV Line
Existing Transmission Line
USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2019), USGS (2018), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 1
Project Overview

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138kV Line

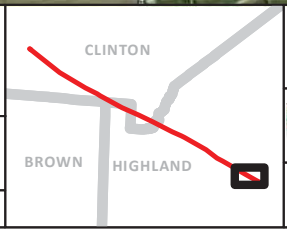
0 1.75 3.5
Miles

Station
Structure Location
Clinton County (Duke)-Hillsboro 138 kV Line
Existing Transmission Line
Township Boundary
County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2A
Aerial Imagery of Project Area

AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

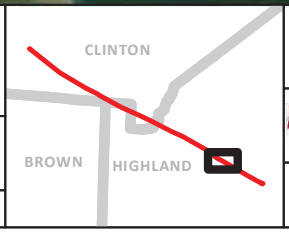
0 1,000 2,000
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2B
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

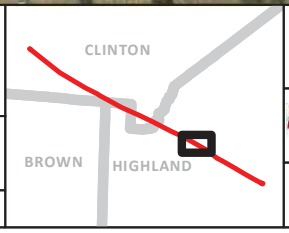
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2C
Aerial Imagery of Project Area

AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

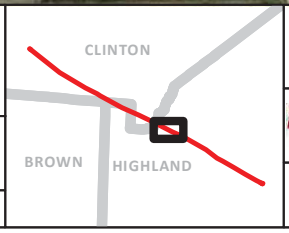
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- City/Municipal Area
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2D
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

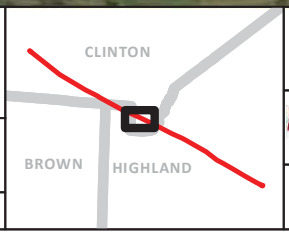
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2E
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

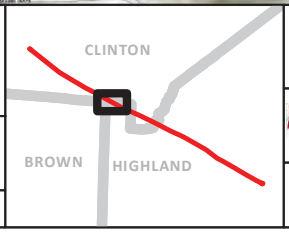
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



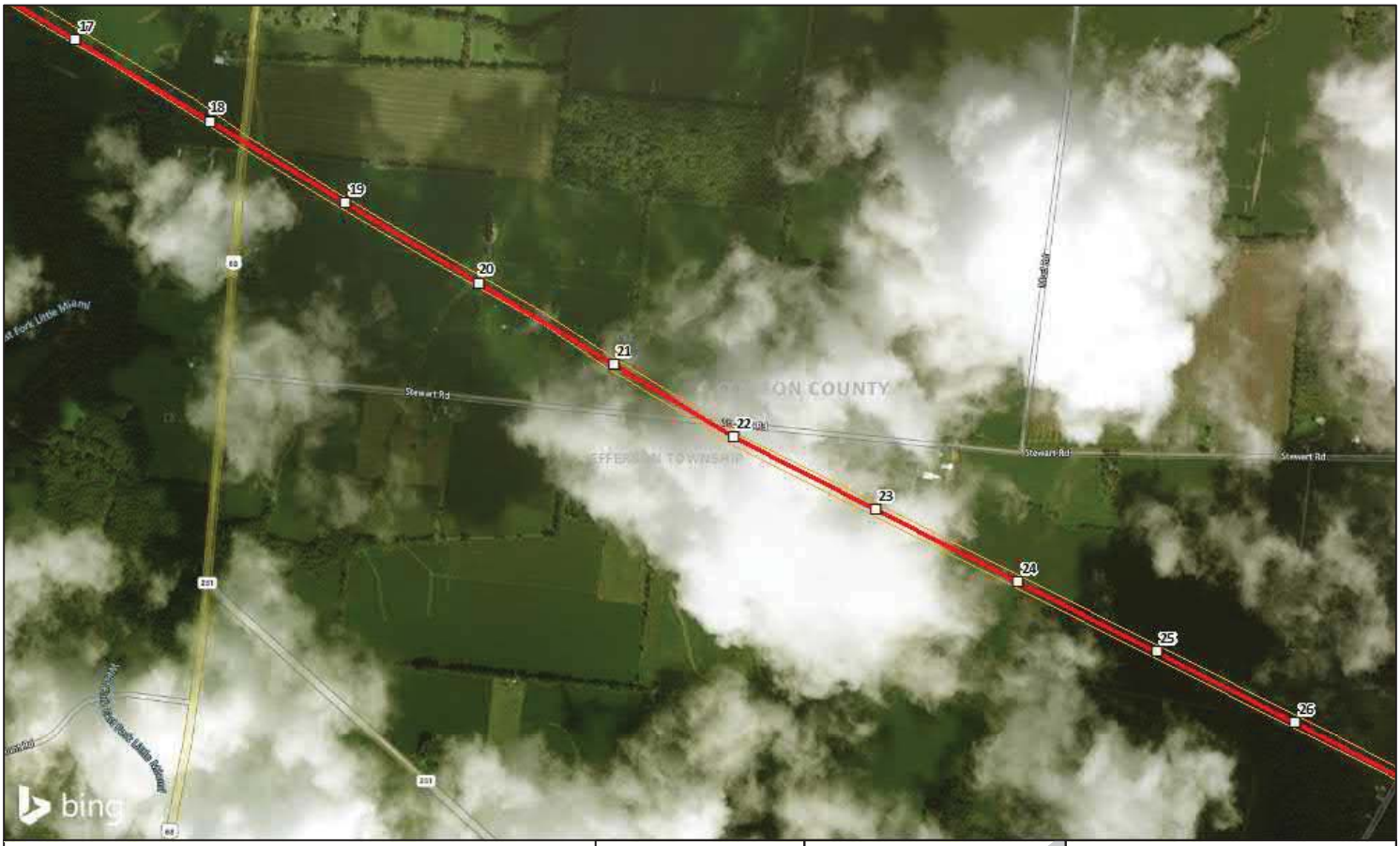
Map 2F
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

Feet

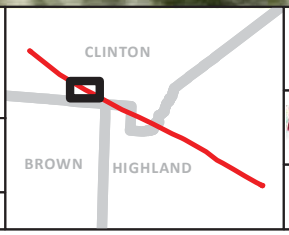


- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2G
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

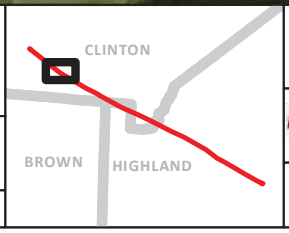
Feet

- Structure Location
- Clinton County (Duke)-Hillsboro 138 kV Line
- Existing Transmission Line
- Township Boundary
- County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2H
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000

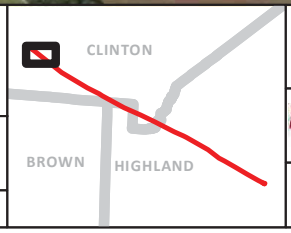
Feet

Station
Structure Location
Clinton County (Duke)-Hillsboro 138 kV Line
Existing Transmission Line
City/Municipal Area
Township Boundary
County Boundary

Data Sources: AEP (2019), Bing (2019), ESRI (2013)

Coordinate System: State Plane Ohio South NAD 83

December 11, 2019



Map 2I
Aerial Imagery of Project Area

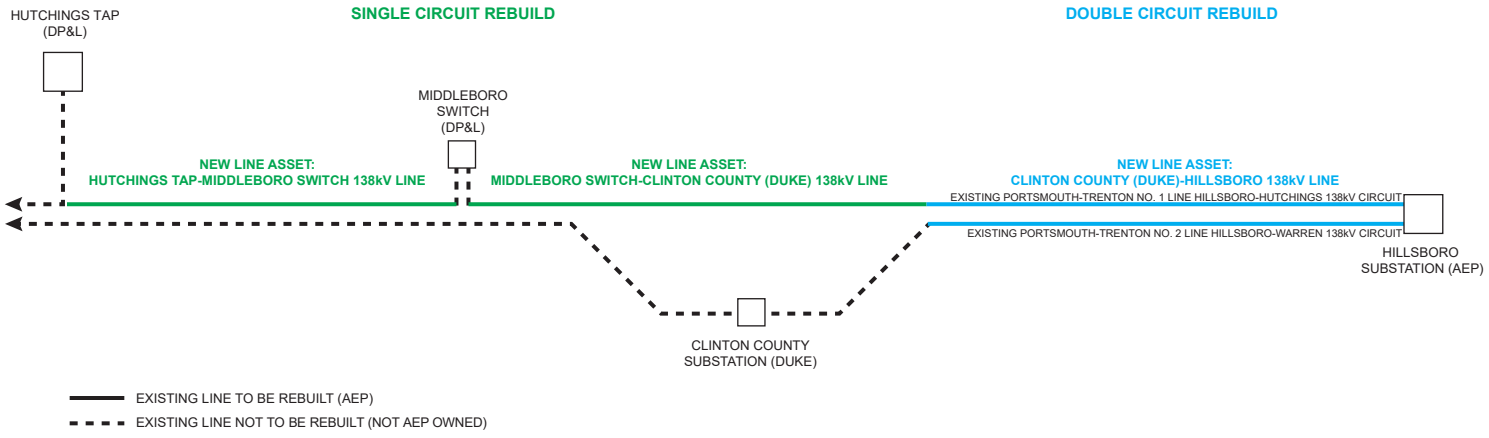
AEP AMERICAN ELECTRIC POWER

Clinton County (Duke) - Hillsboro 138 kV Line Project

0 1,000 2,000
Feet

LETTER OF NOTIFICATION FOR THE
"HUTCHINGS TAP-MIDDLEBORO SWITCH 138kV LINE AND
MIDDLEBORO SWITCH-CLINTON COUNTY (DUKE) 138kV TRANSMISSSION LINE PROJECT"

LETTER OF NOTIFICATION FOR THE
"CLINTON COUNTY (DUKE)-HILLSBORO 138kV LINE PROJECT"



APPENDIX B
PJM AND LONG TERM FORECAST

Previously Presented: 3/27/2018 SRRTEP

Problem Statement:

Equipment Material/Condition/Performance/Risk:

The 36 miles of transmission line sections from Hillsboro to Hutchings Tap were constructed in 1943 using wood pole structures with 477 ACSR conductor (185 MVA rating). There are 1,098 open conditions on this line, including rotten cross-arms, burnt/broken insulators, and loose/broken conductor hardware.

Operational Flexibility and Efficiency

In the event there is a failure of the line between Hillsboro and Hutchings, the driving time can be approximately 1-2 hours from the Chillicothe Service Center to Middleboro Switch. A MOAB will allow for automatic sectionalizing.

Selected Solution

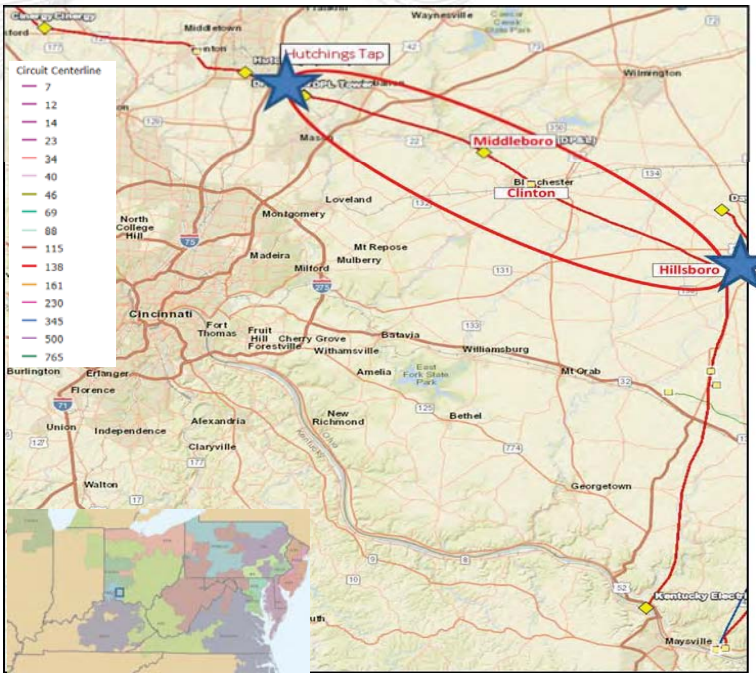
Rebuild two 138kV transmission lines between Hillsboro and Hutchings Tap as double circuit construction. Construct the 19-mile AEP segment from Middleboro to Hutchings Tap as a single circuit line using 954 ACSR conductor. (**S1599.1**) **Estimated Cost: $113.1M**

The 1200 A switch at Middleboro will be upgraded to 2000 A. The new switch will have SCADA control, auto sectionalizing and loop opening/line dropping capability. (**S1599.2**) **Estimated Cost: $1.5M**

Total Estimated Transmission Cost: $114.6M

Projected In-service: 12/01/2021

Project Status: Scoping



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

1.	**LINE NAME AND NUMBER:**	Hillsboro - Hutchings (DP&L) (S1599)
2.	**POINTS OF ORIGIN AND TERMINATION**	Hillsboro, Hutchings; INTERMEDIATE STATION - Middleboro (DP&L)
3.	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	19 mi (1 circuit) / 17 mi (2 circuit) / 100 ft
4.	**VOLTAGE: DESIGN / OPERATE**	138kV / 138kV
5.	**APPLICATION FOR CERTIFICATE:**	LON, September 2019
6.	**CONSTRUCTION:**	2020-2022
7.	**CAPITAL INVESTMENT:**	~$68.4M
8.	**PLANNED SUBSTATION:**	NAME - N/A; TRANSMISSION VOLTAGE - N/A; ACREAGE - N/A; LOCATION - N/A
9.	**SUPPORTING STRUCTURES:**	Steel H-frame
10.	**PARTICIPATION WITH OTHER UTILITIES**	DP&L
11.	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Rebuild of existing 138kV line, asset renewal of aging infrastructure
12.	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Increased risk of equipment failure.
13.	**MISCELLANEOUS:**	N/A

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

1.	**LINE NAME AND NUMBER:**	Hillsboro - Warren (Duke) (S1599)
2.	**POINTS OF ORIGIN AND TERMINATION**	Hillsboro, Warren; INTERMEDIATE STATION - Clinton (Duke)
3.	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	17 mi / 100 ft / 2 circuit
4.	**VOLTAGE: DESIGN / OPERATE**	138kV / 138kV
5.	**APPLICATION FOR CERTIFICATE:**	LON, September 2019
6.	**CONSTRUCTION:**	2020-2022
7.	**CAPITAL INVESTMENT:**	$45.6M
8.	**PLANNED SUBSTATION:**	NAME - N/A; TRANSMISSION VOLTAGE - N/A; ACREAGE - N/A; LOCATION - N/A
9.	**SUPPORTING STRUCTURES:**	Steel H-frame
10.	**PARTICIPATION WITH OTHER UTILITIES**	Duke
11.	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Rebuild of existing 138kV line, asset renewal of aging infrastructure
12.	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Increased risk of equipment failure.
13.	**MISCELLANEOUS:**	N/A

APPENDIX C

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

HILLSBORO-HUTCHINGS 138 KV TRANSMISSION LINE REBUILD PROJECT, WARREN, CLINTON AND HIGHLAND COUNTIES, OHIO

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230

Prepared by:

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60556975

May 2018

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LIST OF ACRONYMS and ABBREVIATIONS

AEP Ohio Transco	American Electric Power Ohio Transmission Company
DOW	Division of Wildlife
DBH	Diameter at Breast Height
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GIS	Geographic Information System
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
IBI	Index of Biotic Integrity
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate Wetland
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High Water Mark
ONHD	Ohio Natural Heritage Database
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine Emergent Wetland
PHWH	Primary Headwater Habitat
PFO	Palustrine Forested Wetland
PSS	Palustrine Scrub-Shrub Wetland
POW	Palustrine Open Water Wetland
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
UPL	Upland

U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to rebuild approximately 36 miles of 138 kV line in Highland, Clinton and Warren Counties, Ohio ("Project"). The project includes Line #1 from Hillsboro Station to Duke Energy's Clinton Station which is approximately 17 miles long, and Line #2 between Hillsboro Station and Dayton Power & Light's Middleboro Station, which is approximately 21 miles, and continues 15 miles to the Hutchings tap point approximately five miles southeast of Dayton Power & Light's Hutchings Station. Reroutes from a direct rebuild within existing right-of-way (ROW) will be explored within congested and environmentally sensitive areas. The proposed Project is illustrated on Figure 1.

The purpose of the field survey was to assess whether wetlands and other "waters of the United States (U.S.)" exist within the Project survey corridor. Secondarily, land uses were recorded in an effort to classify and characterize potential habitat for rare, threatened, and endangered species. This report will be used to assist AEP Ohio Transco's efforts to identify potential waters of the United States (U.S) and to avoid or minimize impacts to rare, threatened, and endangered species potentially present within the survey corridor during construction activities.

2.0 METHODOLOGY

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas.

During December 2017, AECOM ecologists walked the Project survey corridor to conduct a wetland delineation and stream assessment. The survey corridor was 200-foot wide and covered the existing transmission line right-of-way (ROW). During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was then reviewed and edited for accuracy.

Land uses crossed by the Project survey corridor were assigned a general classification based upon the principal land characteristics of the location as observed through aerial photography review and observations during the field surveys. General land use types in the vicinity of the proposed Project include: agricultural fields, wooded areas, scrub-shrub, and maintained transmission line ROW. Agricultural fields and maintained transmission line ROW are the dominant land uses in the vicinity of the Project.

2.1 WETLAND DELINEATION

The Project survey corridor was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (*1987 Manual*) (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest (Version 2.0) (*Regional Supplement*) (USACE, 2010). The Midwest Supplement was released by the USACE in August 2010 to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The *1987 Manual* and *Regional Supplement* define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are located where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the identified wetlands, AECOM utilized the routine delineation method described in the *1987 Manual* and *Regional Supplement* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.1.1 SOILS

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.1.2 HYDROLOGY

The *1987 Manual* requires that an area be inundated or saturated to the surface for a minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The *Regional Supplement* states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-in. depth) is 41 degree Fahrenheit (^{o}F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The *Regional Supplement* also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of 10, or 50 % probability) date of the last and first 28°F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center reveals for Clinton County that in an average year, this period lasts from April 10 to October 26, or 199 days; in Highland County, this period lasts from April 7 to October 3, or 210 days; in Warren County, this period lasts from April 9 to October 25, or 199 days. In the Project corridor, five percent of the growing season equates to approximately 10 days.

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and the *Regional Supplement.* Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2010).

2.1.3 VEGETATION

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the U.S. Army Corps of Engineers *2016 National Wetland Plant List: Midwest Region* (Lichvar et al, 2016), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE, 2010).

At the time of the field survey, the Project survey corridor was observed with near freezing temperatures. Vegetation sampling for wetland delineation can be challenging when some plants are covered by snow or die back due to freezing temperatures or other factors (USACE, 2010). The end of the growing season is indicated when woody deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever occurs latest. The wetland delineation field work within the Project corridor was conducted after the occurrence of these events and therefore, outside the normal growing season. Conducting a wetland delineation with freezing temperatures and

outside the normal growing season can make identifying the wetland/upland boundary more challenging and may require further assessment during the next growing season.

2.1.4 WETLAND CLASSIFICATIONS

Wetlands were classified based on the naming convention found in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979). The identified wetlands within the survey corridor were classified as freshwater, Palustrine systems, which includes non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. Two palustrine wetland classes were identified within the Project survey corridor:

- ***PEM*** – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- ***PFO*** – Palustrine forested wetlands are characterized by woody vegetation that is 3 inches or more DBH, regardless of total height. These wetlands generally include an overstory of broad-leaved and needle-leaved trees, an understory of young saplings and shrubs, and an herbaceous layer.

2.1.5 OHIO RAPID ASSESSMENT METHOD v. 5.0

The Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v. 5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between “Categories 1 and 2” from 30 to 34.9 and between “Categories 2 and 3” from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low

species diversity, no significant habitat for wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration, or is of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past, but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have "...superior habitat, or superior hydrological or recreational functions." They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit "superior" hydrologic functions (e.g. flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.2 STREAM ASSESSMENT

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE, 2005).

Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index (Rankin, 2006) and in the OEPA's Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (OEPA, 2012).

2.2.1 OEPA QUALITATIVE HABITAT EVALUATION INDEX

The Qualitative Habitat Evaluation Index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 15.75 in, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams. Headwater (H) streams are those with a watershed area less than or equal to 20 square miles. Larger streams (L) are those with a watershed area greater than 20 square miles. The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

2.2.2 OEPA PRIMARY HEADWATER HABITAT EVALUATION INDEX

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The Headwater Habitat Evaluation Index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with

watershed area less than or equal to 1.0 mi^2, and a maximum depth of water pools equal to or less than 15.75 inches" (OEPA, 2012).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the OEPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PHWH stream class using the HHEI protocol (OEPA, 2012). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

Class 1 PHWH Streams: Class 1 PHWH Streams are those that have "normally dry channels with little or no aquatic life present" (OEPA, 2012). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PHWH Streams: Class 2 PHWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm-water adapted native fauna either present seasonally or on an annual basis" (OEPA, 2012). These species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PHWH Streams: Class 3 PHWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PHWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a rare, threatened, and endangered species review and general field habitat surveys within areas crossed by the Project survey corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to rare, threatened and endangered species potentially present in the survey corridor during construction activities. The first phase of the survey involved a review of online lists of federal and state listed species. In addition to the review of available literature, AECOM submitted a request to the Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section soliciting comments on the Project. AECOM also submitted a coordination letter to the USFWS soliciting comments on the Project. Agency-identified species and available species-specific

information was reviewed to identify the various habitat types that listed species are known to inhabit. AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field survey in December 2017.

3.0 RESULTS

Within the Project survey corridor, AECOM delineated 33 wetlands, 131 streams, and 31 ponds. These features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils in the delineated wetlands were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Surveys of Clinton, Highland, and Warren Counties, Ohio (NRCS 2017) and the NRCS Hydric Soils Lists of Ohio, 42 soil series are mapped within the Project survey corridor (NRCS 2017). Of these soil series, 6 soil map units are listed as hydric. Table 1 provides a detailed overview of all soil series and soil map units within the Project survey corridor. Soil map units located within the Project survey corridor are shown on Figures 2A through 2KK.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HILLSBORO-HUTCHINGS 138 kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Algiers	Ag	Algiers silt loam	Flood plains	Not Hydric	Blanchester (5%)
Atlas silt loam	AtB2	Atlas silt loam, 2 to 6 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	AtC2	Atlas silt loam, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
Blanchester	Bln3A	Blanchester silty clay loam, 0 to 1 percent slopes	Flats on till plains	Hydric	Blanchester (90%), Clermont (10%)
Boston-Bratton	BmC2	Boston-Bratton complex, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
Brookston	Br	Brookston silty clay loam, fine-silty, 0 to 2 percent slopes	Depressions on till plains	Hydric	Brookston (90%), Clermont (5%)
Clermont	Cle1A	Clermont silt loam, 0 to 1 percent slopes	Flats on till plains, till plains, broad concave flats	Hydric	Clermont (90%), Blanchester (5%)

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HILLSBORO-HUTCHINGS 138 kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Cincinnati	CnB	Cincinnati silt loam, 2 to 6 percent slopes	Till plains	Not Hydric	Clermont (5%), Blanchester (2%0
	CnB2	Cincinnati silt loam, 2 to 6 percent slopes, eroded	Illinoin till plains	Not Hydric	N/A
	CnC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded	Illinoin till plains	Not Hydric	N/A
Dana	DaB	Dana silt loam, 2 to 6 percent slopes	Ground moraines on till plains	Not Hydric	Brookston (5%)
Edenton	EbD2	Edenton silt loam, 12 to 18 percent slopes, moderately eroded	Till Plains	Not Hydric	N/A
Eden	EdD2	Eden Complex, 12 to 18 percent slopes, moderately eroded	Hills	Not Hydric	N/A
	EdF2	Eden complex, 25 to 35 percent slopes, moderately eroded	Hills	Not Hydric	N/A
Eel	Ee	Eel silt loam, 0 to 2 percent slopes, occasionally flooded	Flood plains, till plains	Not Hydric	Sloan (5%)
Fairmount-Eden	FaF2	Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded	Hills	Not Hydric	N/A
Fitchville	FcB	Fitchville sitl loam, 2 to 6 percent slopes	Lake plains	Not Hydric	Westland (5%)
Fincastle	FhA	Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	Till plains on till plains	Not Hydric	Cyclone (5%), Ragsdale (5%)
Fox	FlB	Fox loam, 2 to 6 percent slopes	Stream terraces on outwash plains	Not Hydric	N/A
	FlC2	Fox loam, 6 to 12 percent slopes, moderately eroded	Terraces	Not Hydric	N/A
Genesee	Gd	Genesee fine sandy loam	Flood plains	Not Hydric	Sloan (5%)
	Gn	Genesee loam	Flood plains	Not Hydric	Sloan (5%)
Hennepin	HeF	Hennepin silt loam, 25 to 35 percent slopes	Till plains	Not Hydric	N/A
Hennepin-Miamian	HmE2	Hennepin-Miamian silt loams, 18 to 25 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
Henshaw	HoB	Henshaw silt loam, 1 to 4 percent slopes	Stream terraces	Not Hydric	Patton (5%)
Hickory	HiD2	Hickory silt loam, 12 to 18 percent slopes, eroded	Till plains	Not Hydric	N/A
	HkC2	Hickory silt loam, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HILLSBORO-HUTCHINGS 138 kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
	HkD2	Hickory silt loam, 12 to 18 percent slopes, eroded	Till plains	Not Hydric	N/A
	HkE2	Hickory silt loam, 18 to 25 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	HkF2	Hickory silt loam, 25-35 percent slopes, eroded	Till plains	Not Hydric	N/A
	HrC2	Hickory silt loam, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	HrD2	Hickory silt loam, 12 to 18 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	HsC3	Hickory clay loam, 6 to 12 percent slopes, severely eroded	Till plains	Not Hydric	N/A
	HsD3	Hickory clay loam, 12 to 18 percent slopes, severely eroded	Till plains	Not Hydric	N/A
Hickory-Fairmount	HtE2	Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded	Till plains, hills	Not Hydric	N/A
	HtF2	Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded	till plains, hills	Not Hydric	N/A
Jonesboro-Rossmoyne	JoR1A1	Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes	Rises on till plains, till plains, Illinoian till plains	Not Hydric	Clermont (4%)
	JoR1B1	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes	Rises on till plains, till plains, Illinoian till plains	Not Hydric	N/A
	JoR1B2	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded	Illinoin till plains, till plains	Not Hydric	N/A
	JrC2	Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes	Till plains	Not Hydric	N/A
Loudon	LoC2	Loudon silt loam, 6 to 12 percent slopes	Till plains	Not Hydric	N/A
Miamian	MmC3	Miamian clay loam, 6 to 12 percent slopes, severaly eroded	Till plains on till plains	Not Hydric	Brookston (5%)
Miamian-Russell	MrC2	Miamian-Russel silt loams, 6 to 12 percent slopes, eroded	Till plains on till plains	Not Hydric	Treaty (5%)
Morrisville	MvD2	Morrisville silty clay loam, 12 to 18 percent slopes	Till plains	Not Hydric	N/A
	MvE2	Morrisville silty clay loam, 18 to 25 percent slopes	Till plains	Not Hydric	N/A
Nicely	NhC2	Nicely silt loam, 6 to 12 percent slopes	Till plains	Not Hydric	N/A
Ockley	OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	Outwash plains, outwash terraces	Not Hydric	N/A

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HILLSBORO-HUTCHINGS 138 kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Patton	Pc	Patton silty clay loam, 0 to 2 percent slopes	Depressions on till plains	Hydric	Patton, drained (80%)
Plattville	PlB	Plattville silt loam, 1 to 6 percent slopes	Till plains	Not Hydric	Brookston (5%)
Ross	Rn	Ross loam, 0 to 2 percent slopes, occasionally flooded	Flood-plain steps, rivey valleys	Not Hydric	Sloan (5%)
Rossmoyne	RpC2	Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	RsC3	Rossmoyne silty clay loam, 6 to 12 percent slopes, severely eroded	Till plains	Not Hydric	Clermont (2%)
Russell-Miamian	RvA	Russell-Miamian silt loams, 0 to 2 percent slopes	Till Plains	Not Hydric	Brookston (3%), Ragsdale (2%)
	RvB	Russell-Miamian silt loams, 2 to 6 percent slopes	Till plains	Not Hydric	N/A
	RvB2	Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
Shoals	Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded	Flood plains on alluvial plains	Not Hydric	Sloan (4%)
Sleeth	SlA	Sleeth silt loam, 0 to 2 percent slopes	Outwash terraces	Not Hydric	Westland (5%)
Sligo	SmA	Sligo silt loam, 0 to 1 percent slopes, occasionally flooded	Flood plains	Not Hydric	Sloan (5%)
Sloan	SnA	Sloan silt loam, sandy substratum, 0 to 1 percent slopes, occasionally flooded	Depression on flood plains	Hydric	Sloan (90%)
Williamsburg	WlA	Williamsburg silt loam, 0 to 2 percent slopes	High terraces	Not Hydric	N/A
	WlB	Williamsburg silt loam, 2 to 6 percent slopes	High terraces	Not Hydric	N/A
	WlC2	Williamsburg silt loam, 6 to 12 percent slopes, moderatley eroded	High terraces	Not Hydric	N/A
Westland	Ws	Westland silt loam, overwash	Outwash terraces	Hydric	Westland (100%)
Westboro-Schaffer	WsS1A1	Westboro-Schaffer silt loams, 0 to 2 percent slopes	Till plains, Illinoian till plains	Not Hydric	Clermont (9%)
	WsS1B1	Westboro-Schaffer silt loams, 2 to 4 percent slopes	Flats on till plains, flats	Not Hydric	Clermont (2%)
Wynn	WyB	Wynn silt loam, 2 to 6 percent slopes	Till plains	Not Hydric	N/A
	WyB2	Wynn silt loam, 2 to 6 percent slopes, moderately eroded	Till plains	Not Hydric	N/A
	WyC2	Wynn silt loam, 6 to 12 percent slopes, moderately eroded	Till plains	Not Hydric	N/A

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HILLSBORO-HUTCHINGS 138 kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Xenia	XeB	Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	Till plains on till plains	Not Hydric	Cyclone (5%)

(1) Data sources include:

USDA, NRCS. 2017 Soil Survey Geographic (SSURGO) Database. Available online at: https://websoilsurvey.nrcs.usda.gov/app/

USDA, NRCS. December 2015. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

3.1.2 National Wetland Inventory Map Review

National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the NWI maps of the Monroe, Lebanon, Oregonia, Pleasant Plain, Blanchester, Martinsville, Lynchburg, and New Market, Ohio quadrangles, the Project survey corridor contains 81 mapped NWI wetlands. The NWI wetlands were identified as:

- one palustrine, aquatic bed, intermittently exposed, excavated wetland (PABGx);
- one palustrine emergent, persistent, temporarily flooded, partly drained/ditched wetland (PEM1Ad),
- one palustrine emergent, persistent, seasonally flooded, diked/impounded wetland (PEM1Ch);
- one palustrine emergent, persistent, semipermanently flooded, diked/impounded wetland (PEM1Fh);
- one palustrine, forested, broad-leaf deciduous, temporarily flooded wetland (PFO1A);
- one palustrine, forested, broad-leaf deciduous, temporarily flooded, partly drained/ditched wetland (PFO1Ad);
- one palustrine, shrub/scrub, broad-leaved deciduous, temporarily flooded wetland (PSS1A);
- 23 palustrine, unconsolidated bottom, intermittently exposed, diked/impounded wetlands (PUBGh);
- six palustrine, unconsolidated bottom, intermittently exposed, excavated wetlands (PUBGx);
- one riverine, lower perennial, unconsolidated bottom, intermittently exposed wetland (R2UBG);
- five riverine, lower perennial, unconsolidated bottom, permanently flooded wetlands (R2UBH);
- one riverine, lower perennial, unconsolidated shore, temporarily flooded wetland (R2USA);
- two riverine, upper perennial, unconsolidated bottom, permanently flooded wetlands (R3UBH);
- 22 riverine, intermittent, stream bed, seasonally flooded wetlands (R4SBC); and

- 14 riverine, unknown perennial, unconsolidated bottom, permanently flooded wetland (R5UBH).

The locations of the NWI mapped wetlands are shown on Figure 2A through Figure 2KK.

3.1.3 Delineated Wetlands

During the field survey, AECOM identified a total of 33 wetlands, ranging in size from <0.01 to 1.65 acres, within the Project survey corridor. Some wetland boundaries extend beyond the Project survey corridor, but only what was identified within the Project survey corridor was assessed. The 33 wetlands within the Project survey corridor are of two different wetland habitat types: 32 PEM wetlands and one PFO wetland. See Table 2 for a summary of the delineated wetlands within the Project survey corridor.

Additionally, AECOM commonly splits wetlands where there is an obvious break between Cowardin wetland types. This split results in each wetland section being assessed independently; however, AECOM recognizes that split wetland sections are components of a larger wetland complex.

The locations and approximate extent of the wetlands identified within the Project survey corridor are shown on Figures 3A through Figure 3BBBB. Completed USACE and ORAM wetland delineation forms are provided in Appendix A and B, respectively. Representative color photographs taken of the wetlands are provided in Appendix D.

TABLE 2
DELINEATED WETLANDS WITHIN THE HILLSBORO-HUTCHINGS 138kV TRANMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Wetland Name	Latitude	Longitude	Cowardin Wetland Type[a]	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)[b]	Acreage within Project Survey Corridor
Wetland 01	39.180753	-83.694444	PEM	28.0	Category 1	45	0.12
Wetland 02	39.181710	-83.696989	PEM	27.0	Category 1	157	0.21
Wetland 03	39.189850	-83.715317	PEM	15.0	Category 1	NC	0.05
Wetland 04	39.190437	-83.716223	PEM	14.0	Category 1	NC	<0.01
Wetland 05	39.191112	-83.718549	PEM	18.0	Category 1	237	1.23
Wetland 06	39.192082	-83.720767	PEM	16.0	Category 1	55	0.54
Wetland 07	39.245208	-83.838113	PEM	15.5	Category 1	NC	0.25
Wetland 08	39.224588	-83.796277	PEM	21.5	Category 1	13	0.03
Wetland 09	39.238332	-83.834460	PEM	15.5	Category 1	NC	0.01
Wetland 10	39.242234	-83.845319	PEM	16.5	Category 1	NC	0.04
Wetland 11	39.252677	-83.871157	PEM	31.0	Category 2	466	1.65
Wetland 12	39.269705	-83.911792	PEM	27.5	Category 1	16	0.07
Wetland 13	39.281729	-83.933788	PEM	17.5	Category 1	NC	0.06
Wetland 14	39.295808	-83.957814	PEM	11.0	Category 1	75	0.31
Wetland 15	39.318802	-83.992668	PEM	26.0	Category 1	14	0.06
Wetland 16	39.327323	-84.007113	PEM	26.5	Category 1	NC	0.11
Wetland 17	39.340064	-84.028032	PEM	22.0	Category 1	285	0.58

TABLE 2
DELINEATED WETLANDS WITHIN THE HILLSBORO-HUTCHINGS 138kV TRANMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Wetland Name	Latitude	Longitude	Cowardin Wetland Type[a]	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)[b]	Acreage within Project Survey Corridor
Wetland 18	39.342994	-84.032716	PEM	14.5	Category 1	69	0.20
Wetland 19	39.346064	-84.038162	PEM	18.0	Category 1	NC	0.08
Wetland 20	39.356607	-84.055840	PEM	16.5	Category 1	NC	0.09
Wetland 21	39.363071	-84.071842	PEM	18.0	Category 1	141	0.38
Wetland 22	39.364992	-84.078353	PEM	26.0	Category 1	43	0.18
Wetland 23a	39.365231	-84.079431	PEM	37.0	Category 2	13	0.07
Wetland 23b	39.365231	-84.079431	PFO	37.0	Category 2	NC	<0.01
Wetland 24	39.365766	-84.080606	PEM	26.0	Category 1	NC	0.20
Wetland 25	39.376291	-84.116877	PEM	15.5	Category 1	20	0.08
Wetland 26	39.383181	-84.142236	PEM	20.5	Category 1	76	0.14
Wetland 27	39.387658	-84.159192	PEM	17.5	Category 1	45	0.05
Wetland 28	39.388706	-84.163315	PEM	29.0	Category 1	232	0.91
Wetland 29	39.402562	-84.211626	PEM	15.5	Category 1	13	0.02
Wetland 30	39.414032	-84.251544	PEM	16.5	Category 1	NC	0.08
Wetland 31	39.415139	-84.257051	PEM	17.0	Category 1	NC	0.01
Wetland 32	39.417382	-84.269792	PEM	26.0	Category 1	53	0.06
Total: 33 Wetlands						**2,068**	**7.89**

Cowardin Wetland Type[a] : PEM = palustrine emergent, PFO = palustrine forested
Linear Feet Crossed by Centerline (feet)[b] : NC = Not Crossed by proposed centerline

3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project survey corridor, 30 wetlands are Category 1 wetlands and three wetlands are Category 2 wetlands. Wetland 14 received the lowest ORAM score, 11, while Wetlands 23a and 23b had the highest score, 37. A breakdown of ORAM scores can be found in Table 2 and Table 3. Completed ORAM forms are provided in Appendix B.

Category 1 Wetlands

The Category 1 wetlands delineated within the Project survey consist of 30 PEM wetlands. The lowest scoring Category 1 wetland was Wetland 14, with a score of 11 while Wetland 28 scored 29. The wetlands exhibited very narrow to medium upland buffers and a range of very low (2nd growth or older forest) to high intensive surrounding land use (agricultural). The wetlands also exhibited poor to fair plant community development with a sparse to extensive percentage of invasive species, and characteristically had habitat and hydrology in the early stages of recovering from previous manipulation due to mowing, clear cutting, nutrient enrichment, and other disturbances.

Category 2 Wetlands

The three Category 2 wetlands delineated within the Project survey corridor include two PEM wetlands and one PFO wetland. The lowest Category 2 wetland was Wetland 11 with a score of 31 and the highest scoring wetlands were Wetlands 23a and 23b, both with a score of 37. These wetlands generally exhibited medium upland buffers and low (old field, shrub land, and young second growth forest) to moderately high land use (residential, fenced, pasture, park, and conservation tillage). These wetlands also exhibited fair habitat development with a nearly absent to sparse coverage of invasive species. These wetlands characteristically had habitat and hydrology recovering or recovered from previous manipulation due to mowing, selective cutting, and other likely disturbances.

Category 3 Wetlands

No Category 3 wetlands were identified during the surveys.

TABLE 3

SUMMARY OF DELINEATED WETLANDS WITHIN THE HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Cowardin Wetland Type[a]	ORAM Category 1	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project Survey Corridor	Length Crossed by Centerline (feet)[b]
PEM	30	2	0	32	7.88	2068
PFO	0	1	0	1	<0.01	NC
Total	**30**	**3**	**0**	**33**	**7.89**	**2068**

Cowardin Wetland Type[a] : PFO = palustrine forested, PEM = palustrine emergent

Linear Feet Crossed by Centerline (feet)[b] : NC = Not crossed by centerline

3.2 STREAM CROSSINGS

AECOM identified 131 streams, totaling 37,745 linear feet, within the Project survey corridor, as listed in Table 4. The streams are comprised of 50 ephemeral streams, 55 intermittent streams, and 26 perennial streams. The locations of the streams identified within the survey corridor are shown on Figures 3A through 3BBBB.

The OEPA has established water use designation for streams throughout Ohio as outlined in the Ohio Administrative Code (OAC), OAC-3745-1-07. Water use designations within the Little Miami River drainage basin are regulated under OAC-3745-1-18. The Little Miami River was identified with a state of Ohio aquatic use designation of Exceptional Warmwater habitat (EWH) and Second Creek, Turtle Creek and Todd Fork were identified with a state of Ohio aquatic use designation of Warmwater habitat (WWH).

HHEI evaluations were conducted on 110 streams within the Project survey corridor. QHEI evaluations were conducted on 17 streams in the survey corridor and four streams (Little Miami River, Second Creek, Turtle Creek and Todd Fork) were not assessed since they are larger waterbodies and have an OEPA aquatic use designation. The evaluations were conducted at or near the proposed transmission line crossing or access road crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

AECOM has preliminarily determined that all assessed streams within the Project survey corridor appear to be jurisdictional (i.e., waters of the U.S.), as they all appear to be tributaries that flow into or combine with other streams (waters of the U.S).

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 01	39.174027	-83.677575	Tributary to Rocky Fork	Ephemeral	1	4	HHEI	28.0	Modified Class 1	NC	94
Stream 02	39.175462	-83.682906	Tributary to Rocky Fork	Intermittent	5	2	HHEI	40.0	Modified Class 2	NC	105
Stream 03	39.178746	-83.689573	Tributary to Rocky Fork	Ephemeral	.8	1	HHEI	17.0	Modified Class 1	NC	207
Stream 04	39.179916	-83.693071	Tributary to Rocky Fork	Ephemeral	.5	.5	HHEI	18.0	Modified Class 1	Yes	237
Stream 05	39.180451	-83.693275	Tributary to Rocky Fork	Ephemeral	1	1	HHEI	18.0	Modified Class 1	NC	113
Stream 06	39.180791	-83.694430	Tributary to South Fork Dodson Creek	Intermittent	1	1	HHEI	18.0	Modified Class 1	Yes	380
Stream 07	39.180934	-83.694829	Tributary to South Fork Dodson Creek	Ephemeral	1	1	HHEI	18.0	Modified Class 1	NC	192
Stream 08	39.181651	-83.698120	Tributary to South Fork Dodson Creek	Intermittent	1	3	HHEI	29.0	Modified Class 1	Yes	786
Stream 09	39.186941	-83.709243	Tributary to South Fork Dodson Creek	Ephemeral	1	2	HHEI	25.0	Modified Class 1	Yes	969
Stream 10	39.188242	-83.712045	Tributary to South Fork Dodson Creek	Intermittent	3	6	HHEI	40.0	Modified Class 2	Yes	317
Stream 11	39.189282	-83.713714	Tributary to South Fork Dodson Creek	Ephemeral	1	1	HHEI	18.0	Modified Class 1	NC	48
Stream 12	39.191495	-83.719648	Tributary to South Fork Dodson Creek	Intermittent	2	6	HHEI	36.0	Modified Class 2	Yes	255
Stream 13	39.193395	-83.725072	Tributary to Pond 05	Intermittent	1	3	HHEI	30.0	Modified Class 1	Yes	90
Stream 14	39.196391	-83.732432	Tributary to South Fork Dodson Creek	Ephemeral	2	2	HHEI	18.0	Modified Class 1	NC	21
Stream 15	39.197013	-83.732641	Tributary to South Fork Dodson Creek	Ephemeral	1	1	HHEI	19.0	Modified Class 1	Yes	253
Stream 16	39.198855	-83.735783	Tributary to South Fork Dodson Creek	Perennial	15	24	QHEI	55.5	Good Warmwater	Yes	209
Stream 17	39.200010	-83.737470	Tributary to South Fork Dodson Creek	Ephemeral	1	1	HHEI	18.0	Modified Class 1	Yes	754
Stream 18	39.203330	-83.743532	Dodson Creek	Perennial	12	18	QHEI	47.5	Fair Warmwater	Yes	214

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 19	39.210735	-83.759483	Tributary to Dodson Creek	Perennial	10	-	QHEI	48.0	Fair Warmwater	Yes	397
Stream 20	39.210783	-83.759543	Tributary to Dodson Creek	Intermittent	4.5	6	HHEI	57.0	Class 2	NC	33
Stream 21	39.214492	-83.769075	Tributary to Dodson Creek	Intermittent	3.5	10	HHEI	57.0	Modified Class 2	Yes	213
Stream 22	39.219718	-83.783578	Tributary to Anthony Run	Intermittent	3	5	HHEI	44.0	Modified Class 2	Yes	470
Stream 23	39.222180	-83.789988	Tributary to Anthony Run	Intermittent	2.5	4	HHEI	44.0	Modified Class 2	Yes	234
Stream 24	39.227290	-83.801937	Tributary to East Fork Little Miami River	Intermittent	2.0	2	HHEI	37.0	Modified Class 2	Yes	1,259
Stream 25	39.225130	-83.797574	Tributary to East Fork Little Miami River	Ephemeral	1	1	HHEI	19.0	Class 1	Yes	220
Stream 26	39.228840	-83.807049	East Fork Little Miami River	Perennial	30	24	QHEI	56.5	Good Warmwater	Yes	211
Stream 27	39.229801	-83.810021	Tributary to East Fork Little Miami River	Intermittent	2.0	2	HHEI	20.0	Class 1	Yes	232
Stream 28	39.230879	-83.813739	Tributary to East Fork Little Miami River	Intermittent	2.0	2	HHEI	21.0	Modified Class 1	NC	55
Stream 29	39.233201	-83.819751	Tributary to East Fork Little Miami River	Ephemeral	1.0	2	HHEI	19.0	Modified Class 1	Yes	206
Stream 30	39.235751	-83.827707	Tributary to East Fork Little Miami River	Ephemeral	1.5	1	HHEI	20.0	Class 1	Yes	362
Stream 31	39.236270	-83.828552	Tributary to East Fork Little Miami River	Perennial	12	16	QHEI	55.0	Good Warmwater	Yes	234
Stream 32	39.238363	-83.834863	Tributary to East Fork Little Miami River	Intermittent	1.0	1	HHEI	18.0	Class 1	Yes	213
Stream 33	39.240669	-83.842027	Tributary to East Fork Little Miami River	Intermittent	2.0	2	HHEI	20.0	Modified Class 1	NC	330

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 34	39.240854	-83.842536	Tributary to East Fork Little Miami River	Perennial	8.0	12	QHEI	56.5	Good Warmwater	Yes	325
Stream 35	39.241633	-83.844538	Tributary to East Fork Little Miami River	Intermittent	3.0	1	HHEI	29.0	Modified Class 1	Yes	317
Stream 36	39.244773	-83.851935	Tributary to East Fork Little Miami River	Intermittent	1.0	1	HHEI	20.0	Modified Class 1	Yes	212
Stream 37	39.244833	-83.852421	Tributary to East Fork Little Miami River	Intermittent	2.5	1	HHEI	18.0	Modified Class 1	Yes	270
Stream 38	39.248398	-83.860834	Tributary to East Fork Little Miami River	Perennial	6.0	6	QHEI	59.0	Good Warmwater	Yes	269
Stream 39	39.248431	-83.861836	Tributary to East Fork Little Miami River	Ephemeral	2.0	1	HHEI	20.0	Modified Class 1	NC	21
Stream 40	39.251274	-83.867894	Tributary to East Fork Little Miami River	Intermittent	4.0	16	HHEI	52.0	Class 2	Yes	254
Stream 41	39.258146	-83.885557	Tributary to West Fork Little Miami River	Perennial	7.0	12	QHEI	45.3	Fair Warmwater	Yes	215
Stream 42	39.269580	-83.912658	West Fork Little Miami River	Perennial	-	-	QHEI	60.8	Good Warmwater	Yes	203
Stream 43	39.271820	-83.916519	Tributary to West Fork Little Miami River	Intermittent	2.5	3	HHEI	19.0	Modified Class 1	Yes	252
Stream 44	39.274139	-83.921099	Tributary to West Fork Little Miami River	Ephemeral	1.0	0.5	HHEI	18.0	Modified Class 1	NC	175
Stream 45	39.274433	-83.921777	Tributary to West Fork Little Miami River	Perennial	6.0	12	QHEI	53.0	Fair Warmwater	Yes	235
Stream 46	39.282370	-83.935352	Tributary to West Fork Little Miami River	Intermittent	3.5	3	HHEI	46.0	Class 2	Yes	205
Stream 47	39.294875	-83.956484	Whitakers Run	Intermittent	3.5	6	HHEI	46.0	Class 2	Yes	213

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 48	39.294786	-83.956788	Tributary to Whitakers Run	Intermittent	1.5	1	HHEI	26.0	Class 1	NC	57
Stream 49	39.302318	-83.967370	Tributary to Second Creek	Ephemeral	1.0	1	HHEI	18.0	Modified Class 1	Yes	202
Stream 50	39.306612	-83.973784	Tributary to Second Creek	Ephemeral	1.0	1	HHEI	19.0	Modified Class 1	Yes	153
Stream 51	39.306751	-83.973988	Second Creek	Perennial	10.0	12	NA	NA	Warmwater Habitat*	Yes	207
Stream 52	39.312362	-83.982428	Tributary to Lick Run	Perennial	5.5	8	QHEI	27.0	Very Poor Warmwater	Yes	207
Stream 53	39.317355	-83.990586	Tributary to Lick Run	Ephemeral	2	1	HHEI	22.0	Modified Class 1	Yes	344
Stream 54	39.318184	-83.991324	Tributary to Lick Run	Intermittent	2.5	3	HHEI	35.0	Modified Class 2	Yes	287
Stream 55	39.321088	-83.996674	Lick Run	Perennial	12	16	QHEI	60.0	Good Warmwater	Yes	229
Stream 56	39.322225	-83.998477	Tributary to Lick Run	Ephemeral	1.5	1	HHEI	21.0	Modified Class 1	Yes	334
Stream 57	39.326919	-84.006126	Tributary to Lick Run	Intermittent	2	4	HHEI	29.0	Modified Class 1	Yes	584
Stream 58	39.327807	-84.007294	Tributary to Lick Run	Perennial	6	12	HHEI	58.0	Modified Class 2	Yes	374
Stream 59	39.329068	-84.009999	Tributary to Lick Run	Ephemeral	1	1	HHEI	18.0	Modified Class 1	Yes	285
Stream 60	39.329221	-84.010662	Tributary to Lick Run	Ephemeral	1.5	1	HHEI	20.0	Modified Class 1	NC	44
Stream 61	39.331906	-84.014461	Tributary to Lick Run	Perennial	15	20	QHEI	62.0	Good Warmwater	Yes	683
Stream 62	39.332275	-84.014780	Tributary to Lick Run	Ephemeral	1.5	1	HHEI	21.0	Modified Class 1	Yes	84
Stream 63	39.334572	-84.018939	Tributary to Lick Run	Intermittent	1.5	1	HHEI	22.0	Modified Class 1	Yes	568
Stream 64	39.337564	-84.023796	Tributary to Lick Run	Ephemeral	1.5	1	HHEI	22.0	Modified Class 1	Yes	445
Stream 65	39.341130	-84.029797	Kunkers Run	Intermittent	3	1	HHEI	20.0	Modified Class 1	Yes	249

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 66	39.343229	-84.033106	Tributary to Kunkers Run	Intermittent	3	3	HHEI	38.0	Modified Class 2	Yes	226
Stream 67	39.347364	-84.039535	Tributary to Sugar Run	Intermittent	2	2	HHEI	28.0	Modified Class 1	Yes	689
Stream 68	39.347983	-84.041137	Sugar Run	Perennial	8.5	9	HHEI	69.0	Modified Class 2	Yes	257
Stream 69	39.348515	-84.042216	Tributary to Sugar Run	Ephemeral	2	1	HHEI	21.0	Modified Class 1	NC	56
Stream 70	39.352000	-84.047137	Tributary to Todd Fork	Ephemeral	2.5	1	HHEI	22.0	Modified Class 2	Yes	551
Stream 71	39.351928	-84.047805	Tributary to Todd Fork	Ephemeral	3	1	HHEI	31.0	Class 2	NC	53
Stream 72	39.352151	-84.047787	Tributary to Todd Fork	Intermittent	9	7	HHEI	67.0	Class 2	Yes	245
Stream 73	39.357493	-84.057031	Tributary to Todd Fork	Intermittent	3	2	HHEI	30.0	Modified Class 2	Yes	421
Stream 74	39.361021	-84.066122	Todd Fork	Perennial	50	>36	NA	NA	Warmwater Habitat*	Yes	207
Stream 75	39.361546	-84.067889	Tributary to Todd Fork	Ephemeral	2	0	HHEI	18.0	Modified Class 1	Yes	490
Stream 76	39.365306	-84.079173	Tributary to Whitakers Run	Intermittent	2	5	HHEI	40.0	Modified Class 2	Yes	260
Stream 77	39.365622	-84.080074	Tributary to Whitakers Run	Ephemeral	1	1	HHEI	21.0	Modified Class 1	Yes	189
Stream 78	39.367722	-84.086266	Tributary To Little Miami River	Ephemeral	1.5	1	HHEI	22.0	Modified Class 1	NC	683
Stream 79	39.368029	-84.087360	Tributary to Little Miami River	Intermittent	3	3	HHEI	41.0	Modified Class 2	Yes	252
Stream 80	39.367950	-84.087752	Tributary to Little Miami River	Ephemeral	1	0	HHEI	16.0	Modified Class 1	NC	73
Stream 81	39.369715	-84.092764	Tributary to Little Miami River	Intermittent	2	2	HHEI	21.0	Modified Class 1	Yes	324
Stream 82	39.371444	-84.098499	Little Miami River	Perennial	100	>36	NA	NA	Exceptional Warmwater Habitat*	Yes	460
Stream 83	39.371939	-84.099471	Tributary to Little Miami River	Ephemeral	3	2	HHEI	30.0	Modified Class 2	Yes	451

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 84	39.372049	-84.099921	Tributary to Little Miami River	Ephemeral	2	0	HHEI	30.0	Modified Class 2	NC	193
Stream 85	39.372817	-84.104637	Tributary to Little Miami River	Ephemeral	1.5	2	HHEI	37.0	Modified Class 2	NC	96
Stream 86	39.373196	-84.105781	Tributary to Little Miami River	Ephemeral	2	1	HHEI	21.0	Modified Class 1	NC	119
Stream 87	39.373405	-84.106380	Tributary to Little Miami River	Intermittent	2.5	2	HHEI	38.0	Modified Class 2	Yes	397
Stream 88	39.374907	-84.111588	Tributary to Little Miami River	Ephemeral	1.5	0	HHEI	17.0	Class 1	NC	118
Stream 89	39.374996	-84.111820	Tributary to Little Miami River	Intermittent	6	9	HHEI	64.0	Class 2	Yes	223
Stream 90	39.375226	-84.113511	Tributary to Little Miami River	Intermittent	6	15	HHEI	62.0	Modified Class 2	Yes	376
Stream 91	39.376566	-84.117788	Tributary to Muntz Run	Intermittent	1	2	HHEI	32.0	Modified Class 2	Yes	339
Stream 92	39.379590	-84.129212	Grays Run	Intermittent	4.5	8	HHEI	61.0	Modified Class 2	Yes	214
Stream 93	39.381148	-84.134976	Halls Creek	Perennial	12	20	QHEI	58.5	Good Warmwater	Yes	298
Stream 94	39.381786	-84.136598	Tributary to Halls Creek	Ephemeral	1.0	1	HHEI	21.0	Modified Class 1	Yes	292
Stream 95	39.381940	-84.137933	Tributary to Halls Creek	Intermittent	3.0	6	HHEI	50.0	Modified Class 2	Yes	275
Stream 96	39.384811	-84.149407	Tributary to Halls Creek	Intermittent	3.0	3	HHEI	41.0	Modified Class 2	Yes	321
Stream 97	39.385875	-84.153270	Tributary to Halls Creek	Perennial	6.0	10	HHEI	64.0	Modified Class 2	Yes	230
Stream 98	39.386231	-84.153631	Tributary to Halls Creek	Intermittent	2.5	4	HHEI	35.0	Modified Class 2	NC	232
Stream 99	39.386474	-84.154535	Tributary to Halls Creek	Ephemeral	1.5	0	HHEI	16.0	Modified Class 1	Yes	112
Stream 100	39.387118	-84.156739	Tributary to Halls Creek	Ephemeral	1.0	0	HHEI	15.0	Modified Class 1	Yes	174
Stream 101	39.389676	-84.166922	Baker Creek	Intermittent	3.0	3	HHEI	34.0	Modified Class 2	Yes	314

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 102	39.391026	-84.170928	Tributary to Dry Run	Ephemeral	2.0	0	HHEI	17.0	Modified Class 1	NC	111
Stream 103	39.391214	-84.173245	Tributary to Dry Run	Intermittent	3	6	HHEI	45.0	Modified Class 2	Yes	1,579
Stream 104	39.391522	-84.174566	Tributary to Dry Run	Ephemeral	1.5	1	HHEI	21.0	Modified Class 1	NC	105
Stream 105	39.392135	-84.176626	Tributary to Dry Run	Ephemeral	1.0	1	HHEI	21.0	Modified Class 1	Yes	257
Stream 106	39.392696	-84.177765	Tributary to Dry Run	Perennial	4.0	8	HHEI	61.0	Modified Class 2	Yes	380
Stream 107	39.393003	-84.179518	Tributary to Dry Run	Intermittent	2.5	4	HHEI	37.0	Modified Class 2	Yes	257
Stream 108	39.395200	-84.188974	Dry Run	Perennial	20	16	QHEI	52.0	Fair Warmwater	Yes	271
Stream 109	39.395361	-84.189927	Tributary to Dry Run	Intermittent	3.0	3	HHEI	41.0	Modified Class 2	Yes	214
Stream 110	39.396065	-84.192625	Tributary to Bee Run	Intermittent	3.5	4	HHEI	42.0	Modified Class 2	Yes	249
Stream 111	39.396545	-84.194642	Tributary to Bee Run	Ephemeral	3.0	2	HHEI	39.0	Modified Class 2	NC	39
Stream 112	39.397369	-84.196339	Bee Run	Perennial	15	24	QHEI	63.5	Good Warmwater	Yes	260
Stream 113	39.398389	-84.199475	Tributary to Bee Run	Perennial	8.0	24	QHEI	58.5	Good Warmwater	Yes	298
Stream 114	39.398695	-84.200014	Tributary to Bee Run	Ephemeral	2.0	2	HHEI	29.0	Modified Class 1	Yes	281
Stream 115	39.399235	-84.202139	Tributary to Bee Run	Ephemeral	1.5	1	HHEI	19.0	Modified Class 1	Yes	336
Stream 116	39.400849	-84.206198	Tributary to Bee Run	Ephemeral	2.0	1	HHEI	19.0	Modified Class 1	Yes	108
Stream 117	39.404093	-84.216596	Tributary to Turtle Creek	Ephemeral	2.0	1	HHEI	20.0	Modified Class 1	Yes	887
Stream 118	39.404914	-84.218133	Tributary to Turtle Creek	Intermittent	1.5	5	HHEI	44.0	Modified Class 2	NC	205
Stream 119	39.406558	-84.224048	Tributary to Turtle Creek	Ephemeral	2.5	2	HHEI	24.0	Modified Class 1	Yes	253

TABLE 4
STREAMS IDENTIFIED WITHIN HILLSBORO-HUTCHINGS 138kV TRANSMISSION LINE REBUILD PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score[b]	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 120	39.407123	-84.225838	Tributary to Turtle Creek	Perennial	8	10	HHEI	64.0	Modified Class 2	Yes	243
Stream 121	39.408894	-84.231489	Tributary to Turtle Creek	Intermittent	3	4	HHEI	32.0	Modified Class 2	Yes	737
Stream 122	39.409784	-84.233530	Tributary to Turtle Creek	Intermittent	3.5	6	HHEI	52.0	Modified Class 2	Yes	329
Stream 123	39.409784	-84.233910	Tributary to Turtle Creek	Ephemeral	1.0	1	HHEI	22.0	Modified Class 1	Yes	107
Stream 124	39.409671	-84.234386	Tributary to Turtle Creek	Ephemeral	1.5	1	HHEI	21.0	Modified Class 1	NC	50
Stream 125	39.411912	-84.240099	Turtle Creek	Perennial	30	>36	NA	NA	Warmwater Habitat*	Yes	234
Stream 126	39.413066	-84.246473	Tributary to Turtle Creek	Intermittent	3	3	HHEI	40.0	Modified Class 2	NC	157
Stream 127	39.414053	-84.252154	Tributary to Turtle Creek	Intermittent	2	4	HHEI	29.0	Modified Class 1	NC	216
Stream 128	39.417908	-84.273983	Keever Creek	Intermittent	3.5	14	HHEI	56.0	Modified Class 2	Yes	270
Stream 129	39.419532	-84.280926	Tributary to Keever Creek	Ephemeral	3	1	HHEI	28.0	Modified Class 1	NC	45
Stream 130	39.419132	-84.281366	Tributary to Keever Creek	Intermittent	3	15	HHEI	33.0	Modified Class 2	Yes	390
Stream 131	39.420703	-84.289976	Tributary to Station Creek	Intermittent	3	5	HHEI	39.0	Modified Class 2	Yes	251
Totals: 131 Streams											**37,745**

Form Used[a] : QHEI = Qualitative Habitat Evaluation Index, HHEI = Headwater Habitat Evaluation Index, NA = Not Assessed (default to the State of Ohio's assessment)
Score[b] : NA = Not Assessed (default to the State of Ohio's assessment)
* = Narrative description is based on Ohio Environmental Protection Agency's ranking. See Ohio Administrative Code 3745-1-07.

3.2.1 Qualitative Habitat Evaluation Index

Seventeen streams within the Project survey corridor were assessed using the QHEI methodology including: one Very Poor Warmwater habitat stream, five Fair Warmwater habitat streams, and 11 Good Warmwater habitat streams. Including the Little Miami River, Second Creek, Turtle Creek and Todd Fork, the 21 perennial streams totaled 5,864 linear feet within the Project survey corridor. The forms for the streams assessed using the QHEI methodology are provided in Appendix C.

Very Poor Warmwater Habitat Streams – Stream 58, totaling 207 linear feet, was classified as a Very Poor Warmwater habitat stream, with a QHEI score of 27. The substrate of this stream was estimated to primarily consist of silt with smaller amounts of detritus and artificial material. The stream showed evidence of heavy to moderate bank erosion, moderate channel sinuosity, poor channel development, and overhanging vegetation and shallows (in slow water) as in-stream cover. The maximum pool depth was eight inches and the average bankfull width was 5.5 feet.

Fair Warmwater Habitat Streams – Five streams, totaling 1,331 linear feet, were classified as Fair Warmwater Habitat streams, with QHEI scores ranging from 47.5 (Stream 18), to 53 (Stream 45). The substrate of these streams primarily consisted of gravel, sand and silts with smaller amounts of cobble, boulder, and artificial material. The streams generally showed evidence of heavy to moderate bank erosion, low channel sinuosity, fair to poor channel development, and overhanging vegetation, undercut banks, root wads, and logs/woody debris as in-stream cover. Maximum pool depth ranged from 12 to 18 inches and the average bankfull width ranged from six to 20 feet.

Good Warmwater Habitat Streams – Eleven streams, totaling 3,219 linear feet, were classified as Good Warmwater Habitat streams, with a QHEI scores ranging from 55 (Stream 31), to 63.5 (Stream 112). The substrate of these streams generally consisted of gravel, sand, cobble and silt with smaller amounts of boulder, bedrock, detritus and artificial material. The streams generally showed evidence of moderate to heavy bank erosion, low channel sinuosity, good to fair channel development, and overhanging vegetation, undercut banks, root wads, pools > 70cm, root mats, and logs/woody debris as in-stream cover. Maximum pool depth ranged from six to 24 inches and the average bankfull width ranged from six to 30 feet.

3.2.2 Primary Headwater Habitat Evaluation Index

One hundred and ten headwater streams, totaling 31,881 linear feet, were identified within the Project survey corridor. These streams included six Class 1 streams, 57 Modified Class 1 streams, seven Class 2 streams, and 40 Modified Class 2 streams. Completed HHEI forms for each stream are provided in Appendix C. Representative color photographs were taken during the field survey and are provided in Appendix D.

Class 1 Headwater Streams – Six Class 1 headwater streams, totaling 1,203 linear feet, with scores ranging from 17.0 to 26.0 were identified during the field investigations. Three intermittent streams and three ephemeral streams were identified. The substrates primarily consisted of silt and leaf pack/woody debris with lesser amounts of gravel and cobble. The maximum pool depth for the streams ranged from zero to two inches, and average bankfull widths ranged from one to two feet.

Modified Class 1 Headwater Streams – Fifty-seven Modified Class 1 headwater streams, totaling 15,782 linear feet, with scores ranging from 15.0 to 30.0 were identified during the field investigations. Fifteen intermittent streams and 42 ephemeral streams were identified. The substrates primarily consisted of silt and leaf pack/woody debris with lesser amounts of sand, cobble, gravel, clay/hardpan, and artificial substrates. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the stream receiving a Modified Class 1 designation. The maximum pool depth for the streams ranged from zero to four inches, and average bankfull widths ranged from 0.5 to three feet.

Class 2 Headwater Streams – Seven Class 2 headwater streams totaling 1,226 linear feet, with scores ranging from 31.0 to 67.0 were identified during the field investigations. Six intermittent streams and one ephemeral stream were identified. The substrates of these streams primarily consisted of silt and gravel with lesser amounts of sand, cobble, and leafy debris. The maximum pool depths ranged from one to sixteen inches, and average bankfull widths ranged from three to nine feet.

Modified Class 2 Headwater Streams – Forty Modified Class 2 headwater streams totaling 13,669 linear feet, with scores ranging from 30.0 to 69.0 were identified during the field investigations. Five perennial streams, 31 intermittent streams, and four ephemeral streams were identified. The substrates of these streams primarily consisted of silt and gravel with lesser amounts of sand, cobble, clay/hardpan, and leafy debris. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the streams receiving a Modified Class 2 designation. The maximum pool depths ranged from zero to fifteen inches, and average bankfull widths ranged from one to 8.5 feet.

3.3 PONDS

Thirty-one ponds, totaling 12.95 acres, were observed within the Project survey corridor. These ponds appear to be man-made for stormwater retention or recreational use. The locations of ponds are shown on Figures 3A to 3BBBB.

3.4 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY CORRIDOR

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys December 2017. Portions of the Project survey corridor were identified as agricultural land, old field, scrub-shrub, woodland forests, pasture/hay fields, residential landscaped areas, stream/wetland

areas, and urban areas. A variety of vegetative communities, as described below in Table 5, are present within the Project survey corridor. Vegetated land cover can be seen visually from aerial photography provided on Figures 4A through 4KK.

TABLE 5

VEGETATIVE COMMUNITIES WITHIN THE PROJECT AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Corridor	Approximate Percentage within the Project Survey Corridor
Agricultural Land	Agricultural land consisting of soybean, corn fields, and winter wheat were present along the Project survey corridor. The agricultural land contains row crops and is not used for pasture or hay fields.	467.62	52%
Landscaped Areas	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project survey corridor and adjacent areas are vegetated with frequently mowed grasses and forbs.	77.89	9%
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.	103.81	11%
Pasture/Hay Fields	Pasture for cattle and hay fields were observed in various portions of the study area. Pasture areas within the study corridors and adjacent areas are frequently mowed and grazed areas of grasses and forbs.	78.99	9%
Scrub-Shrub	Scrub-shrub habitats represent the successional stage between old-field and second growth forest, and often emerge in recently harvested forests responding to the lightness of the removed canopy. Dominant species consists of herbaceous communities similar to that of old field habitat with a few woody species, to a community dominated by forest herbs and woody species.	94.06	10%
Streams/Wetlands	Streams, wetlands and ponds were observed both within and beyond the Project survey corridor.	44.38	5%
Successional Hardwood Woodlands	Oak-Hickory and successional mixed hardwood woodlands are present along the Project survey corridor. Woody species dominating these areas included white oak (*Quercus alba*), swamp white oak (*Quercus bicolor*), pin oak (*Quercus palustris*), box elder (*Acer negundo*), American elm (*Ulmus americana*), shagbark hickory (*Carya ovata*), black walnut (*Juglans nigra*), red maple (*Acer rubrum*), and silver maple (*Acer saccharinum*). The dominant shrub-layer species included honeysuckle (*Lonicera maackii*), and blackberry (*Rubus occidentalis*).	17.29	2%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, railroads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	23.83	2%
Totals:		**907.87**	**100%**

3.5 RARE, THREATENED AND ENDANGERED SPECIES

Protected Species Agency Consultation –

AECOM conducted a rare, threatened, and endangered species review for areas crossed by the Project survey corridor. A summary of agency coordination responses is provided below. Correspondence letters from the USFWS and ODNR are included as Appendix E. Table 6 provides a list of species identified as occurring near, or possibly within the Project area during the rare, threatened, and endangered species review.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Mammals						
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	Yes	Potentially suitable habitat is present within the Project area (woodlands)	USFWS commented that the project is in the vicinity of multiple records of Indiana bat. If trees ≥3 inches dbh cannot be avoided, they recommend that removal only occur between October 1 and March 31. If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. In areas where presence is already confirmed, additional netting will not result in probable absence determination. No winter caves or abandoned mines were identified within the Project corridor.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by northern long-eared bats. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Northern long-eared bats have also been found, albeit rarely, roosting in structures like barns and sheds.	Yes	Potentially suitable habitat is present within the Project area (woodlands)	USFWS recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of northern long-eared bats within the project area during the summer. No winter caves or abandoned mines were identified within the Project corridor.
Mussels						
Black sandshell (*Ligumia recta*)	Threatened	None	This mussel species prefers gravel and sand in medium to large streams, and lakes	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Club shell (*Pleurobema clava)*	Endangered	Endangered	This mussel species prefers clean, loose sand and gravel in medium to small rivers.	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species
Fawnsfoot (*Truncilla donaciformis)*	Threatened	None	This mussel species prefers firm gravel or sand substrates in small to large rivers.	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species
Rayed bean (*Villosa fabalis)*	Endangered	Endangered	This mussel species prefers gravel or sand substrates and is often found in and around roots of aquatic vegetation in smaller, headwater creeks.	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	USFWS stated that if habitat was to be impacted then a survey would be recommended. ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species
Snuffbox (*Epioblasma triquetra)*	Endangered	Endangered	This mussel species prefers sand, gravel or cobble substrates in small to medium sized creeks.	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species
Threehorn wartyback (*Obliquaria reflexa*)	Threatened	None	This mussel species prefers gravel, sand, and mud in large rivers	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Washboard (*Megalonaias nervosa)*	Endangered	None	This mussel species prefers sand, gravel or mud in larger streams.	Yes	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	ODNR stated that due to the location, and that there is no in-water work proposed in a perennial steam, this project is not likely to impact these species
Reptiles						
Spotted Turtle (*Clemmys guttata*)	Threatened	None	This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches	Yes	Potentially suitable habitat is present within the Project area (pond edges, small streams and ditches). No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated.	ODNR stated that due to the project location, the type of work proposed, and the type of habitat along the project route and within the vicinity of the project area, this project is not likely to impact this species
Eastern massasauga (*Sistrurus catenatus*)	Endangered	Threatened	The eastern massasauga uses both upland and wetland habitat depending on the season. This snake hibernates in low wet areas and primarily in crayfish burrows but may use other structures where the water table is near the surface for a hibernaculum. Summer habitat includes drier, open areas that contain a mix of grasses and prairie plants and may be intermixed with trees or shrubs. Adjoining lowland and upland habitat with variable elevations are important for interseasonal movements.	Yes	Potentially suitable habitat is present within the Project area (wetlands). No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated.	USFWS recommended habitat assessment if habitat types or features occur within the Project corridor. ODNR stated that due to the project location, the type of work proposed, and the type of habitat along the project route and within the vicinity of the project area, this project is not likely to impact this species

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Kirtland's snake (*Clonophis kirtlandii)*	Threatened	None	The Kirtland's snake uses a range of habitats, including prairie fens, wet meadows, lake plain wet prairies and associated open and wooded wetlands, seasonal marshes, open swamps, sparsely wooded hillsides and the vicinity of ponds and sluggish creeks.	Yes	Potentially suitable habitat is present within the Project area (ponds, creeks). No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated.	ODNR stated that due to the project location, the type of work proposed, and the type of habitat along the project route and within the vicinity of the project area, this project is not likely to impact this species
Crustacean						
Sloans's crayfish (*Orconectes sloanii)*	Threatened	None	This species prefers clean, rocky-bottomed streams in small to medium sized streams.	Yes	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends that any in-stream portions of the project be conducted during base or slightly above flow to allow the crayfish to relocate out of the area. If below base flow periods have created pools potentially confining the crayfish, it is recommended that any pools proposed to be impacted be cleared using a sweep seine technique. Any captured crayfish should be relocated upstream and outside of the project area.
Fish						
American eel (*Anguilla rostrata*)	Threatened	None	This species may be found at times in any stream in Ohio and in Lake Erie. They appear most often in moderate or large rivers with continuous flow and moderately clear water. While in fresh water, eels are secretive and hid in deep pools around cover, sometimes burying themselves during the day and coming out to feed at night	Yes	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Bigeye shiner (*Notropis boops)*	Threatened	Non	This species may be found in pools of small, very clear streams with sand or gravel substrate.	No	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species
Goldeye (*Hioden alosides)*	Endangered	None	This species may be found in large rivers and are rather tolerant of turbid waters from clay and silts. They appear in areas with swift currents, often below dams.	No	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species
Mountain brook lamprey (*Ichthyomyzon greeleyi)*	Endangered	None	This species may be found in clear brooks with fast flowing water with sand or gravel bottoms.	No	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species
Northern brook lamprey (*Ichthyomyzon fossor)*	Endangered	None	This species may be found in clear brooks with fast flowing water with sand or gravel bottoms.	No	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species
Paddlefish (*Polyodon spathula)*	Threatened	None	This species may be found in sluggish pools and backwater areas of the rivers within the Ohio River and its tributaries.	Yes	No in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the project is not likely to impact this species
Birds						

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Northern harrier (*Circus cyaneus*)	Endangered	None	This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds nests out of sticks on the ground, often on top of a mound. This species hunts over grasslands	Yes	Limited suitable habitat is present within the Project area or adjacent (old field, pasture, emergent wetland habitats).	The DOW recommends if suitable habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.
Upland sandpiper (*Bartramia longicauda*)	Endangered	None	Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP)	Yes	Limited suitable habitat is present within the Project area or adjacent (old field, pasture, emergent wetland habitats).	The DOW recommends if suitable habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this habitat will not be impacted, this project is not likely to impact this species.
Plants						
Running buffalo clover (*Trifolium stoloniferum)*	Endangered	Endangered	Running buffalo clover occurs in woodlands with an open understory with filtered sunlight and periodic disturbance. This species may be found in partially shaded woodlots, mowed areas, and along streams and trails.	Yes	Potentially suitable habitat is present within the Project area (filtered sunlight and limited disturbance).	In the January 9, 2018 technical assistance letter, USFWS recommends completing the work between August 1 to March 30, after the perennial plant has died back for the season and foliage will not be damaged or destroyed. If the work is to be completed outside of that time window, the USFWS requests a survey to be completed in sections of the line running through Salem and Washington Township in Warren County. In a phone discussion with USFWS on May 14. 2018, AECOM discussed the Project area in greater detail with USFWS. After the discussion of the habitat within the ROW, USFWS indicated that the project would not impact this species.

ODNR Coordination –

Coordination with the ODNR was initiated during the planning stages of the Project to obtain records of protected species located in the vicinity of the project. In a letter dated October 17, 2017, the ODNR Office of Real Estate Environmental Review Section provided comments on the Project based on an inter-disciplinary review. The Ohio Natural Heritage Database (ONHD), Division of Wildlife (DOW), and the Division of Water Resources provided comments regarding their respective regulatory authorities.

The ONHD lists the following as being recorded at or within a one-mile radius of the project area: screw-stem, running buffalo clover, beech sugar maple forest plant community, oak maple forest plant community, elktoe, fawnsfoot, Indiana bat, upland sandpiper, loggerhead shrike, mussel bed, Little Miami State Scenic River, Halls Creek Woods State Nature Preserve, Halls Creek State canoe access, Little Miami River State Park, and Oldaker Wildlife Area. ODNR recommended that impact to wetlands, streams or other water resources be avoided or minimized and that erosion and sediment controls be utilized. ODNR DOW further stated that the portion of the Project from Mullen Hill Road in Clinton County to the eastern terminus of the Project is within the vicinity of records for the Indiana bat and that any additional summer surveys would not constitute presence or probable absence in the area. The DOW further recommends tree cutting to occur between October 1st and March 31st to avoid direct impacts to the species.

The DOW indicated that this Project is within the range of two state-endangered bird species: the northern harrier and upland sandpiper. ODNR does indicate that construction should be avoided during the northern harrier's nesting period between May 15 to August 1 to avoid impacts to marshes and grasslands. ODNR also indicates that construction should be avoided during the upland sandpiper's nesting period between April 15 to July 31 to avoid impacts to grasslands, pasture and hayfield habitats. Potential nesting locations for this species can be seen on Figures 4A through 4KK.

ODNR noted that the Project is within the range of seven state-listed mussel species (club shell, rayed bean, snuffbox, washboard, treethorn wartyback, black sandshell, and fawnsfoot) and six state-listed fish species (brook lamprey, goldeye, mountain brook lamprey, bigeye shiner, American eel, and paddlefish). ODNR recommends no in-water work in perennial streams at least between April 15 to June 30 to reduce impacts to aquatic species and their habitat. However, if no in-water work proposed in a perennial stream, this Project is not likely to impact these species.

ODNR also indicated that the Project is within the range of one state-threatened turtle species: the spotted turtle. The Project is also within the range of the eastern massasauga, a state-endangered snake species, and Kirtland's snake, a state threatened species. ODNR commented that due to the Project location, the type of work proposed, and the type of habitat along the Project route and within the vicinity

of the Project area, this Project is not likely to impact the spotted turtle, eastern massasauga, or the Kirtland's snake.

ODNR stated that the Project is within the range of the state-endangered Sloan's crayfish. The ODNR recommends that if any in-stream portions of the project be conducted during base or slightly above flow to allow the crayfish to relocate out of the area. If below base flow periods have created pools potentially confining the crayfish, it is recommended that any pools proposed to be impacted be cleared using a sweep seine technique. Any captured Sloan's crayfish should be relocated upstream and outside of the project area. However, because no in-water work is proposed in streams, this Project is not likely to impact this species.

USFWS Coordination –

In a letter dated January 9, 2018, the USFWS provided comments on the Project with regard to federally listed threatened and endangered species that may occur within the project vicinity. The USFWS indicated that there are no Federal wildlife refuges, wilderness areas, or critical habitat within the vicinity of the Project.

The USFWS noted that the Project lies within the range of the federally endangered Indiana bat, and the federally threatened northern long-eared bat. USFWS recommends that if the proposed site contains trees ≥3 inches dbh, those trees should be saved wherever possible. If tree clearing cannot be avoided, USFWS recommends that tree removal occur between October 1 and March 31 avoid adverse effects to Indiana bats and northern long-eared bats during the summer maternity and fall migration period.

The USFWS noted that the project lies in the range of the federally threatened eastern massasauga. USFWS stated that eastern massasaugas use both upland and wetland habitat and these habitats differ by season. Adjoining lowland and upland habitat with variable elevations between are important for inter-seasonal movements. USFWS recommended a habitat assessment if habitat types or features occur within the Project corridor.

USFWS also noted that the Project is located within the range of the federally endangered rayed bean. USFWS recommends that if the project will directly or indirectly impact the rayed bean habitat, then a survey be conducted to determine the presence or probable absence of rayed bean mussels in the vicinity of the project. Due to the Project having no in-stream work, this project is not likely to impact this species.

The Project is located within the range of the federally endangered running buffalo clover. In the January 9, 2018 technical assistance letter, USFWS recommends completing the work between August 1 to March 30, after the perennial plant has died back for the season and foliage will not be damaged or

destroyed. If the work is to be completed outside of that time window, the USFWS requests a survey to be completed in sections of the line running through Salem and Washington Township in Warren County. In a phone call with USFWS on May 14. 2018, AECOM discussed the Project in greater detail with Ms. Jennifer Finfera with USFWS. After the detailed discussion of the habitat present within the ROW, Ms. Finfera indicated that based on the discussion, that she did not believe the project would not impact this species. A copy of the memorandum documenting the phone call is provided in Appendix E.

4.0 SUMMARY

The ecological survey of the Project survey corridor identified a total of 33 wetlands, 131 streams, and 31 ponds. The 33 wetlands within the Project survey corridor are of two different wetland habitat types: 32 PEM wetlands, and one PFO wetland. All 31 wetlands were identified as Category 1 and Category 2 wetlands. No Category 3 wetlands were identified within the Project survey corridor.

The 131 streams identified within the Project survey corridor include 50 ephemeral streams, 55 intermittent streams, and 26 perennial streams. One hundred and ten streams were assessed using the HHEI methodology (drainage area less than 1 mi^2) and 17 streams were assessed using the QHEI methodology (drainage area greater than 1 mi^2). Four streams (Little Miami River, Second Creek, Turtle Creek and Todd Fork) were not assessed since they are larger waterbodies and have an OEPA aquatic use designation.

With regard to state and/or federally listed threatened and endangered species that may occur within the Project vicinity, 22 state listed species were listed by the ODNR or USFWS Based on agency responses and/or no proposed in-water work, the Project is not likely to impact the club shell, rayed bean, snuffbox, washboard, threethorn wartyback, black sandshell, fawnsfoot, brook lamprey, goldeye, mountain brook lamprey, bigeye shiner, American eel, paddlefish, spotted turtle, Kirtland's snake and Sloan's crayfish. ODNR states that construction should be avoided during the upland sandpiper's and northern harrier's nesting period between April 15 to August 1 to avoid impacts to marshes, grasslands, pasture and hayfield habitats.

The USFWS and ODNR noted that the project lies in the range of the eastern massasauga. ODNR commented that due to the location, the type of habitat present along the project route and within the vicinity of the project area, this project is not likely to impact this species. USFWS recommended a habitat assessment if habitat types or features occur within the Project corridor.

The agencies noted that the project lies in the range of running buffalo clover. In a phone call with USFWS on May 14. 2018, AECOM discussed the Project in greater detail with Ms. Jennifer Finfera with USFWS. After the discussion of the habitat present within the ROW, USFWS indicated that based on the discussion, that she did not believe the Project would not impact this species.

Based on general observations during the ecology survey, a small portion of the Project survey corridor contained potential summer roosting habitat for the Indiana bat and the northern long-eared bat. USFWS recommends that should the proposed site contain trees ≥3 inches dbh, that trees be saved wherever possible. If tree clearing cannot be avoided, they recommend that tree removal occur between October 1st and March 31st to avoid adverse effects to Indiana bats and northern long-eared bats.

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey boundary provided in Figures 3A-3BBBB: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Project survey boundary, including any portion of work pads or access roads, were not evaluated in the field and are not included in the reporting of this survey.

The information contained in this wetland delineation report is for a study corridor that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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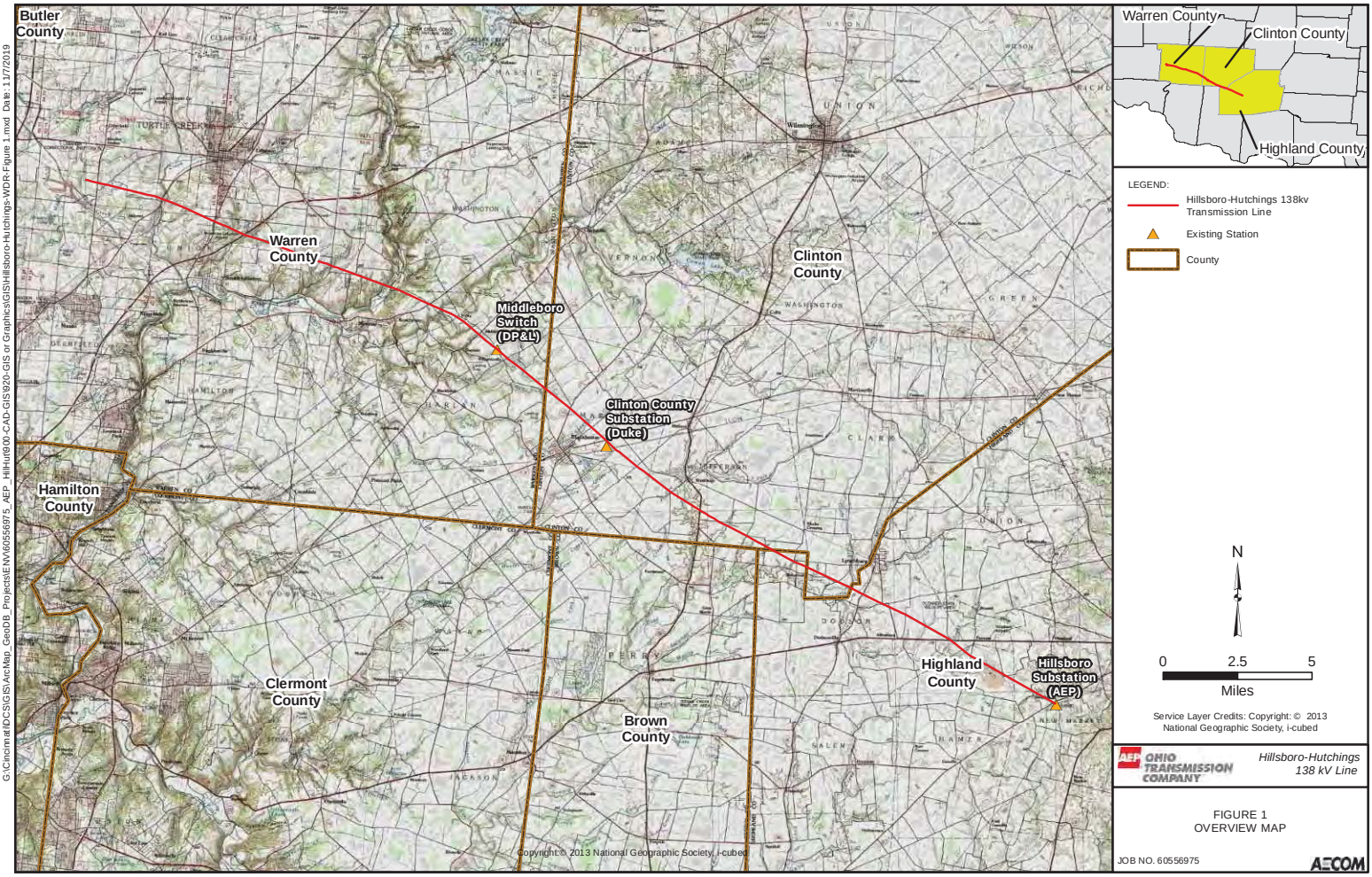

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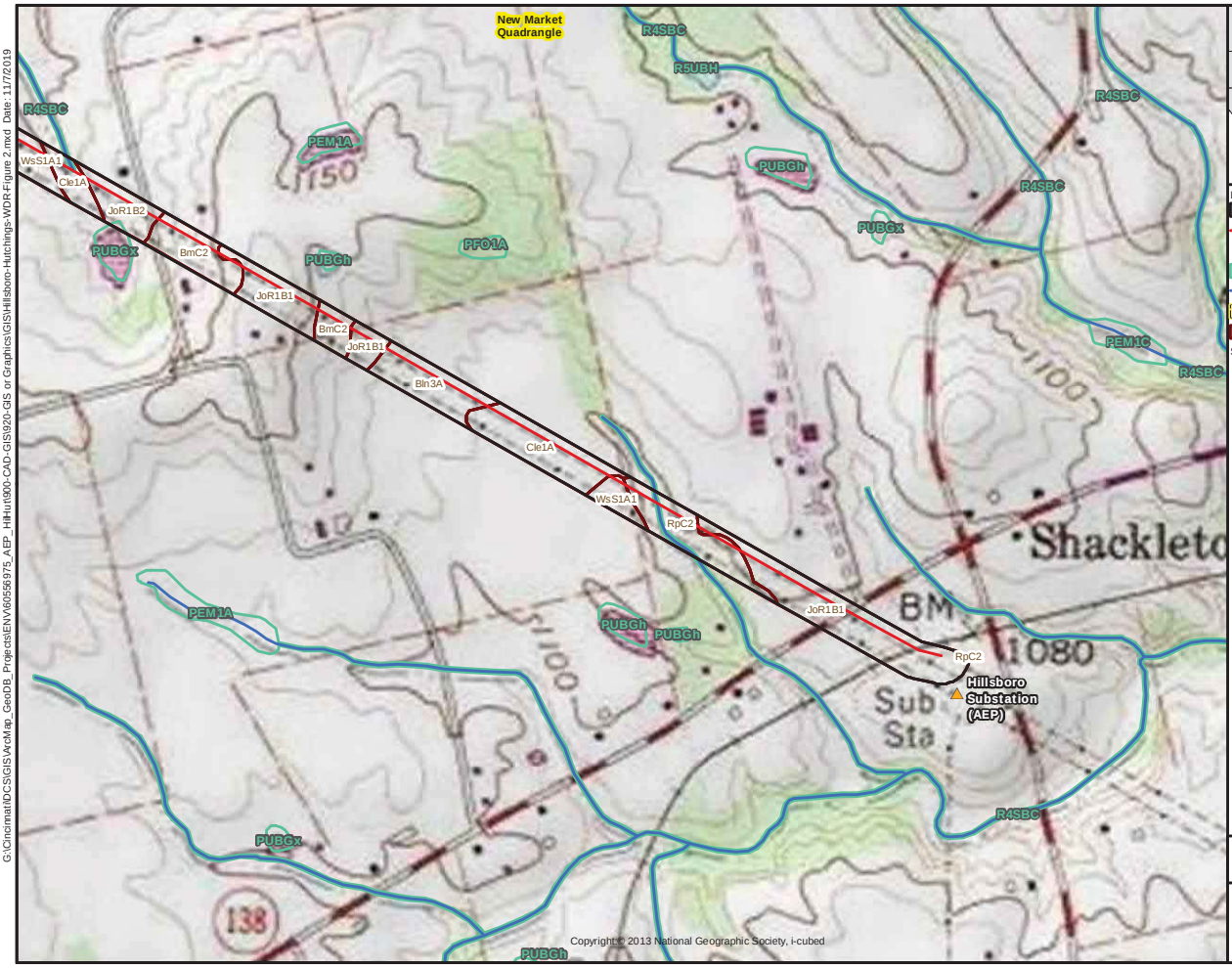

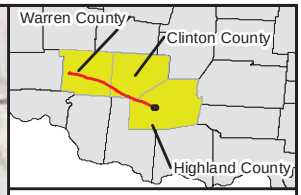

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- Existing Station
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Bln3A; Blanchester silty clay loam, 0 to 1 percent slopes
- BmC2; Boston-Bratton complex, 6 to 12 percent slopes, moderately eroded
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2A
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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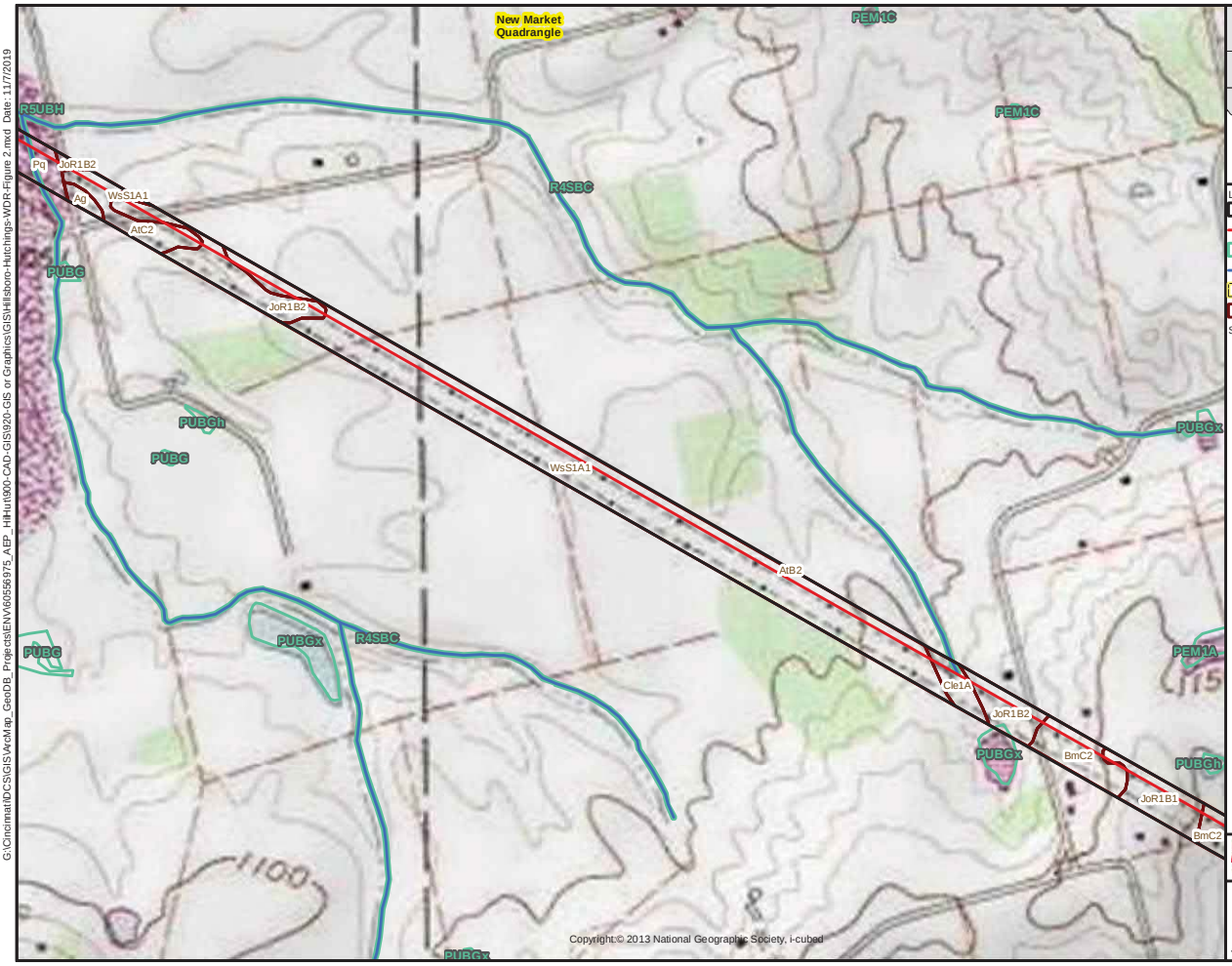

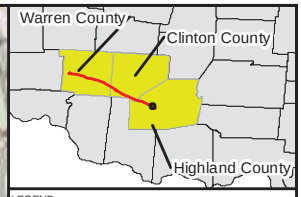

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Ag; Algiers silt loam
- AtB2; Atlas silt loam, 2 to 6 percent slopes, moderately eroded
- AtC2; Atlas silt loam, 6 to 12 percent slopes, moderately eroded
- BmC2; Boston-Bratton complex, 6 to 12 percent slopes, moderately eroded
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- Pq; Pits, quarry
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

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Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2B
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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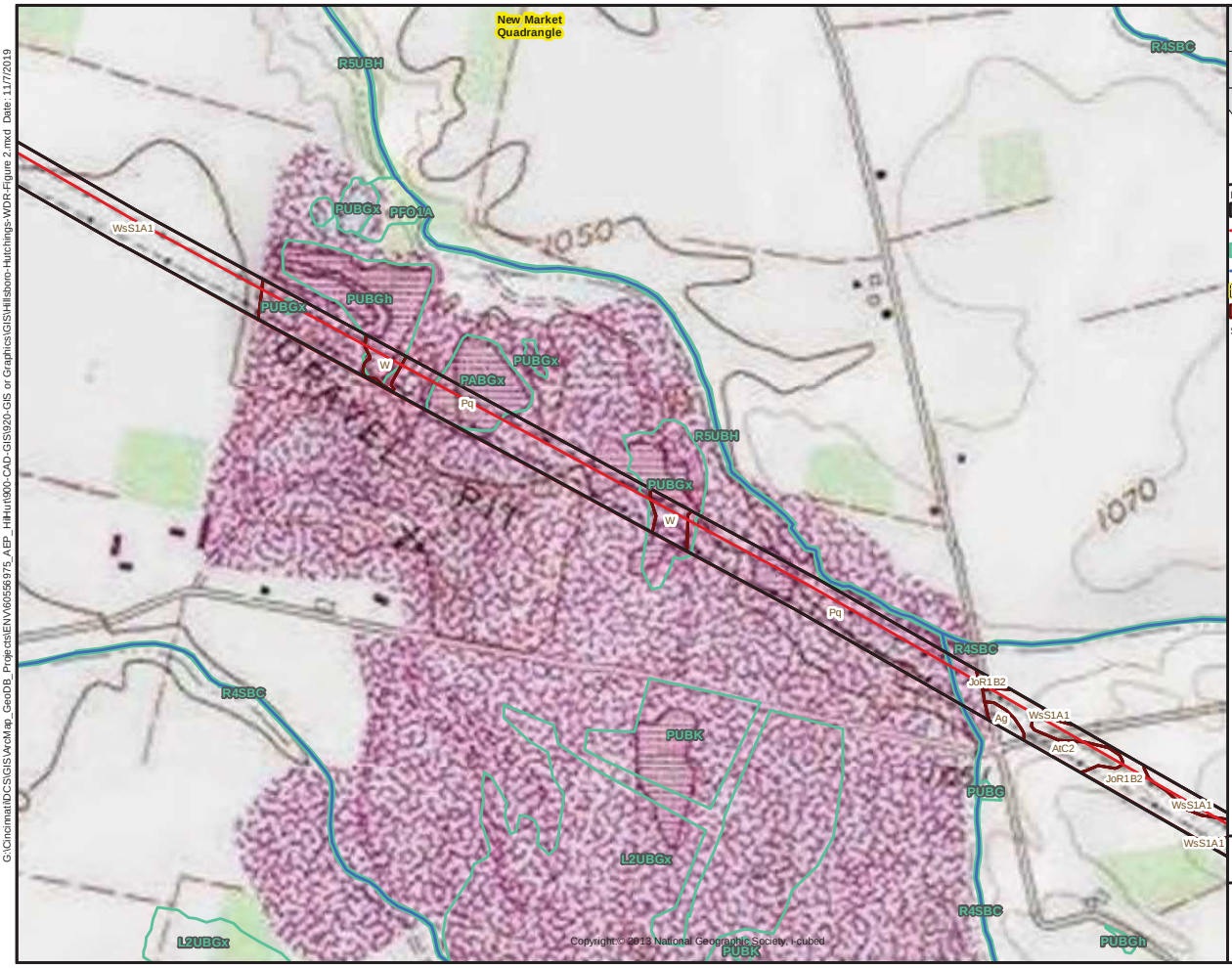

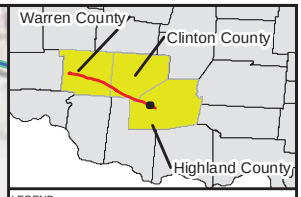

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Ag; Algiers silt loam
- AtC2; Atlas silt loam, 6 to 12 percent slopes, moderately eroded
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- Pq; Pits, quarry
- W; Water
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2C
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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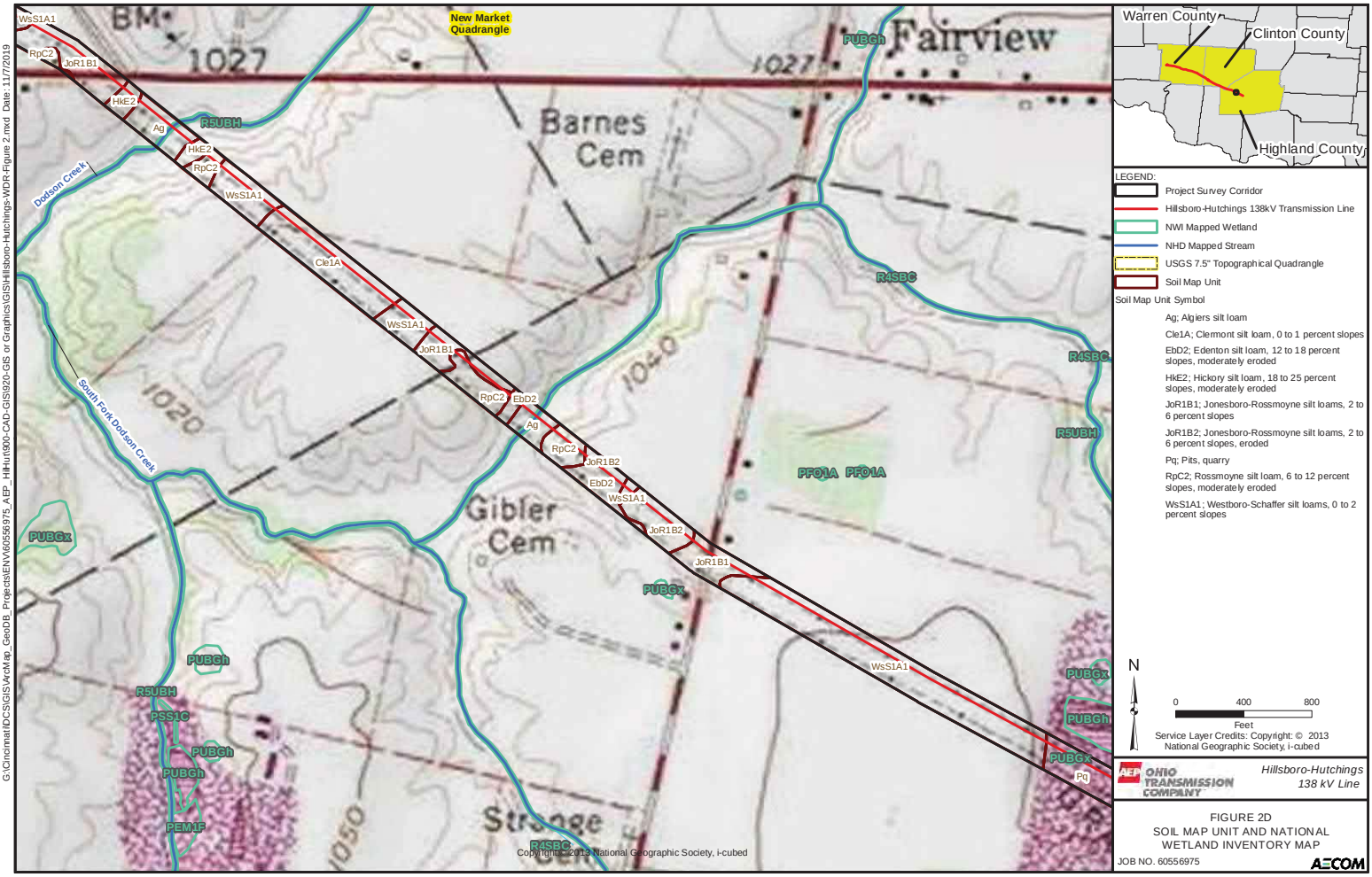

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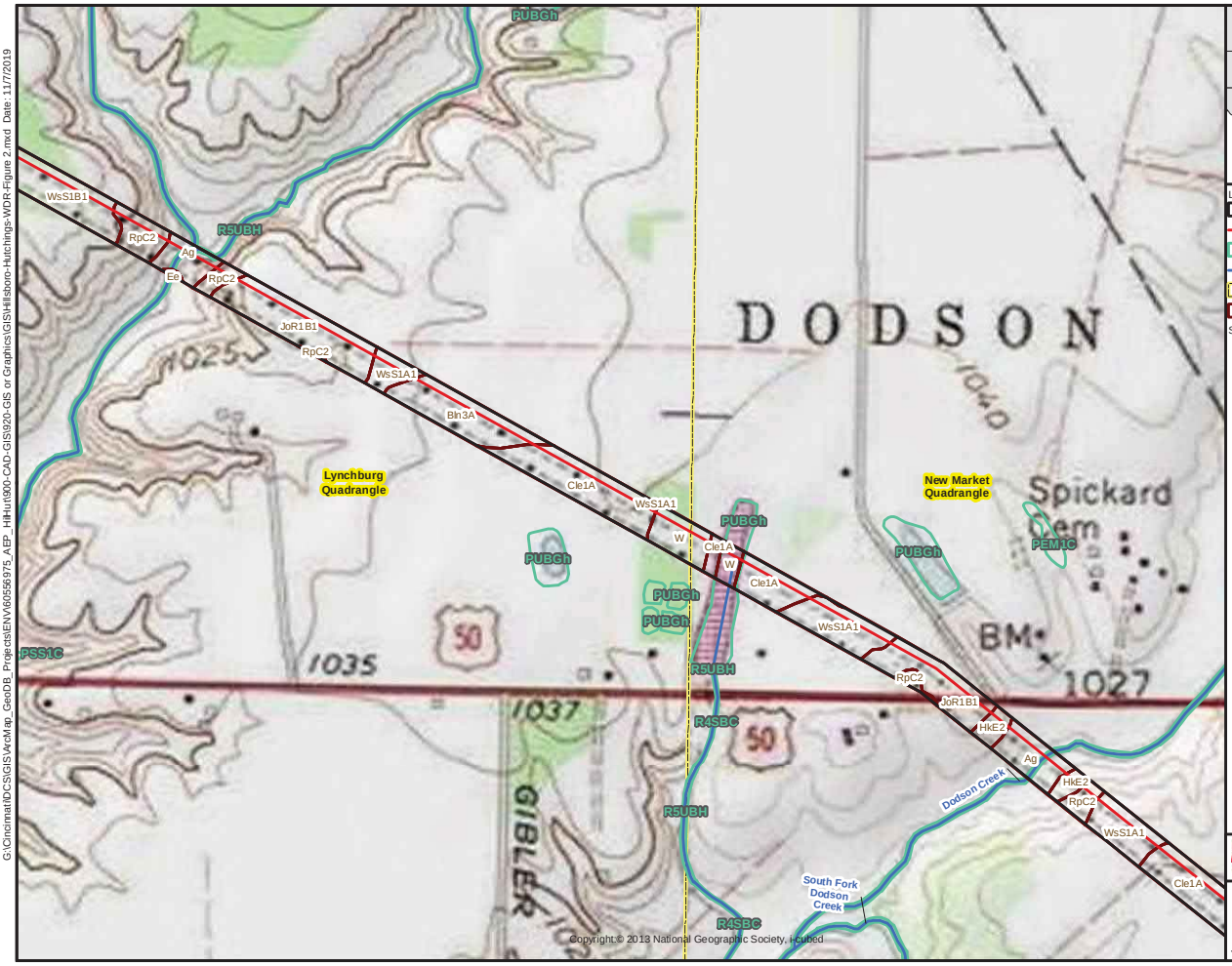

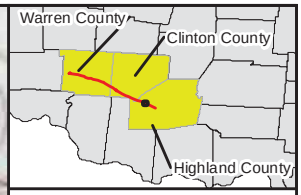

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Ag; Algiers silt loam
- Bln3A; Blanchester silty clay loam, 0 to 1 percent slopes
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- Ee; Eel silt loam, 0 to 2 percent slopes, occasionally flooded
- HkE2; Hickory silt loam, 18 to 25 percent slopes, moderately eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- W; Water
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2E
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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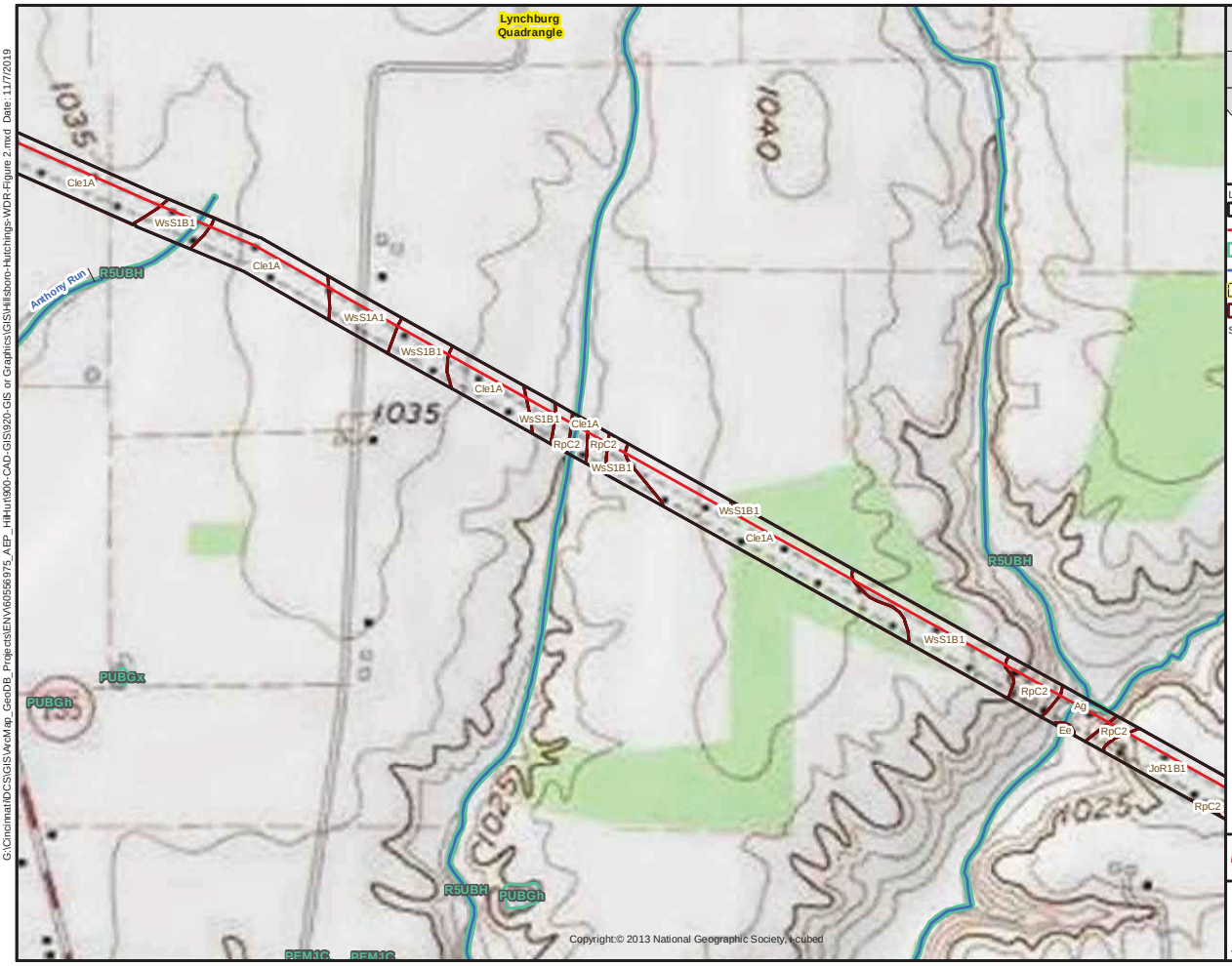

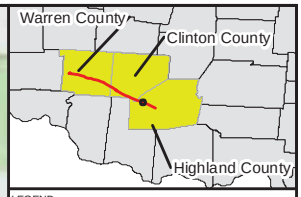

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Ag; Algiers silt loam
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- Ee; Eel silt loam, 0 to 2 percent slopes, occasionally flooded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2F
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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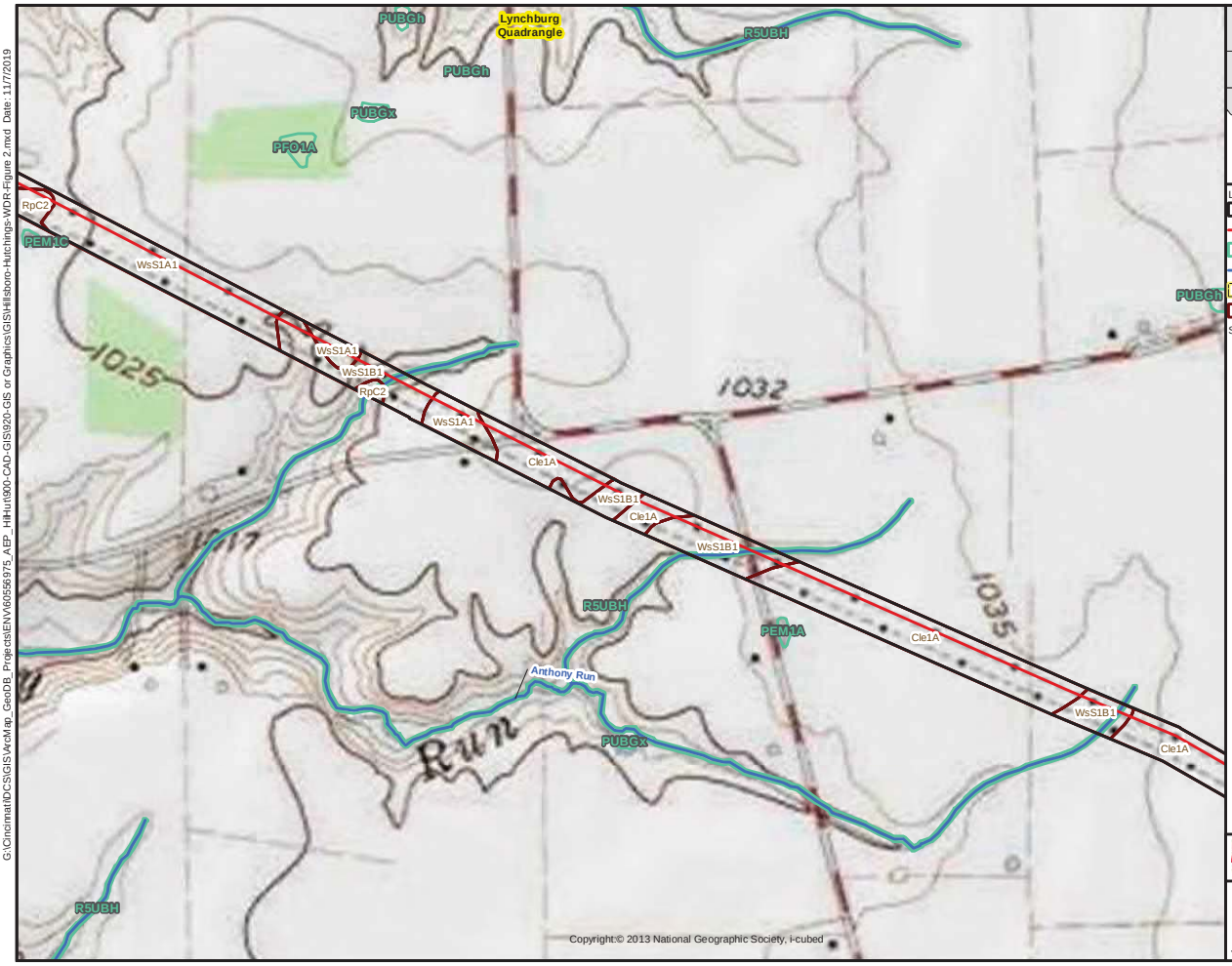

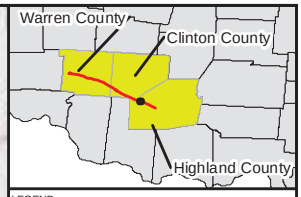

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2G
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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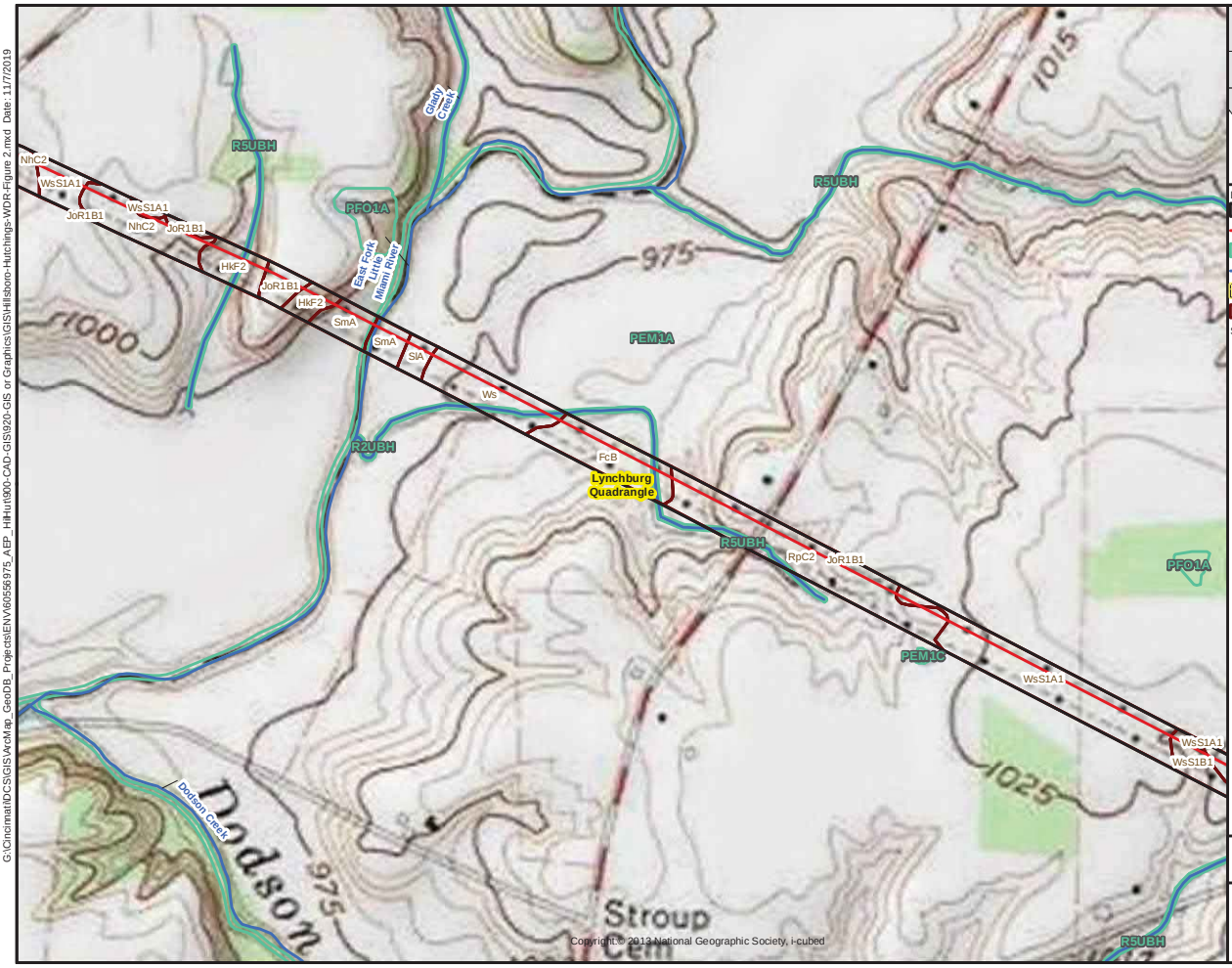

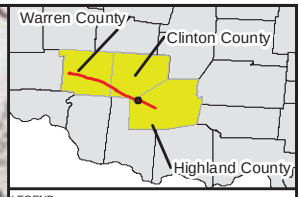

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- FcB; Fitchville silt loam, 2 to 6 percent slopes
- HkF2; Hickory silt loam, 25 to 35 percent slopes, eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- NhC2; Nicely silt loam, 6 to 12 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- SlA; Sleeth silt loam, 0 to 2 percent slopes
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- Ws; Westland silt loam, overwash
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2H
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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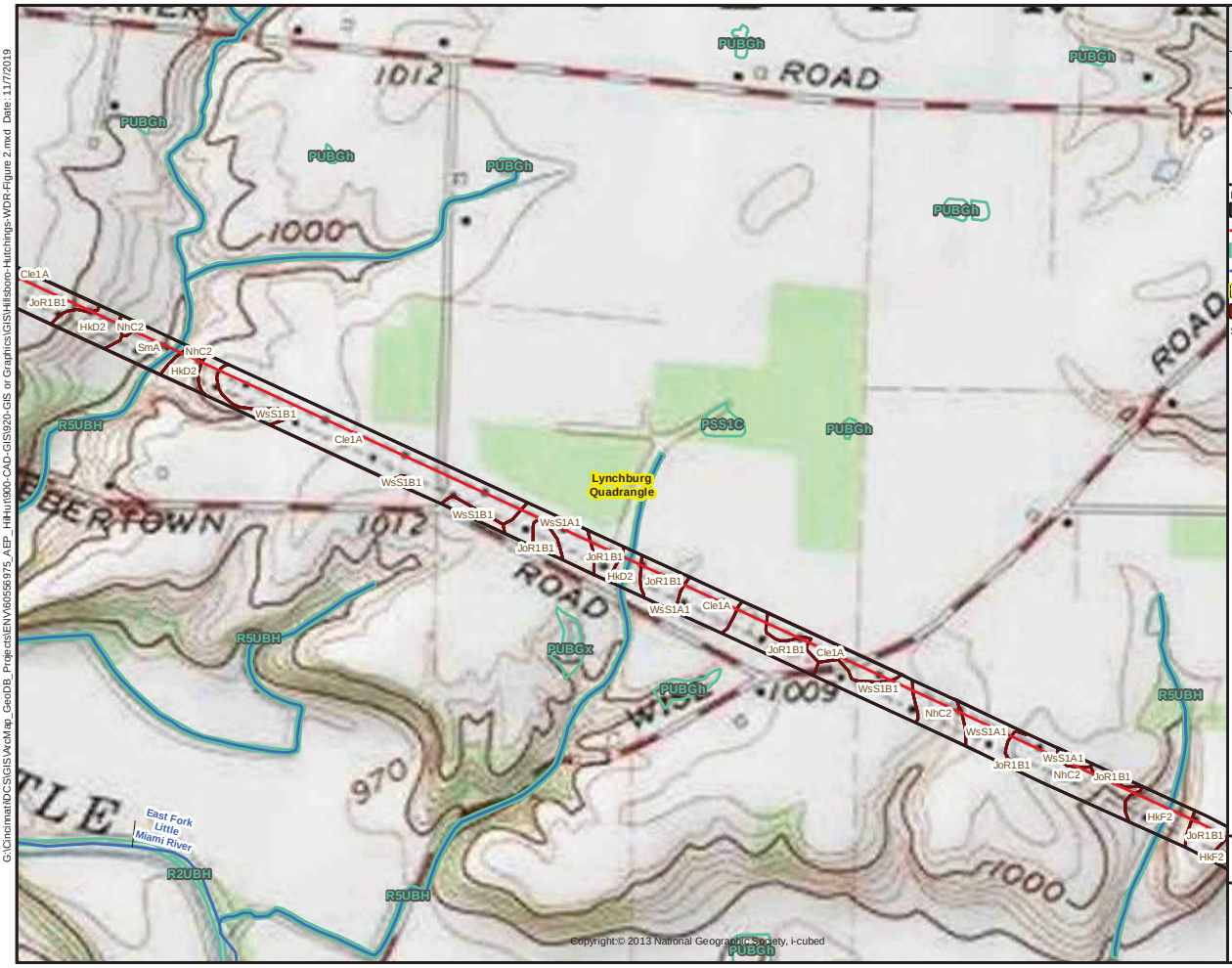

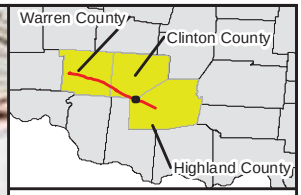

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- HkD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- HkF2; Hickory silt loam, 25 to 35 percent slopes, eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- NhC2; Nicely silt loam, 6 to 12 percent slopes, eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2I
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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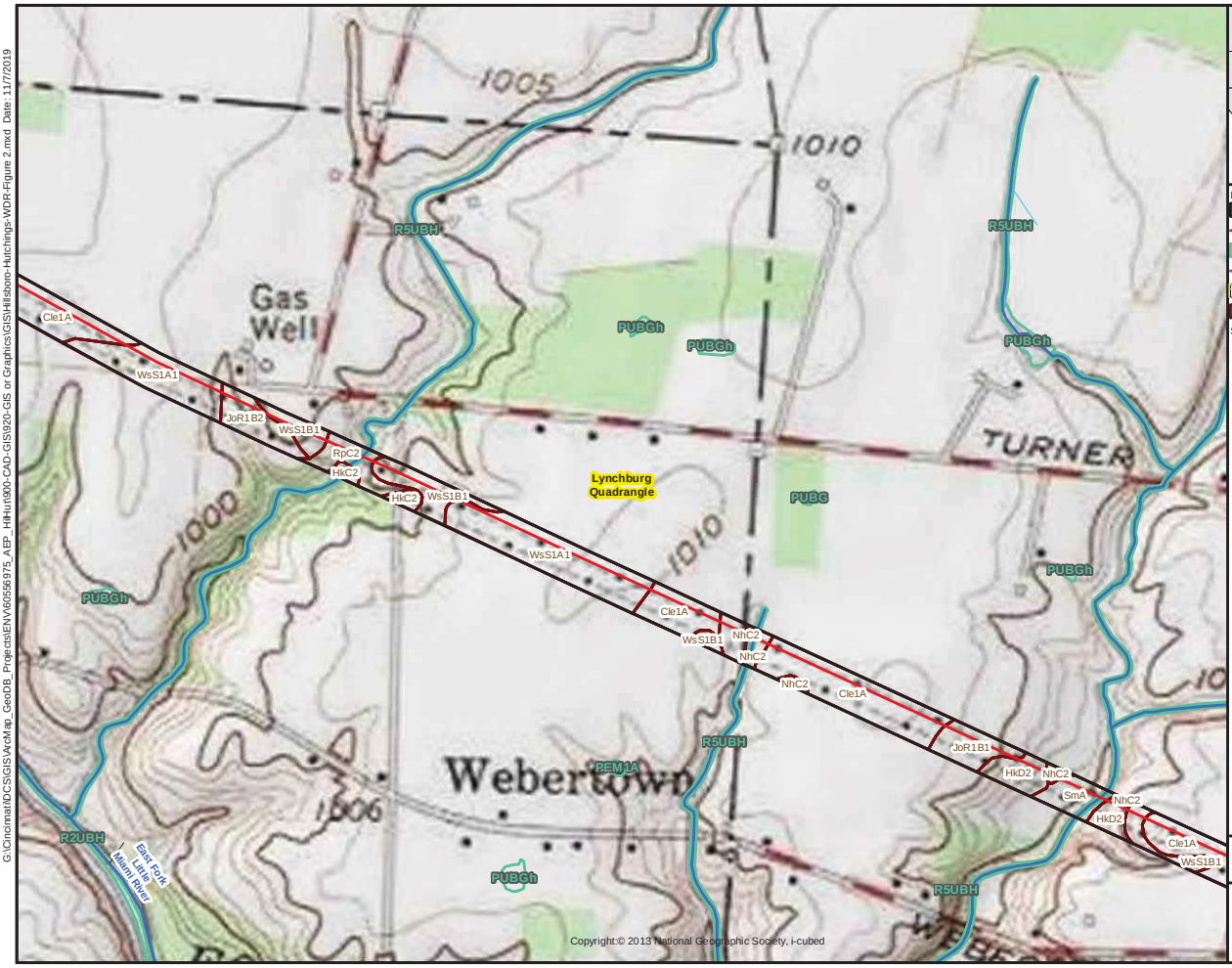

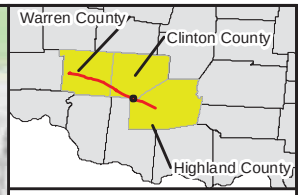

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- HkC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- HkD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- NhC2; Nicely silt loam, 6 to 12 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2J
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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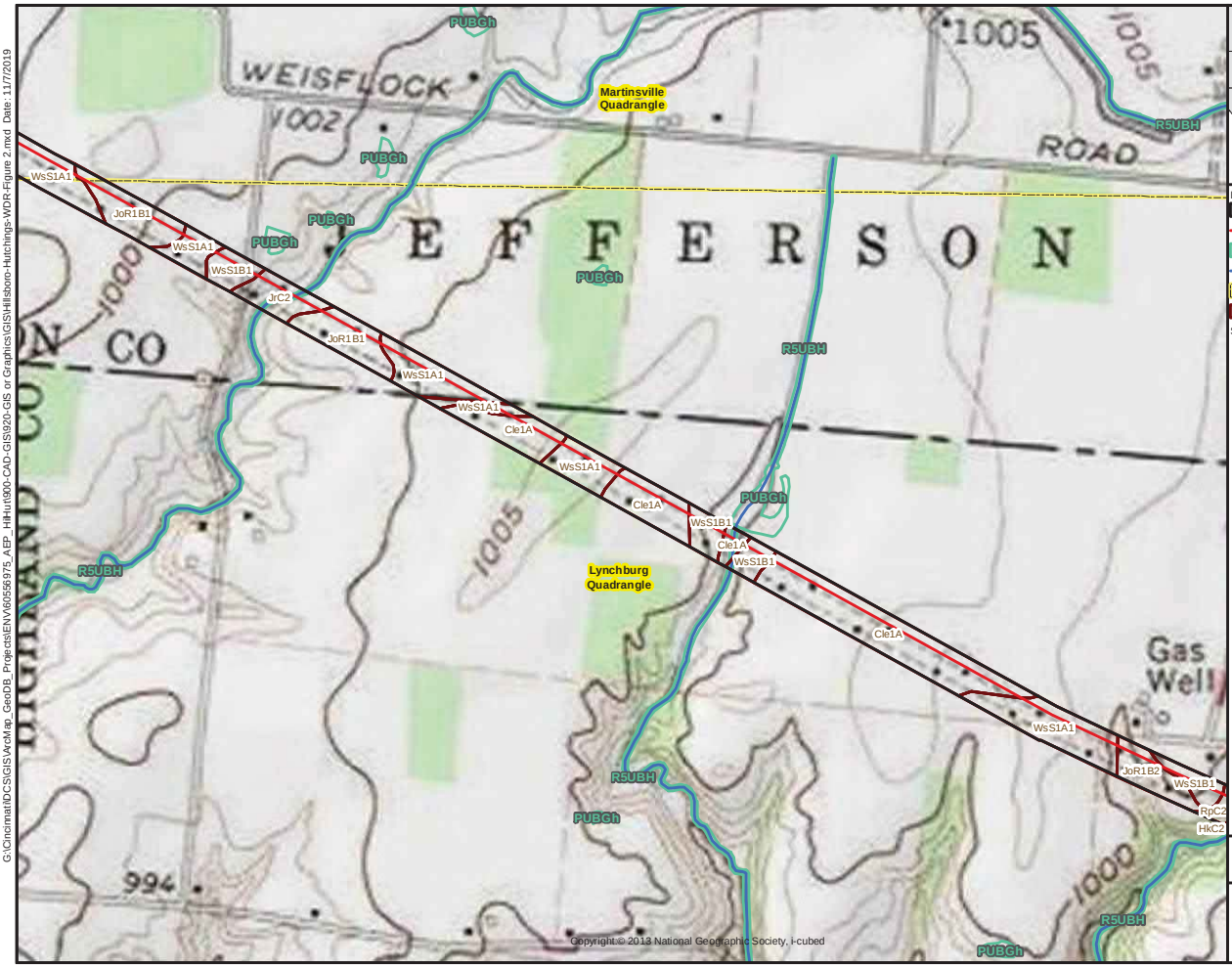

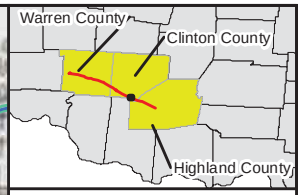

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- HkC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- JrC2; Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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Hillsboro-Hutchings 138 kV Line

FIGURE 2K
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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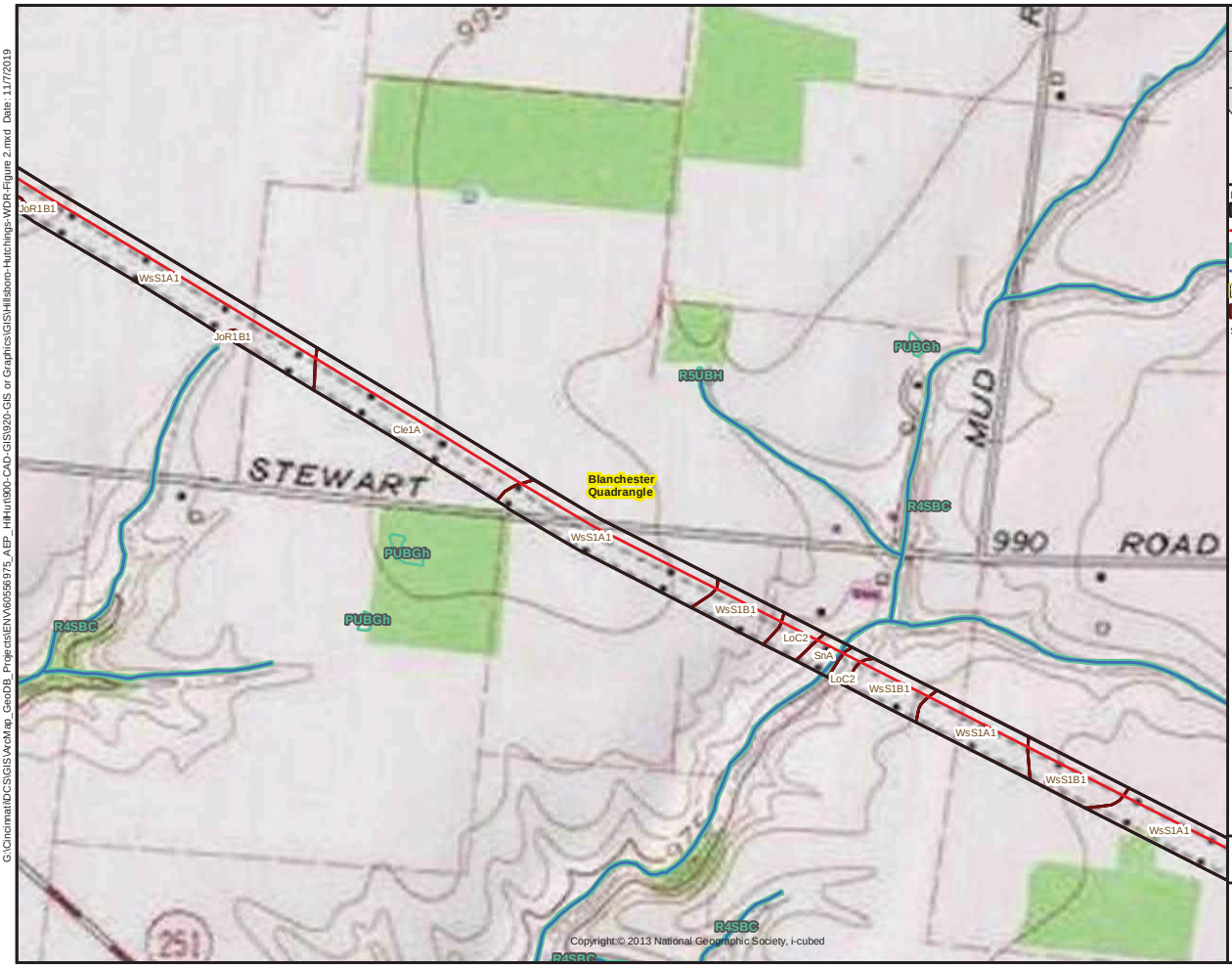

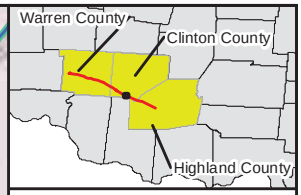

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- LoC2; Loudon silt loam, 6 to 12 percent slopes, eroded
- SnA; Sloan silt loam, sandy substratum, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2M
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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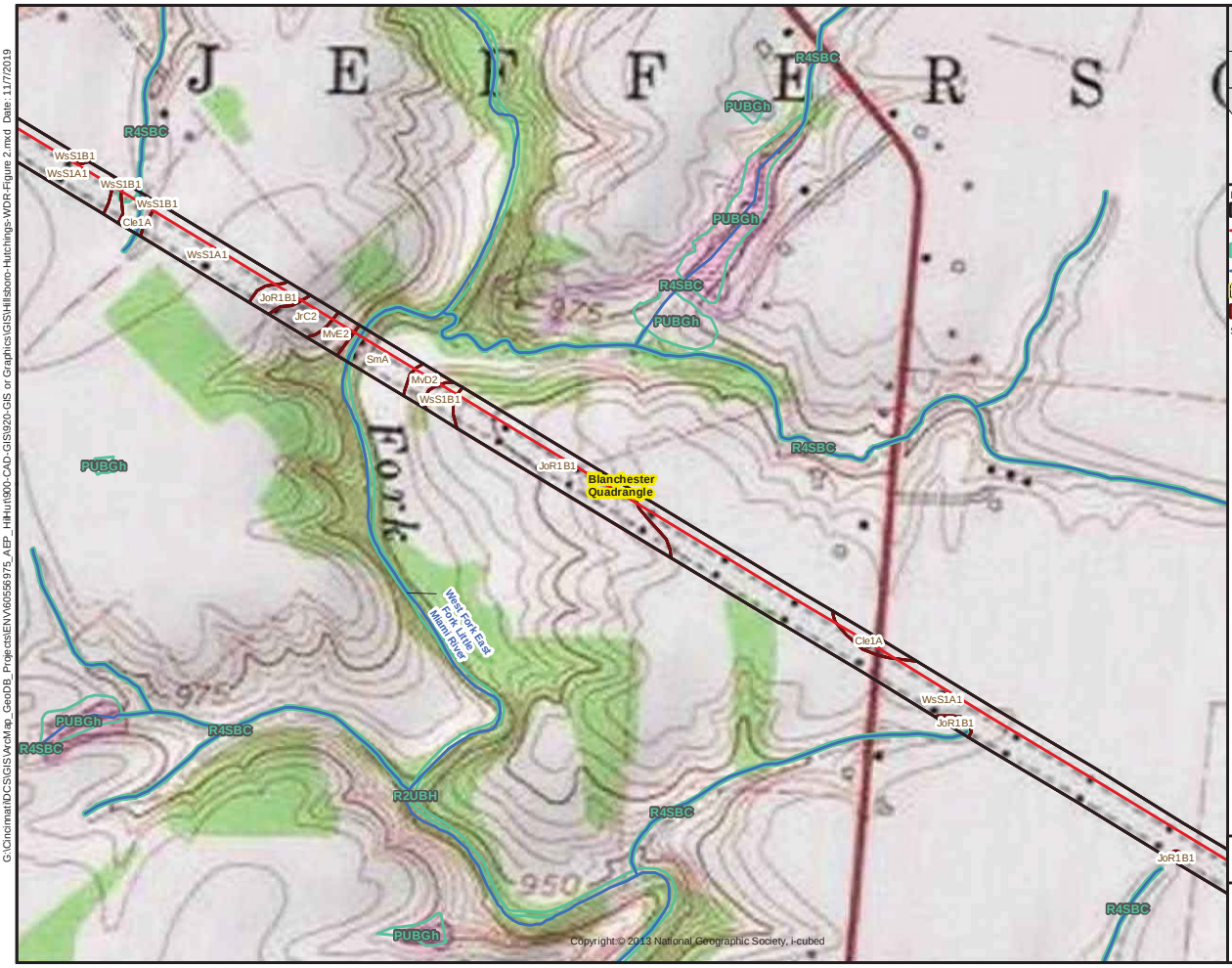

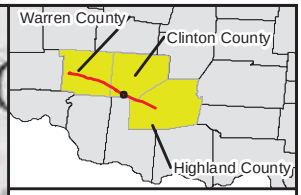

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JrC2; Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes, eroded
- MvD2; Morrisville silty clay loam, 12 to 18 percent slopes, eroded
- MvE2; Morrisville silty clay loam, 18 to 25 percent slopes, eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2N
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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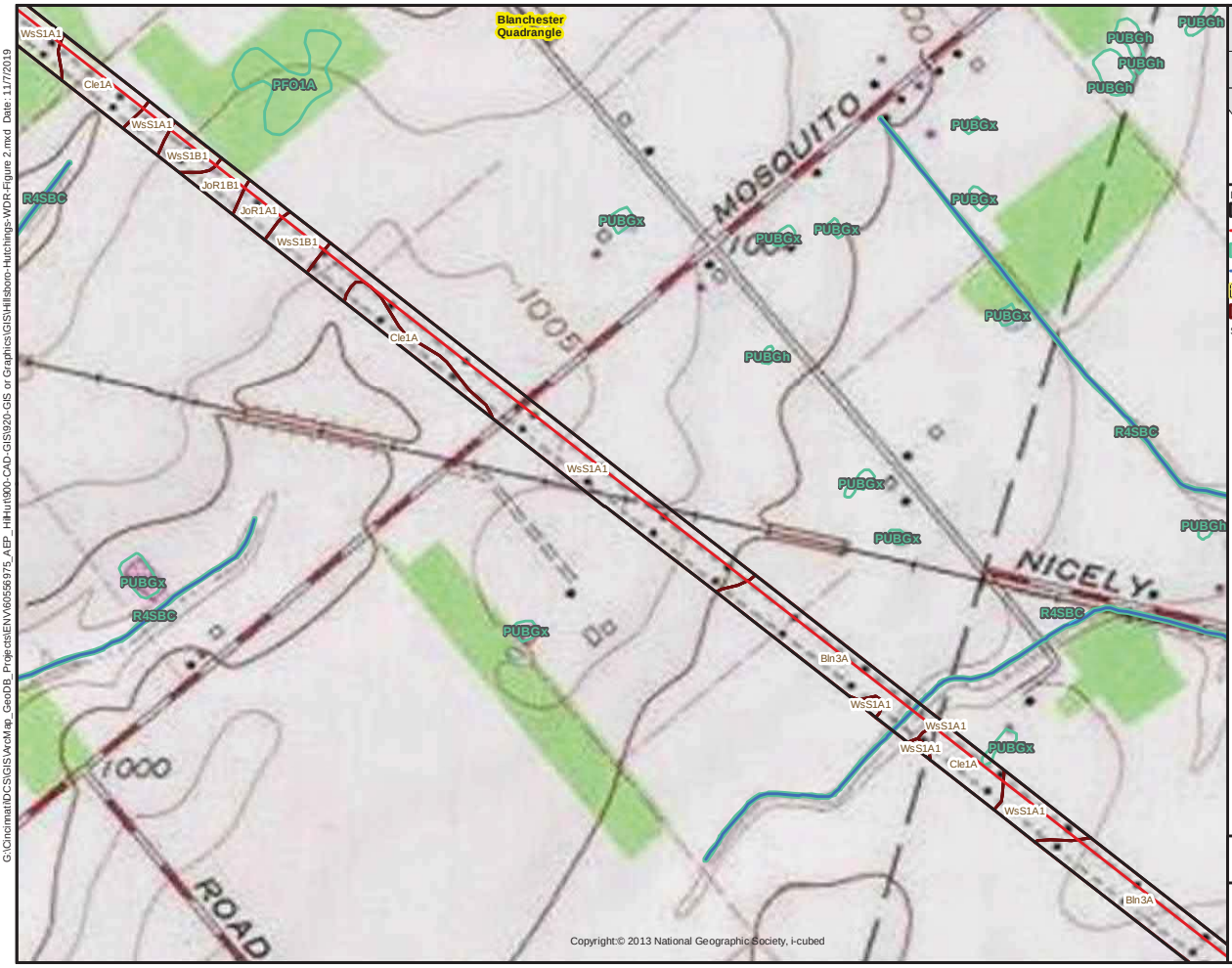

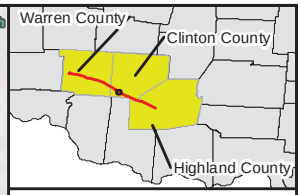

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Bln3A; Blanchester silty clay loam, 0 to 1 percent slopes
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2P
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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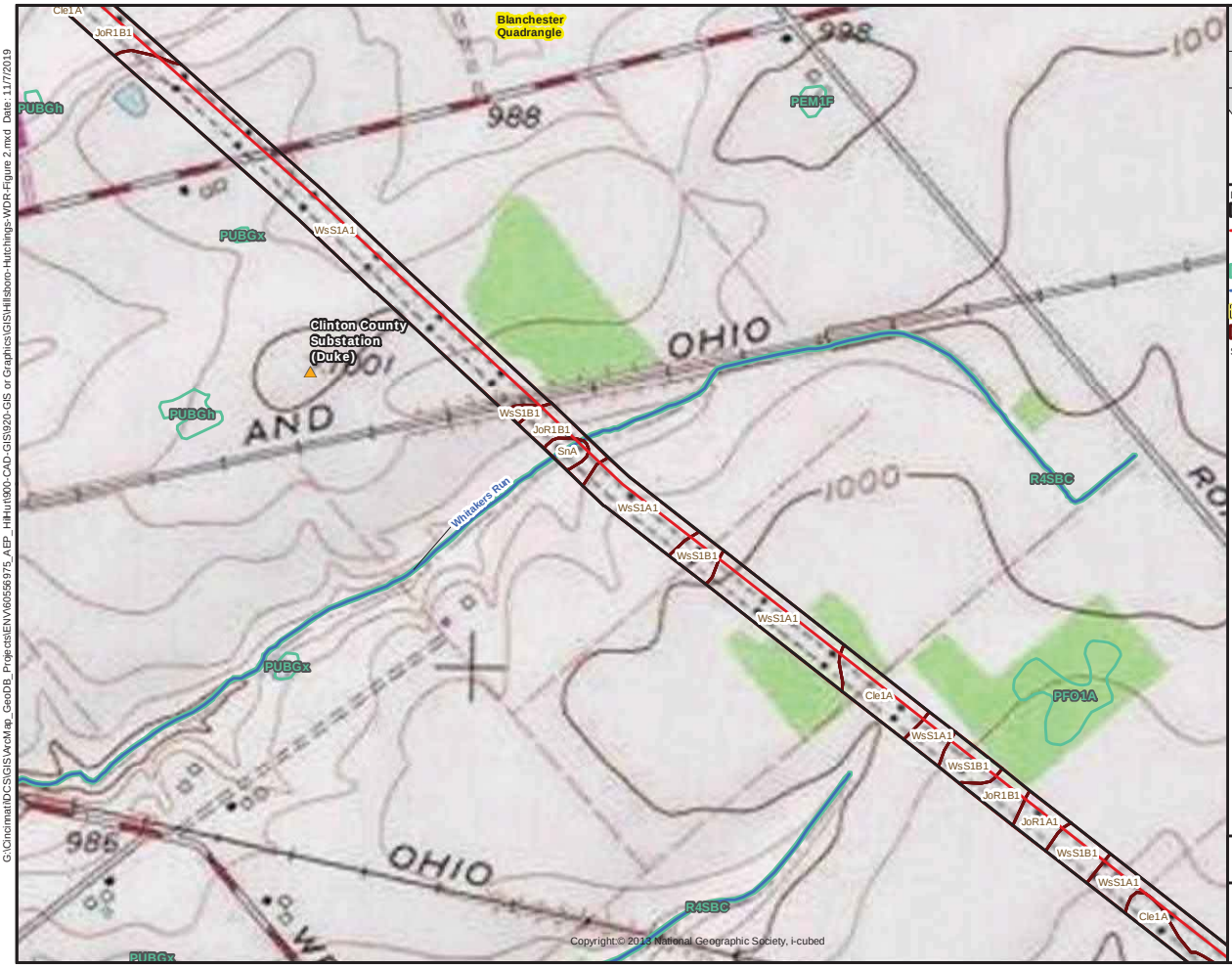

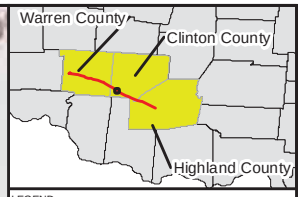

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- Existing Station
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- SnA; Sloan silt loam, sandy substratum, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2Q
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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AECOM

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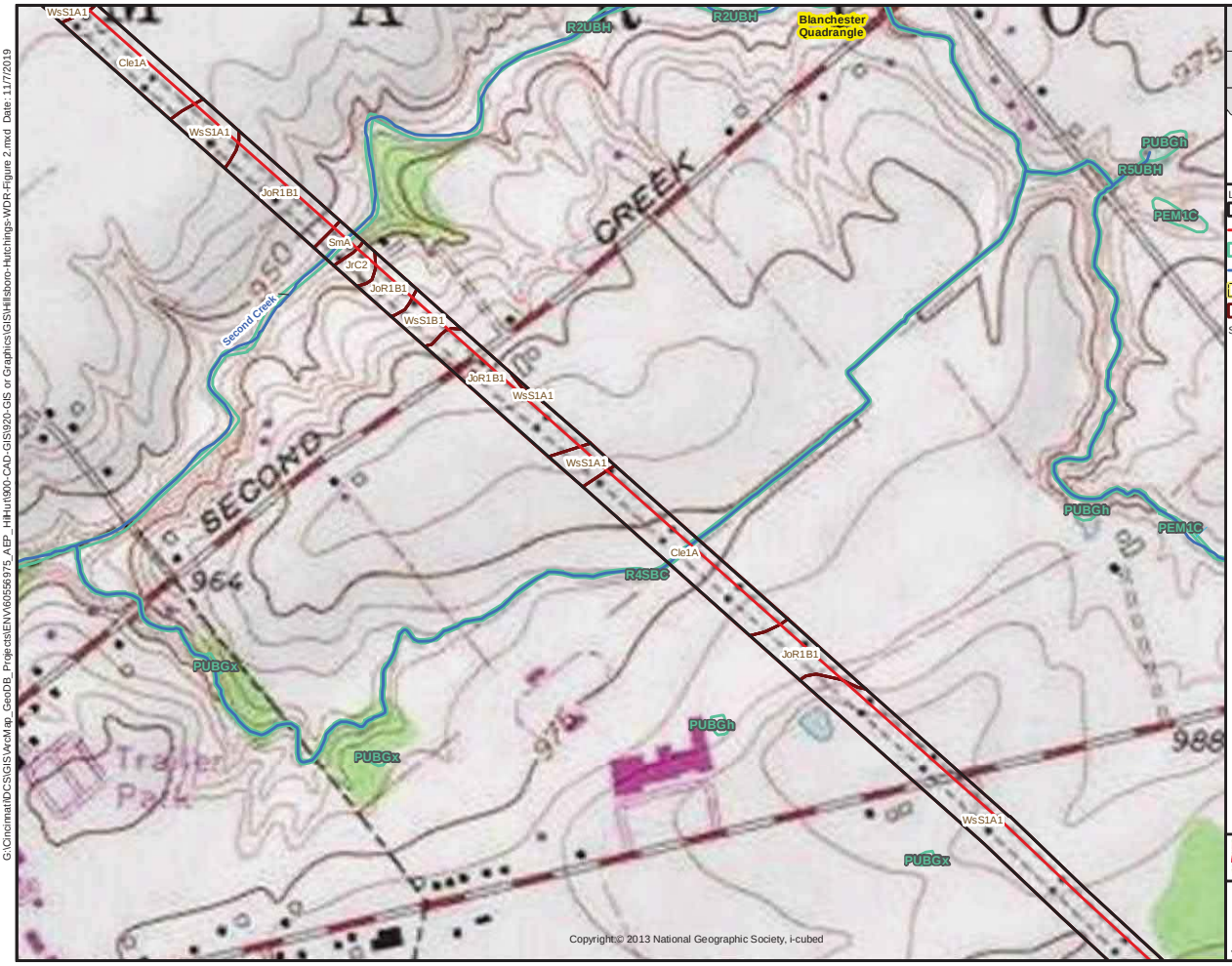

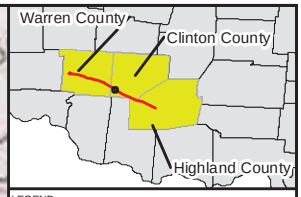

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JrC2; Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes, eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2R
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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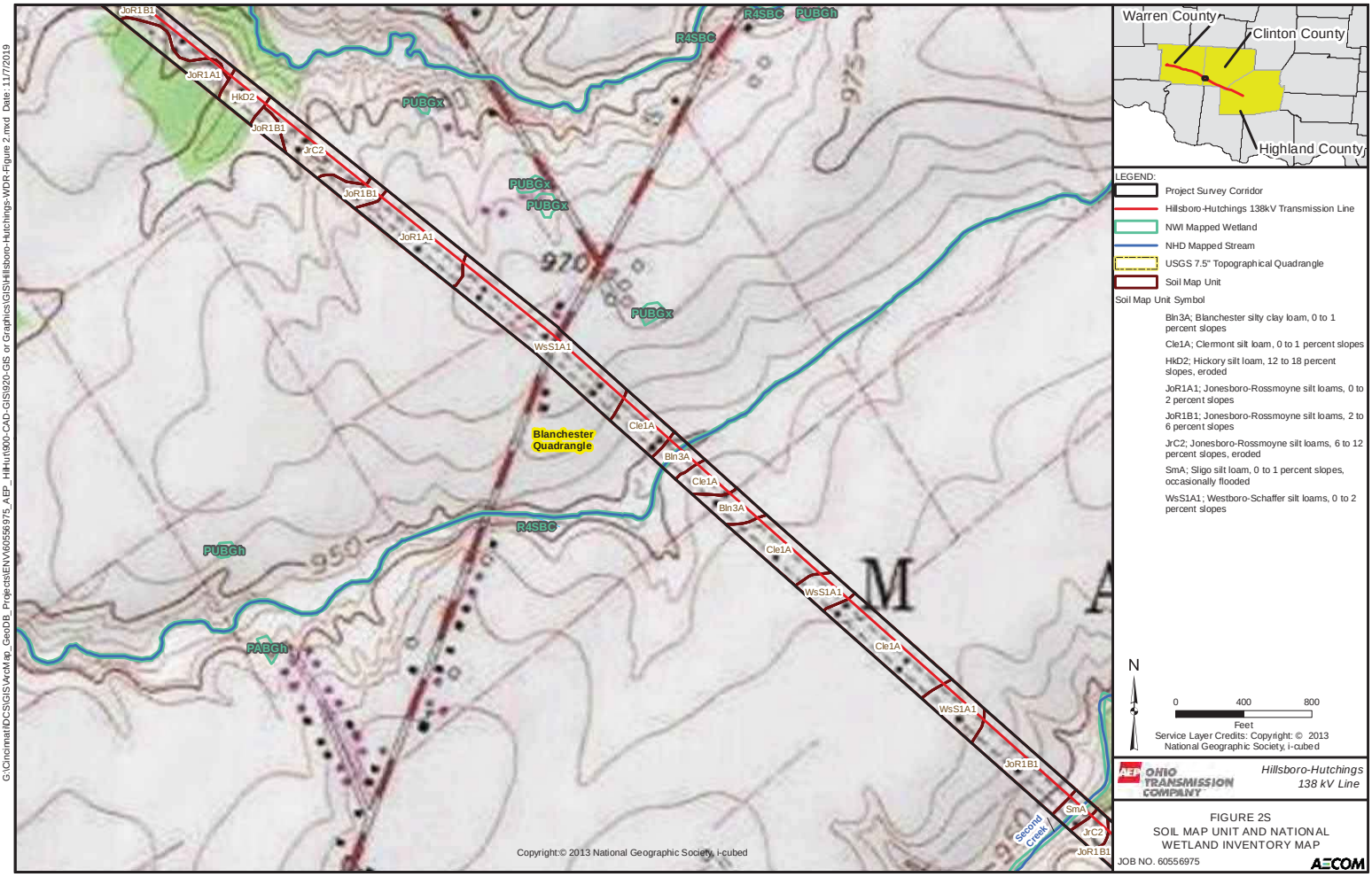

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Bln3A; Blanchester silty clay loam, 0 to 1 percent slopes
- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- HkD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JrC2; Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes, eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

N

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Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2S
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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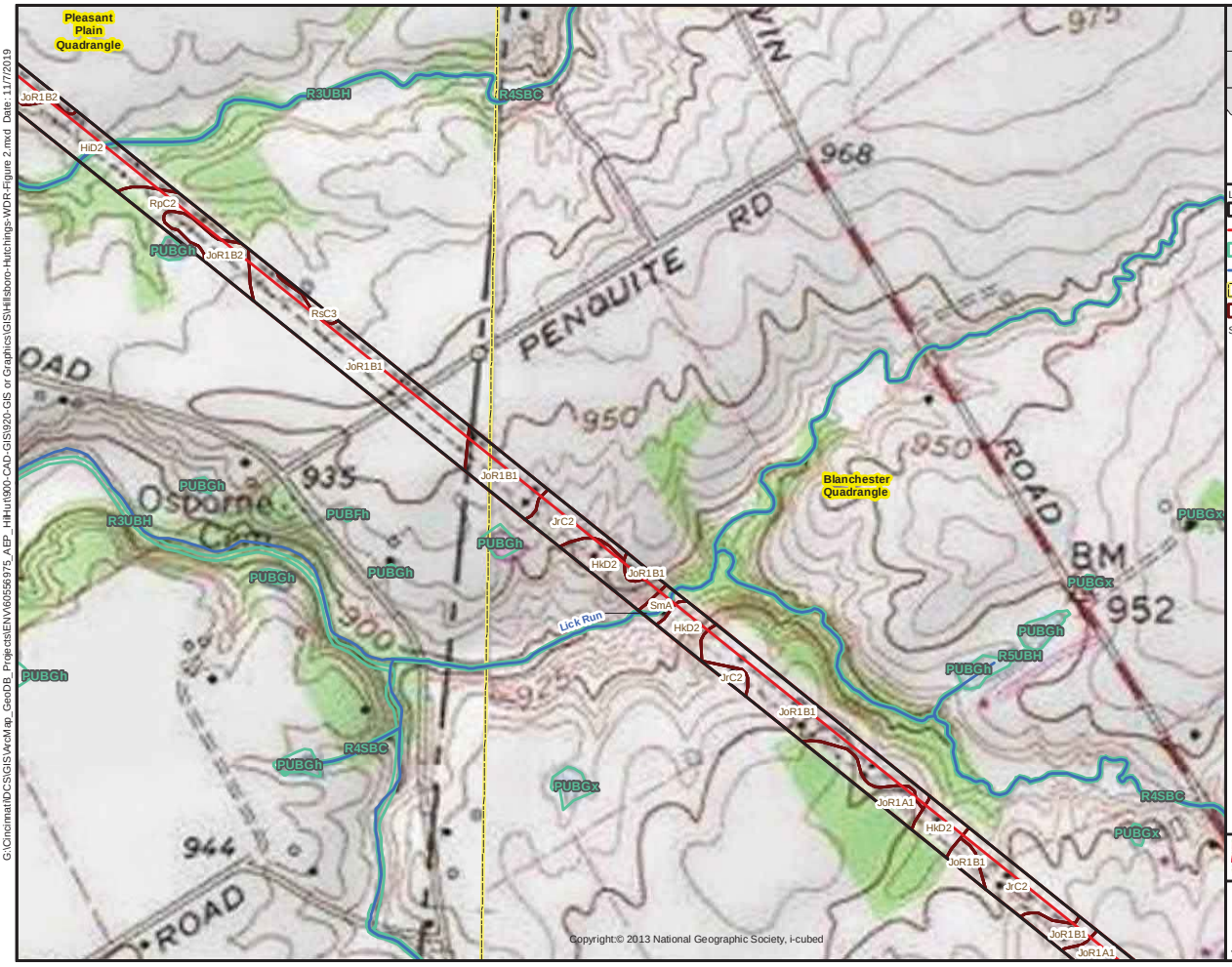

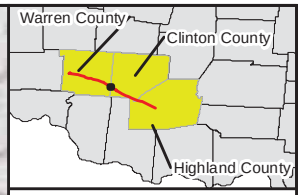

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- HiD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- HkD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- JrC2; Jonesboro-Rossmoyne silt loams, 6 to 12 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- RsC3; Rossmoyne silty clay loam, 6 to 12 percent slopes, severely eroded
- SmA; Sligo silt loam, 0 to 1 percent slopes, occasionally flooded

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2T
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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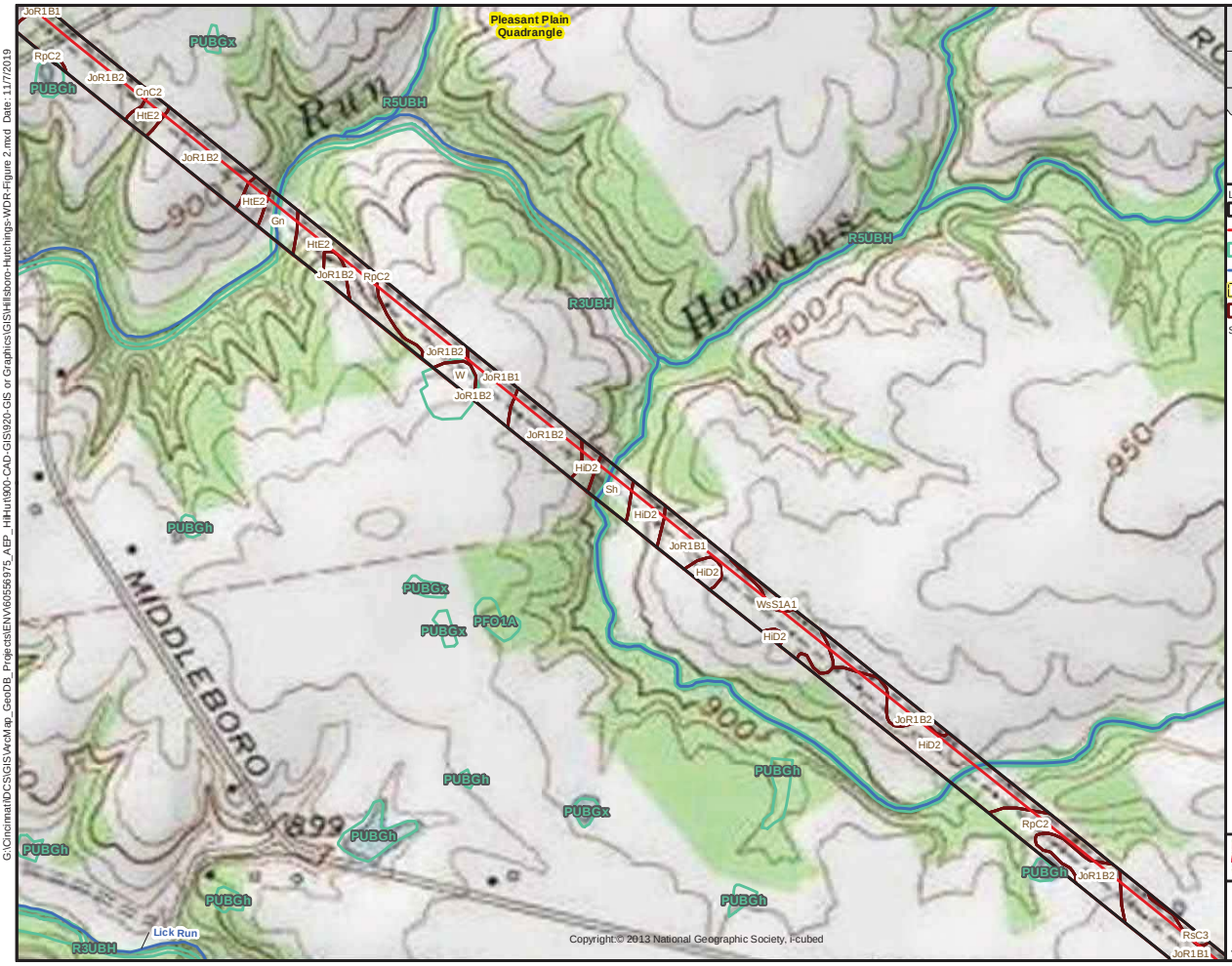

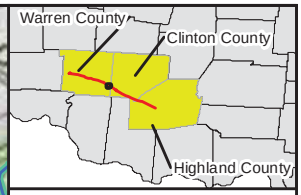

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- Gn; Genesee loam
- HiD2; Hickory silt loam, 12 to 18 percent slopes, eroded
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- RsC3; Rossmoyne silty clay loam, 6 to 12 percent slopes, severely eroded
- Sh; Shoals silt loam, 0 to 2 percent slopes, frequently flooded
- W; Water
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2U
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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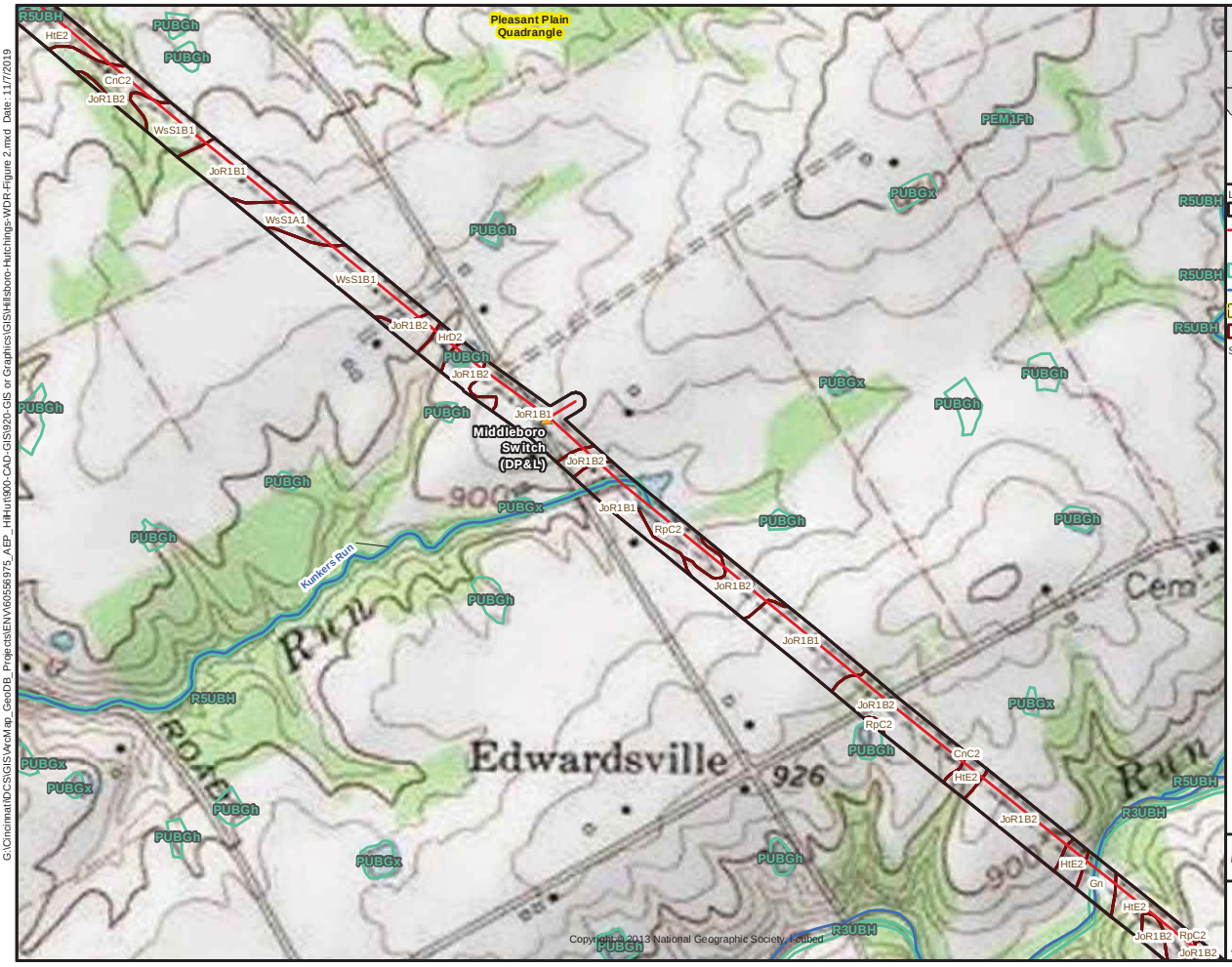

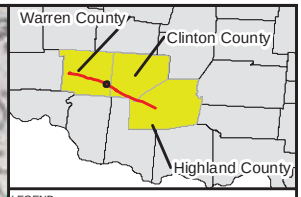

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- Existing Station
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- Gn; Genesee loam
- HrD2; Hickory silt loam, 12 to 18 percent slopes, moderately eroded
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2V
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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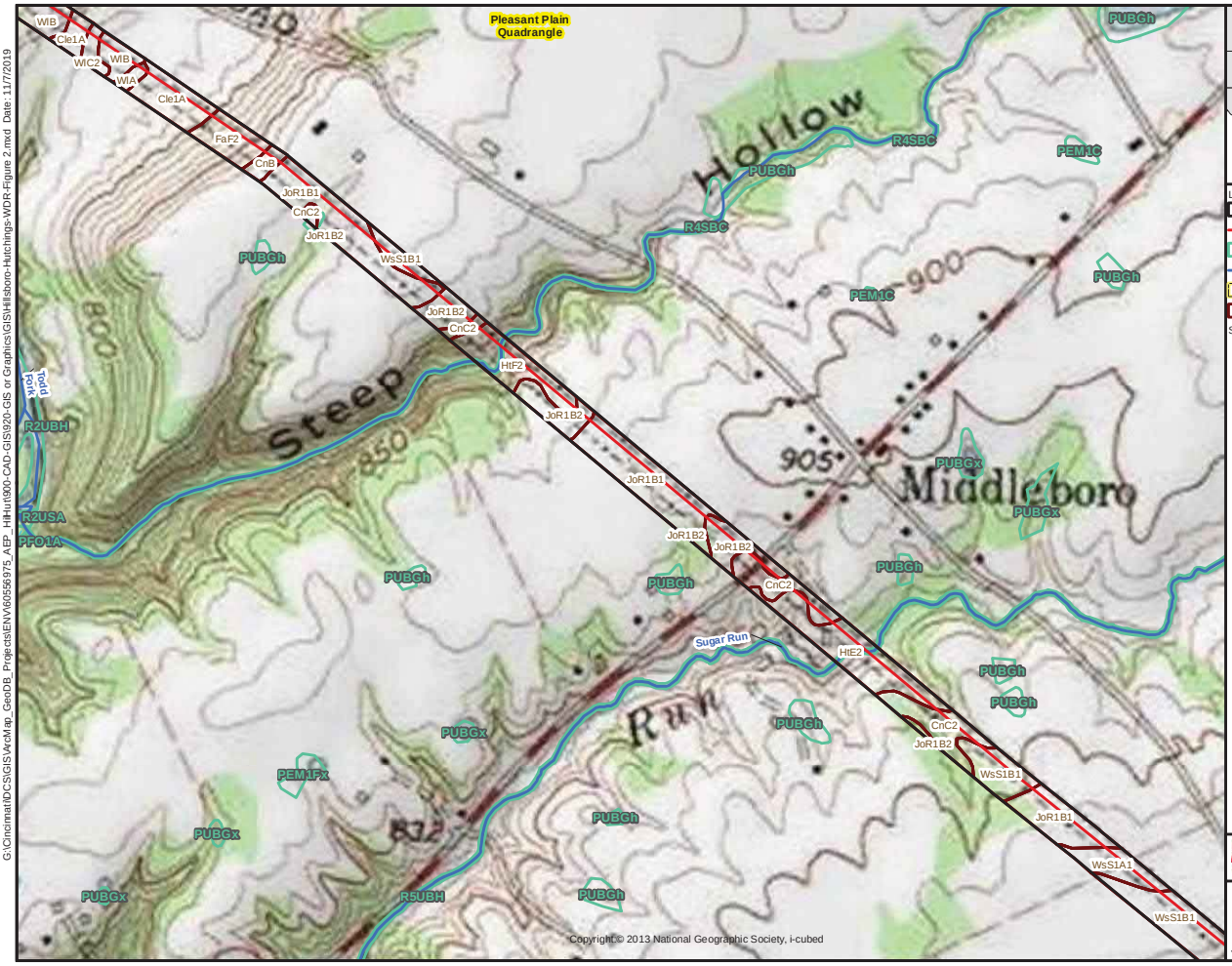

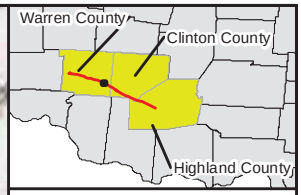

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- CnB; Cincinnati silt loam, 2 to 6 percent slopes
- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- WlA; Williamsburg silt loam, 0 to 2 percent slopes
- WlB; Williamsburg silt loam, 2 to 6 percent slopes
- WlC2; Williamsburg silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2W
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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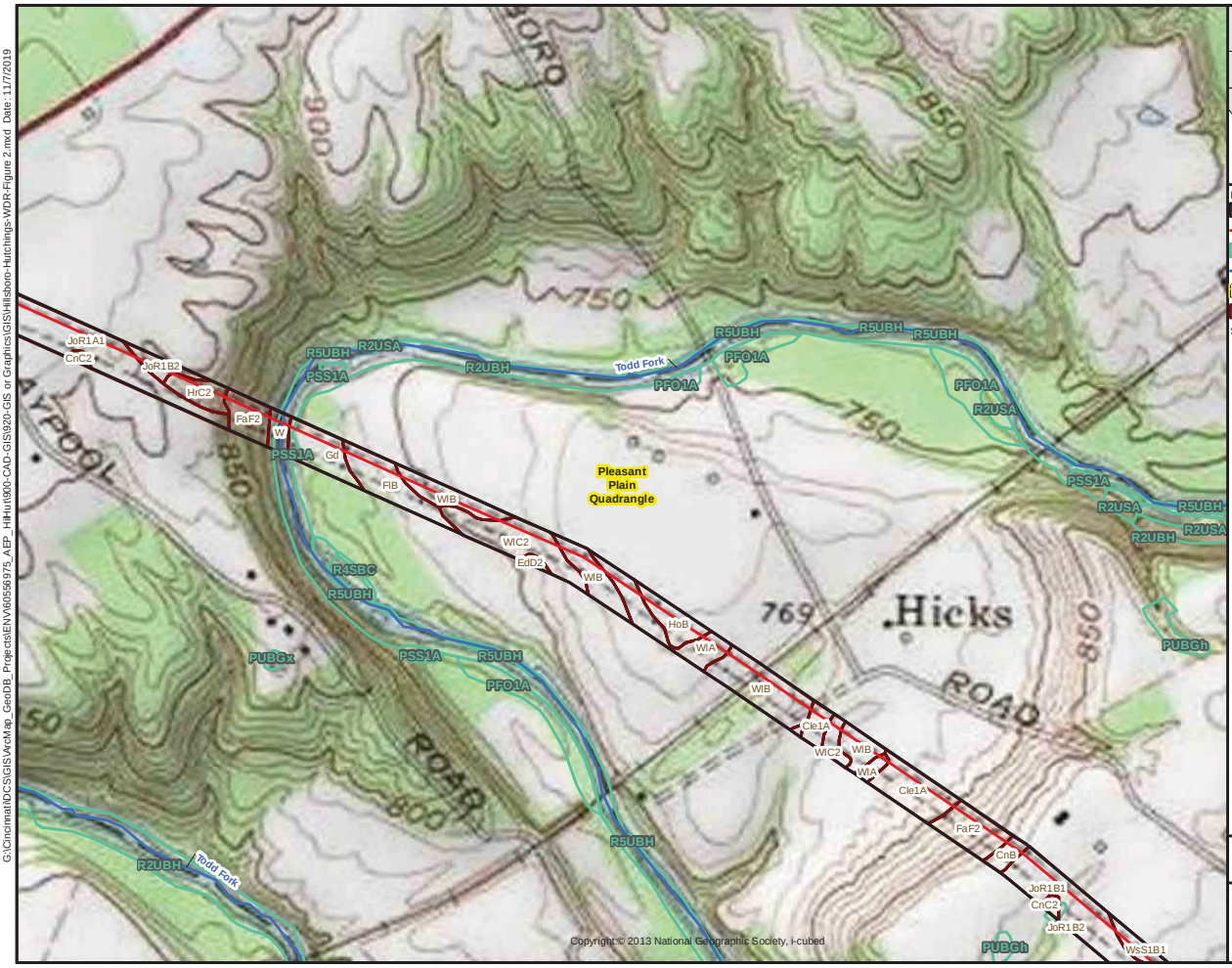

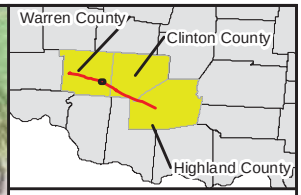

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- CnB; Cincinnati silt loam, 2 to 6 percent slopes
- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- EdD2; Eden complex, 12 to 18 percent slopes, moderately eroded
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- FlB; Fox loam, 2 to 6 percent slopes
- Gd; Genesee fine sandy loam
- HoB; Henshaw silt loam, 1 to 4 percent slopes
- HrC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- W; Water
- WlA; Williamsburg silt loam, 0 to 2 percent slopes
- WlB; Williamsburg silt loam, 2 to 6 percent slopes
- WlC2; Williamsburg silt loam, 6 to 12 percent slopes, moderately eroded
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2X
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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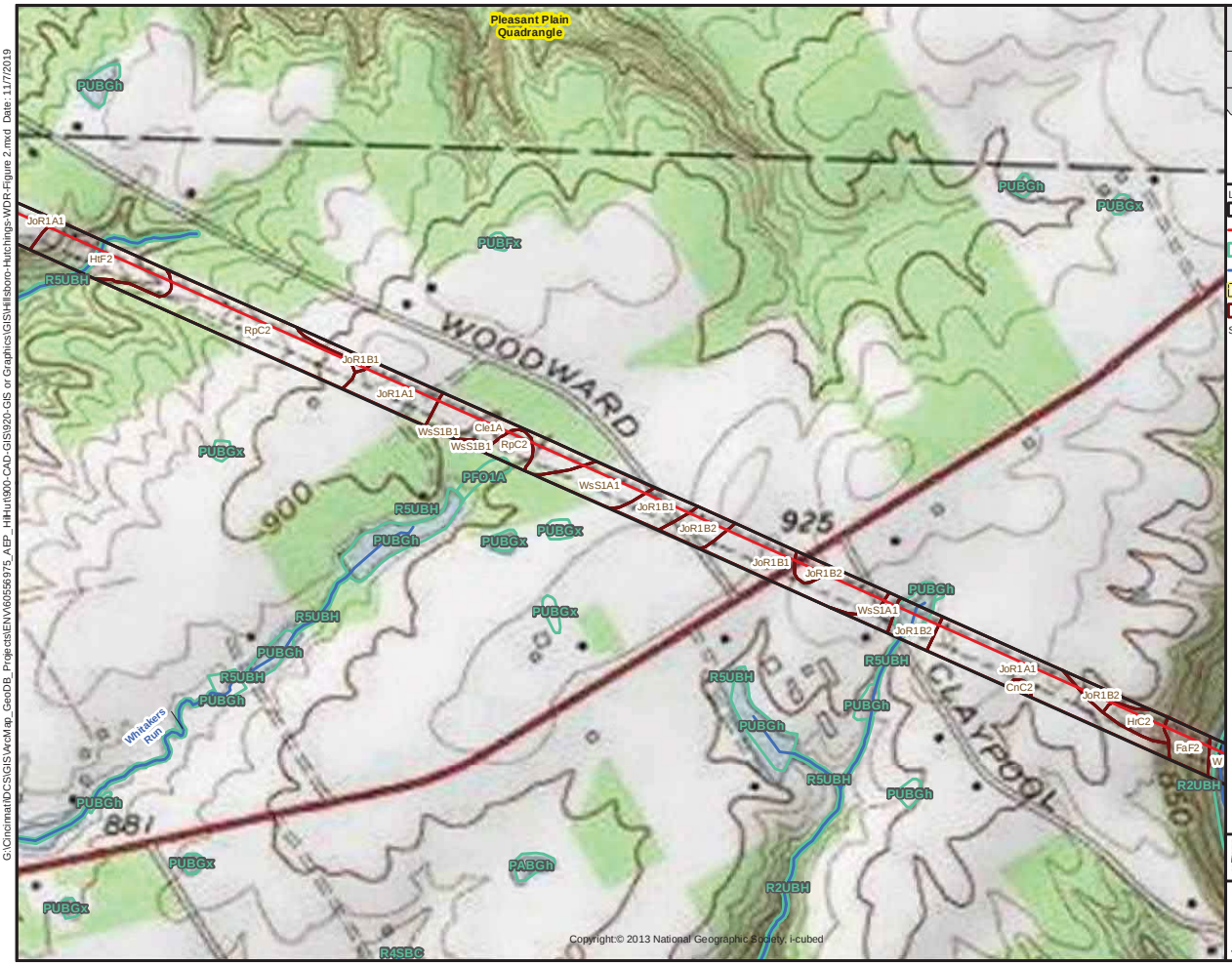

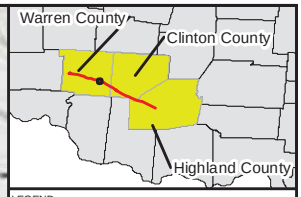

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Cle1A; Clermont silt loam, 0 to 1 percent slopes
- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- HrC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- W; Water
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes
- WsS1B1; Westboro-Schaffer silt loams, 2 to 4 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2Y
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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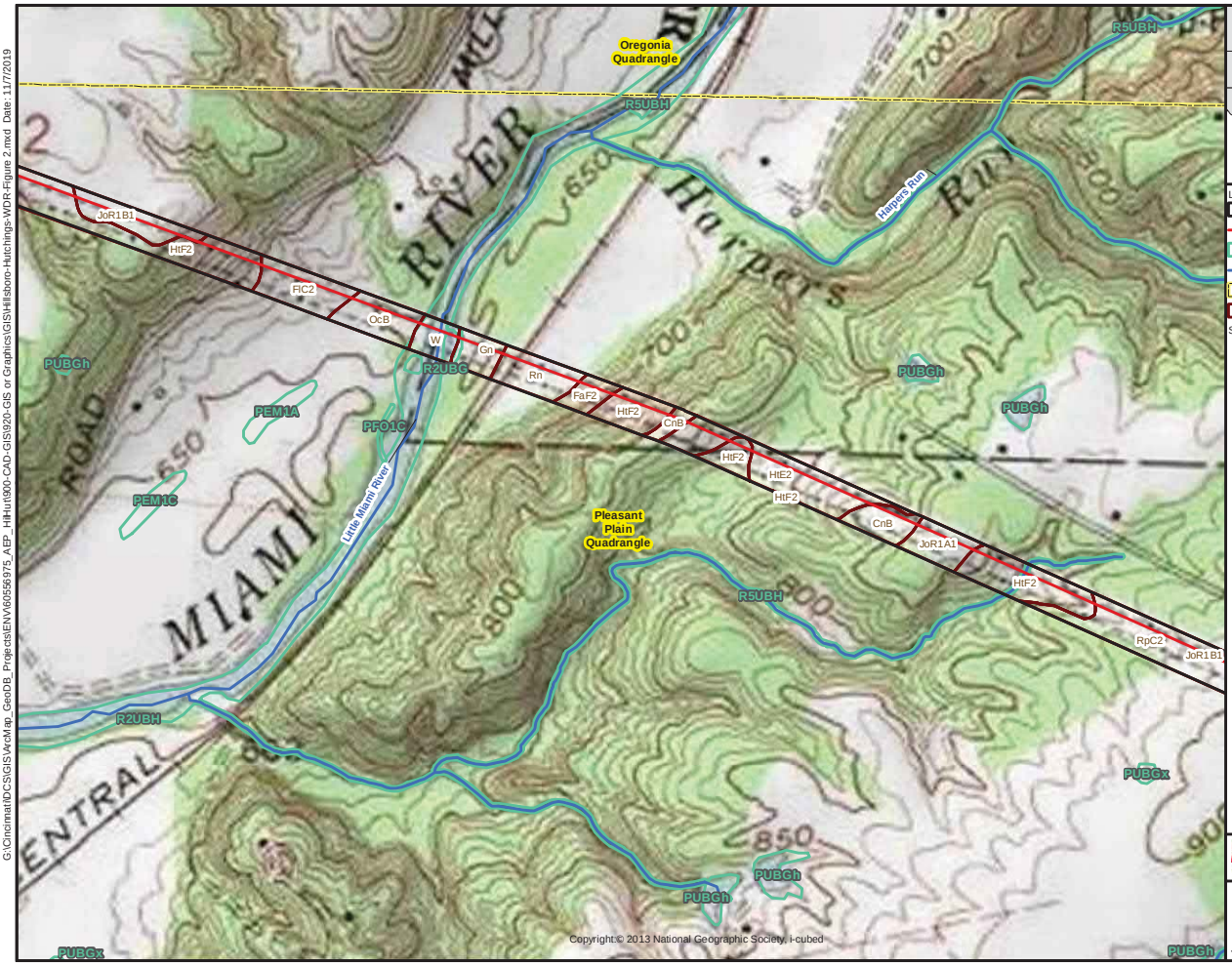

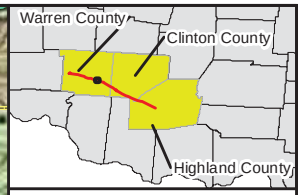

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- CnB; Cincinnati silt loam, 2 to 6 percent slopes
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- FlC2; Fox loam, 6 to 12 percent slopes, moderately eroded
- Gn; Genesee loam
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- OcB; Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes
- Rn; Ross loam, 0 to 2 percent slopes, occasionally flooded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- W; Water

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2Z
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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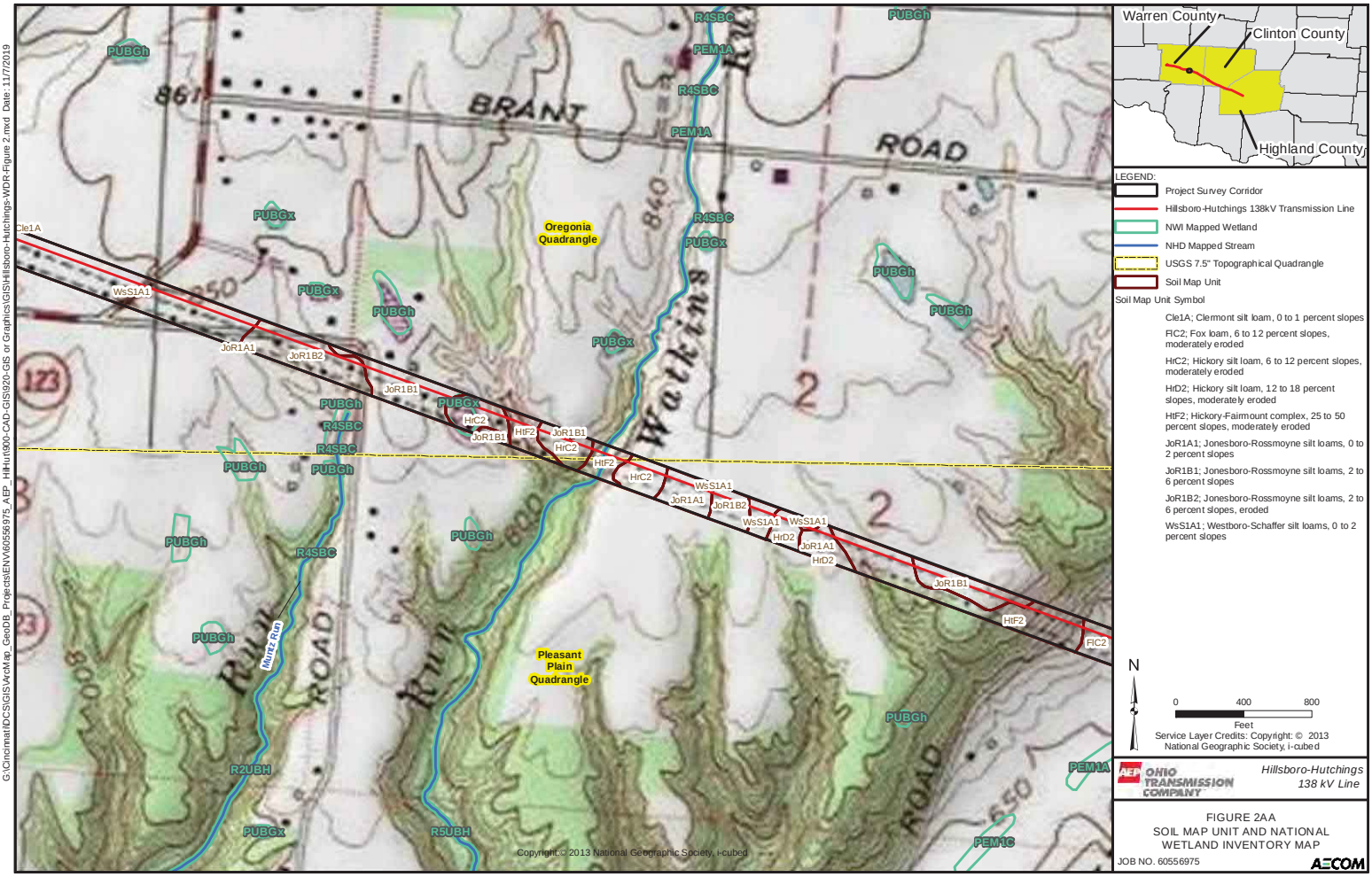

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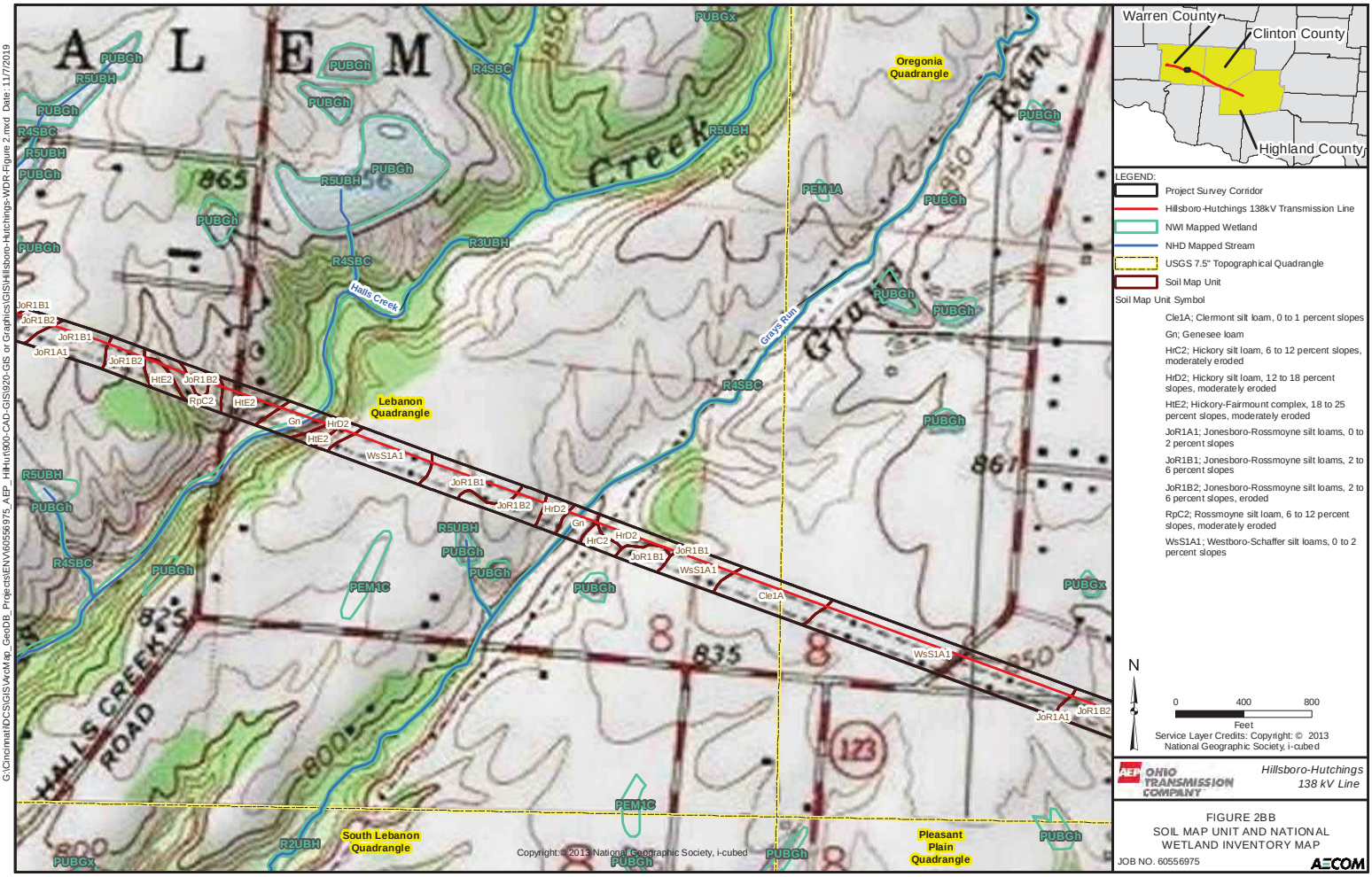

FIGURE 2BB
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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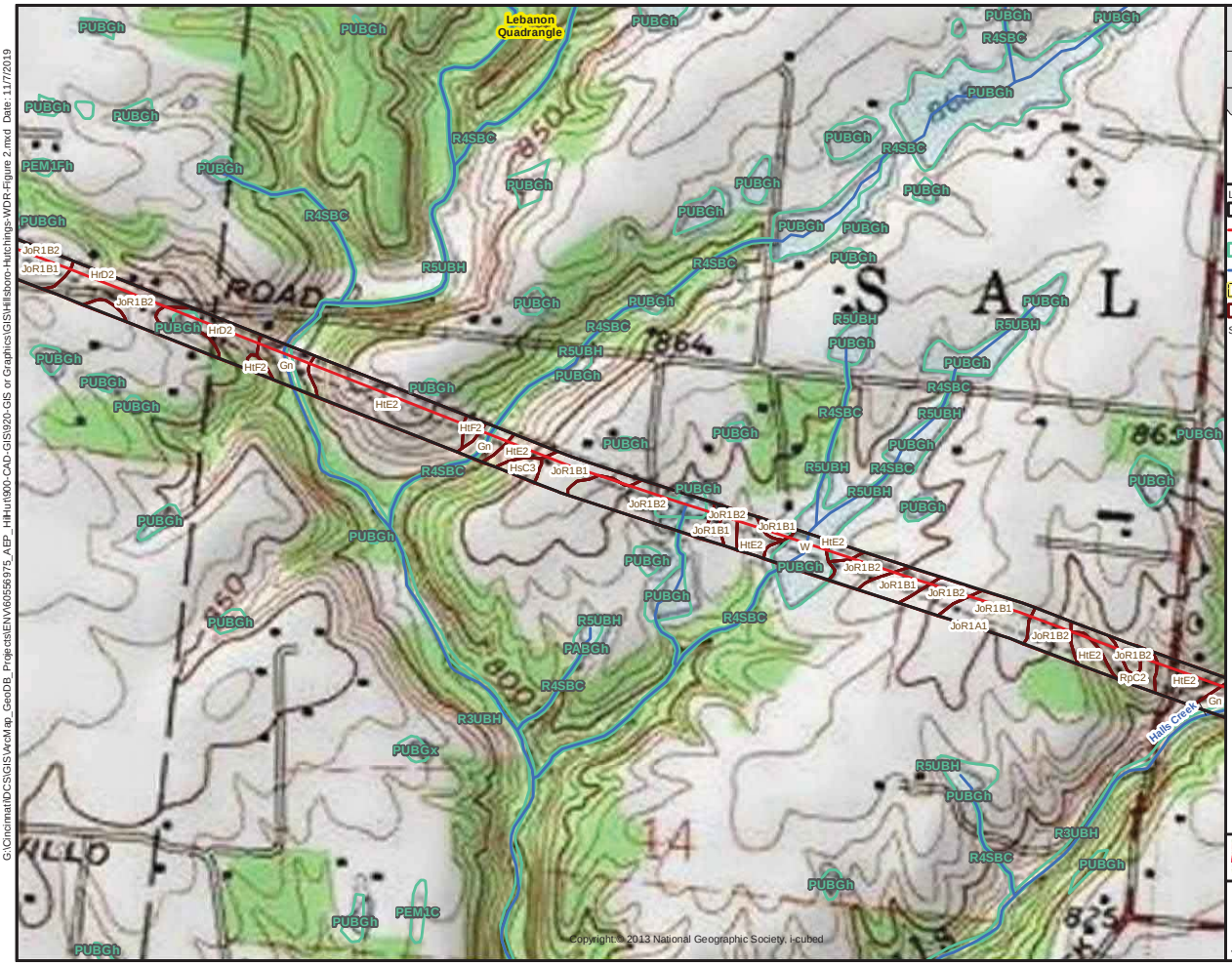

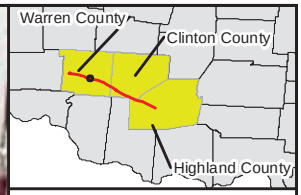

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Gn; Genesee loam
- HrD2; Hickory silt loam, 12 to 18 percent slopes, moderately eroded
- HsC3; Hickory clay loam, 6 to 12 percent slopes, severely eroded
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- RpC2; Rossmoyne silt loam, 6 to 12 percent slopes, moderately eroded
- W; Water

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2CC
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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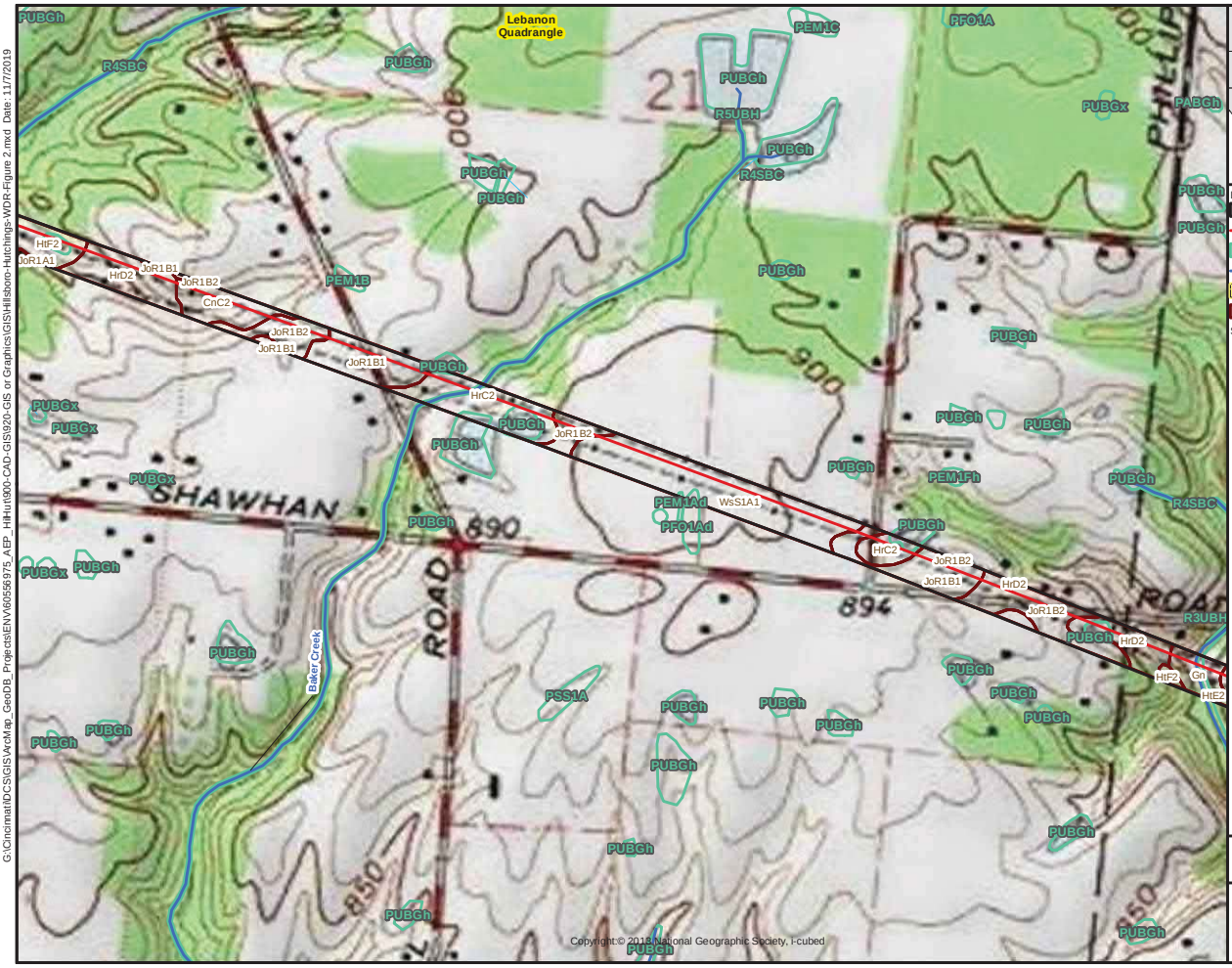

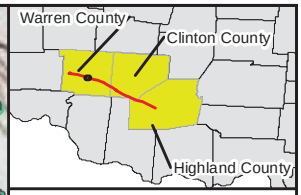

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- Gn; Genesee loam
- HrC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- HrD2; Hickory silt loam, 12 to 18 percent slopes, moderately eroded
- HtE2; Hickory-Fairmount complex, 18 to 25 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded
- WsS1A1; Westboro-Schaffer silt loams, 0 to 2 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2DD
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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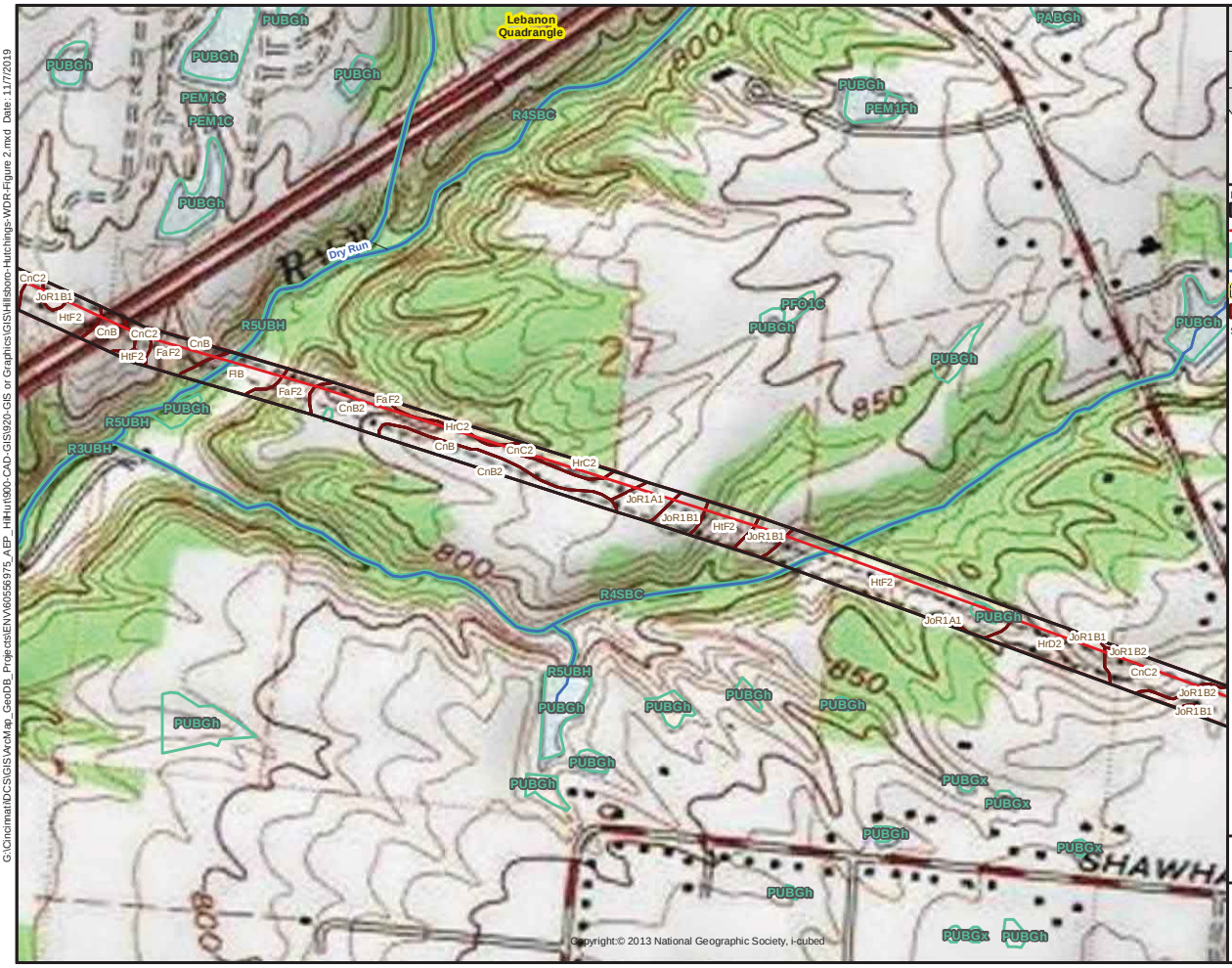

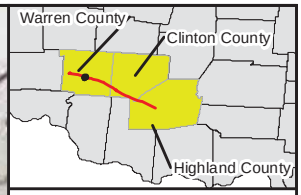

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- CnB2; Cincinnati silt loam, 2 to 6 percent slopes, eroded
- CnB; Cincinnati silt loam, 2 to 6 percent slopes
- CnC2; Cincinnati silt loam, 6 to 12 percent slopes, eroded
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- FlB; Fox loam, 2 to 6 percent slopes
- HrC2; Hickory silt loam, 6 to 12 percent slopes, moderately eroded
- HrD2; Hickory silt loam, 12 to 18 percent slopes, moderately eroded
- HtF2; Hickory-Fairmount complex, 25 to 50 percent slopes, moderately eroded
- JoR1A1; Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes
- JoR1B1; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes
- JoR1B2; Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2EE
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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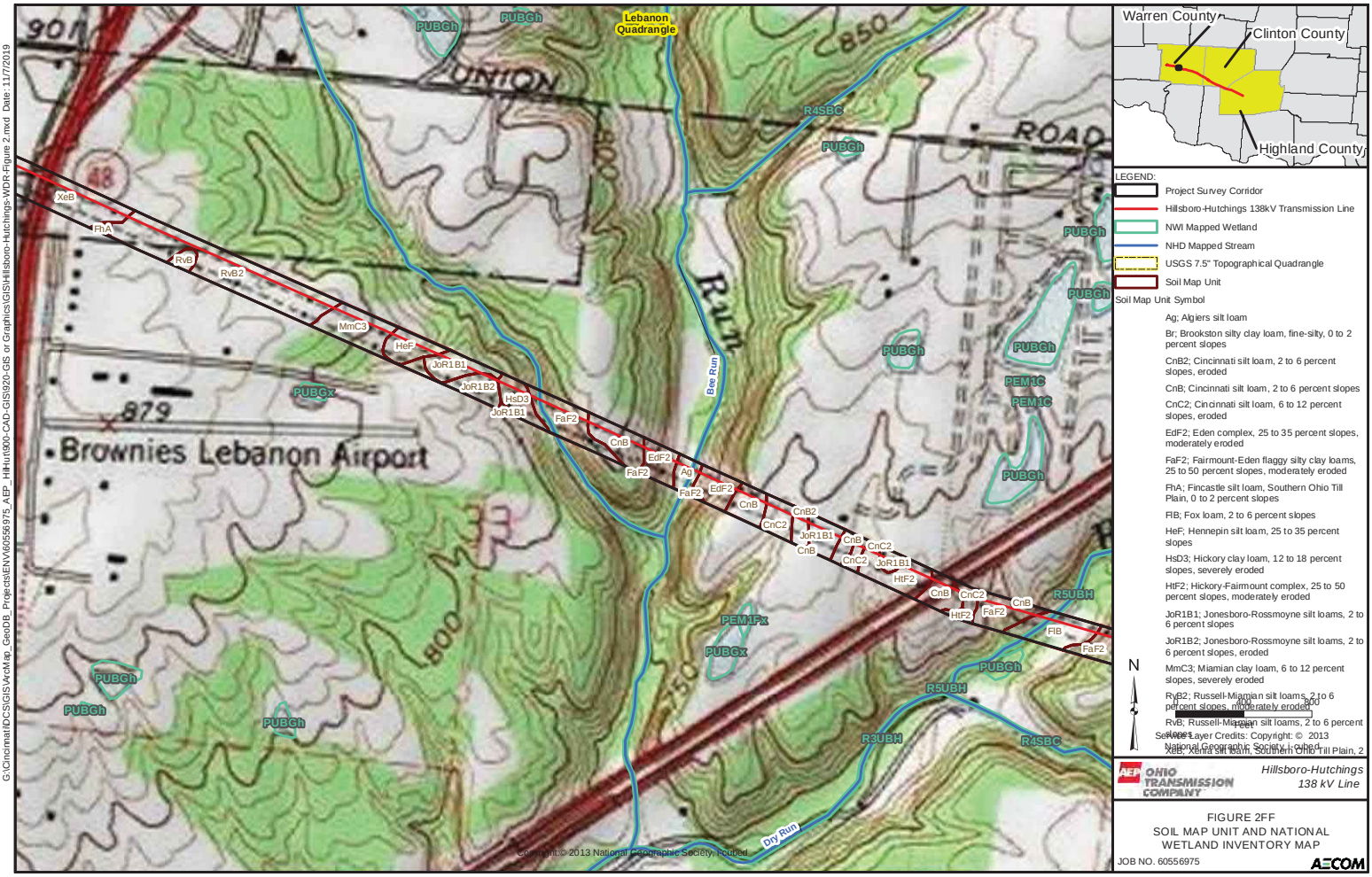

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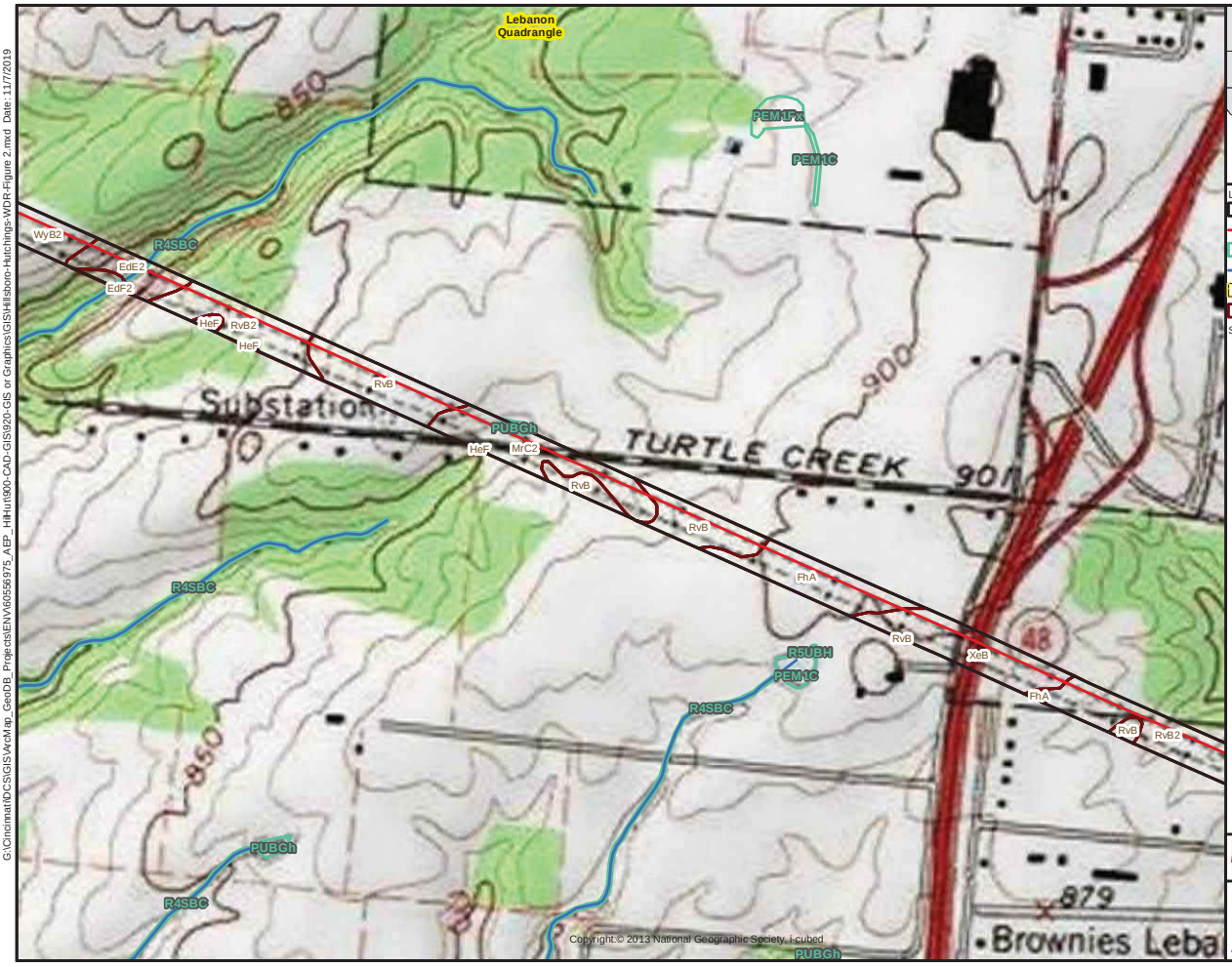

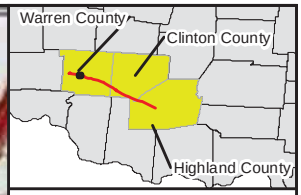

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Br; Brookston silty clay loam, fine-silty, 0 to 2 percent slopes
- EdE2; Eden complex, 18 to 25 percent slopes, moderately eroded
- EdF2; Eden complex, 25 to 35 percent slopes, moderately eroded
- FhA; Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes
- HeF; Hennepin silt loam, 25 to 35 percent slopes
- MrC2; Miamian-Russell silt loams, 6 to 12 percent slopes, eroded
- RvB2; Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded
- RvB; Russell-Miamian silt loams, 2 to 6 percent slopes
- WyB2; Wynn silt loam, 2 to 6 percent slopes, moderately eroded
- XeB; Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2GG
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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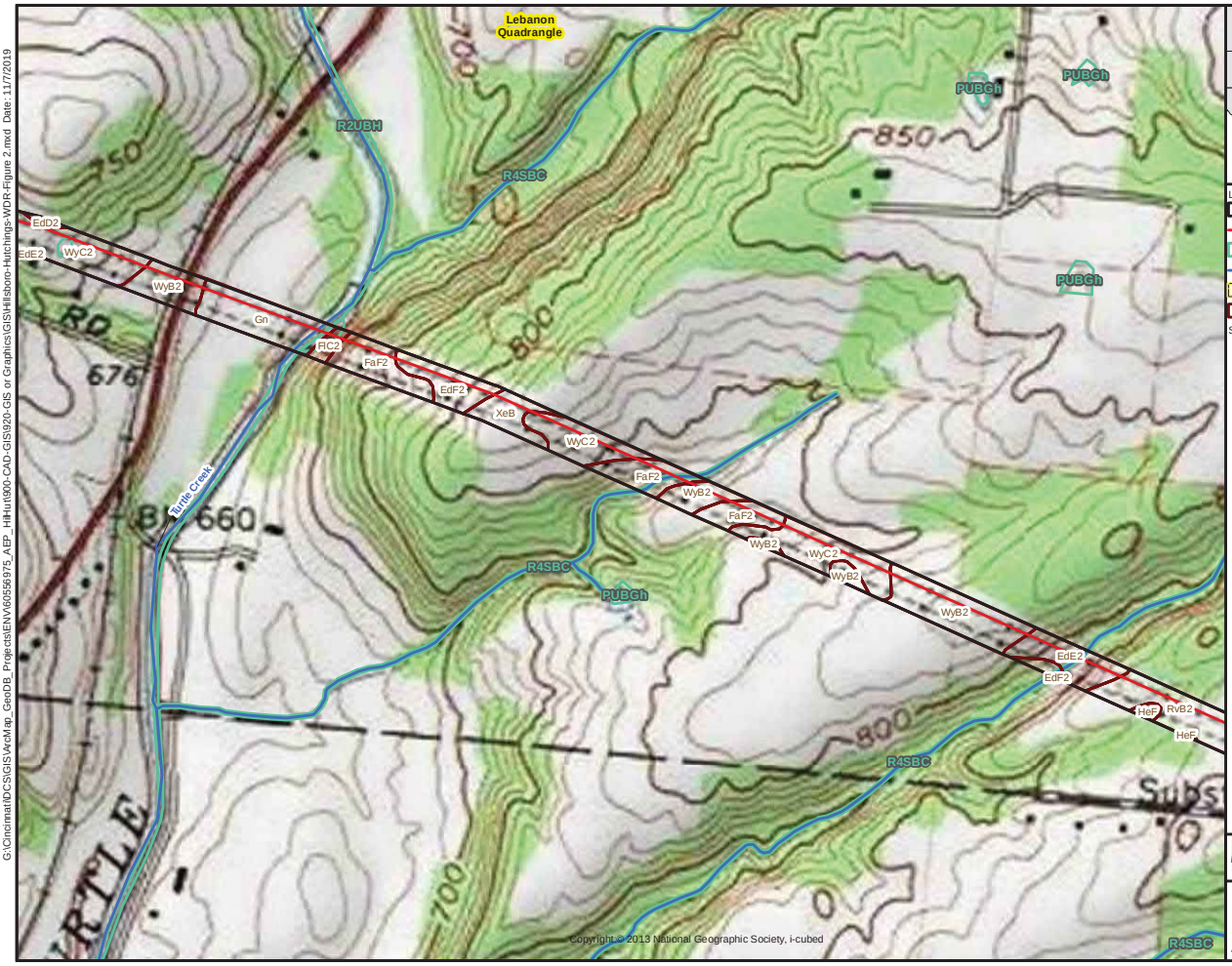

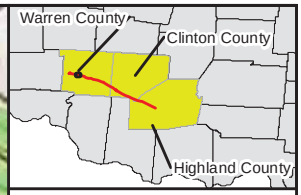

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- EdD2; Eden complex, 12 to 18 percent slopes, moderately eroded
- EdE2; Eden complex, 18 to 25 percent slopes, moderately eroded
- EdF2; Eden complex, 25 to 35 percent slopes, moderately eroded
- FaF2; Fairmount-Eden flaggy silty clay loams, 25 to 50 percent slopes, moderately eroded
- FlC2; Fox loam, 6 to 12 percent slopes, moderately eroded
- Gn; Genesee loam
- HeF; Hennepin silt loam, 25 to 35 percent slopes
- RvB2; Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded
- WyB2; Wynn silt loam, 2 to 6 percent slopes, moderately eroded
- WyC2; Wynn silt loam, 6 to 12 percent slopes, moderately eroded
- XeB; Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2HH
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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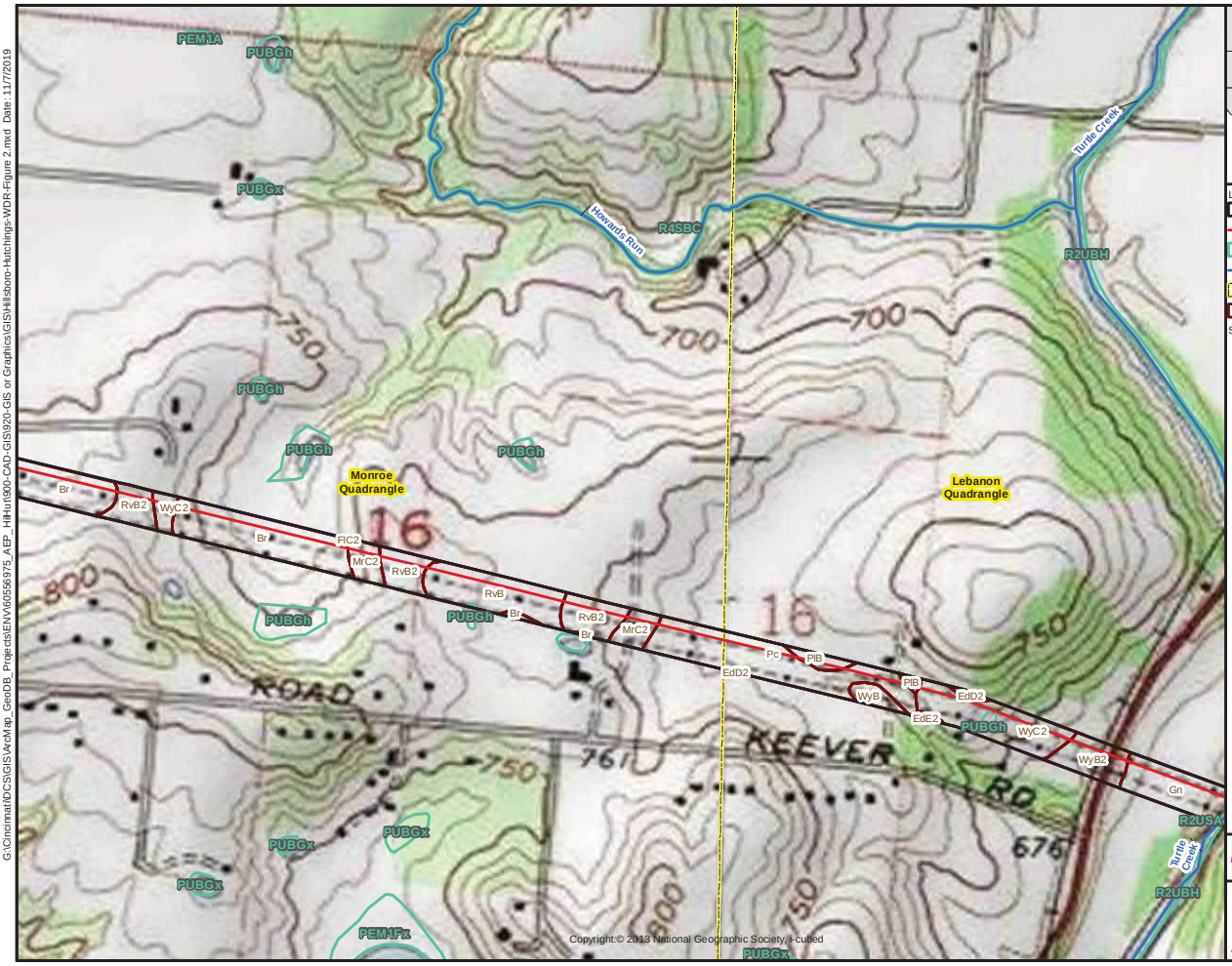

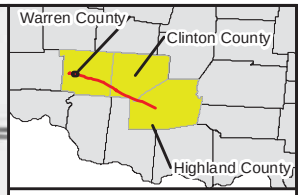

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Br; Brookston silty clay loam, fine-silty, 0 to 2 percent slopes
- EdD2; Eden complex, 12 to 18 percent slopes, moderately eroded
- EdE2; Eden complex, 18 to 25 percent slopes, moderately eroded
- FlC2; Fox loam, 6 to 12 percent slopes, moderately eroded
- Gn; Genesee loam
- MrC2; Miamian-Russell silt loams, 6 to 12 percent slopes, eroded
- Pc; Patton silty clay loam, 0 to 2 percent slopes
- PlB; Plattville silt loam, 1 to 6 percent slopes
- RvB2; Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded
- RvB; Russell-Miamian silt loams, 2 to 6 percent slopes
- WyB2; Wynn silt loam, 2 to 6 percent slopes, moderately eroded
- WyB; Wynn silt loam, 2 to 6 percent slopes
- WyC2; Wynn silt loam, 6 to 12 percent slopes, moderately eroded

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2II
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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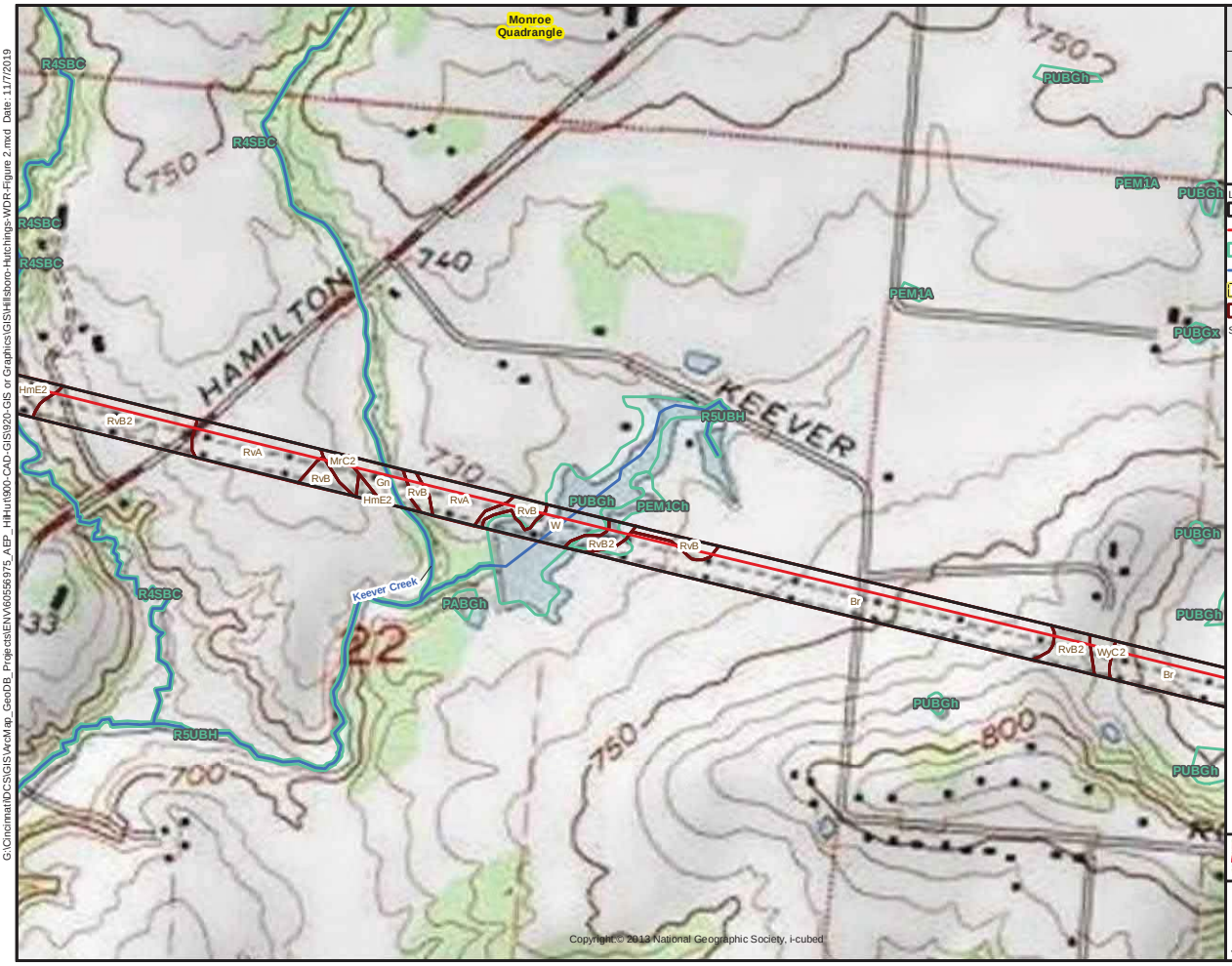

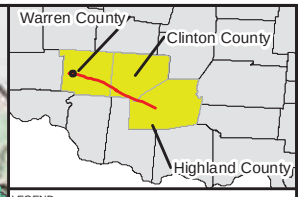

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5° Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- Br; Brookston silty clay loam, fine-silty, 0 to 2 percent slopes
- Gn; Genesee loam
- HmE2; Hennepin-Miamian silt loams, 18 to 25 percent slopes, moderately eroded
- MrC2; Miamian-Russell silt loams, 6 to 12 percent slopes, eroded
- RvA; Russell-Miamian silt loams, 0 to 2 percent slopes
- RvB2; Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded
- RvB; Russell-Miamian silt loams, 2 to 6 percent slopes
- W; Water
- WyC2; Wynn silt loam, 6 to 12 percent slopes, moderately eroded

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2JJ
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

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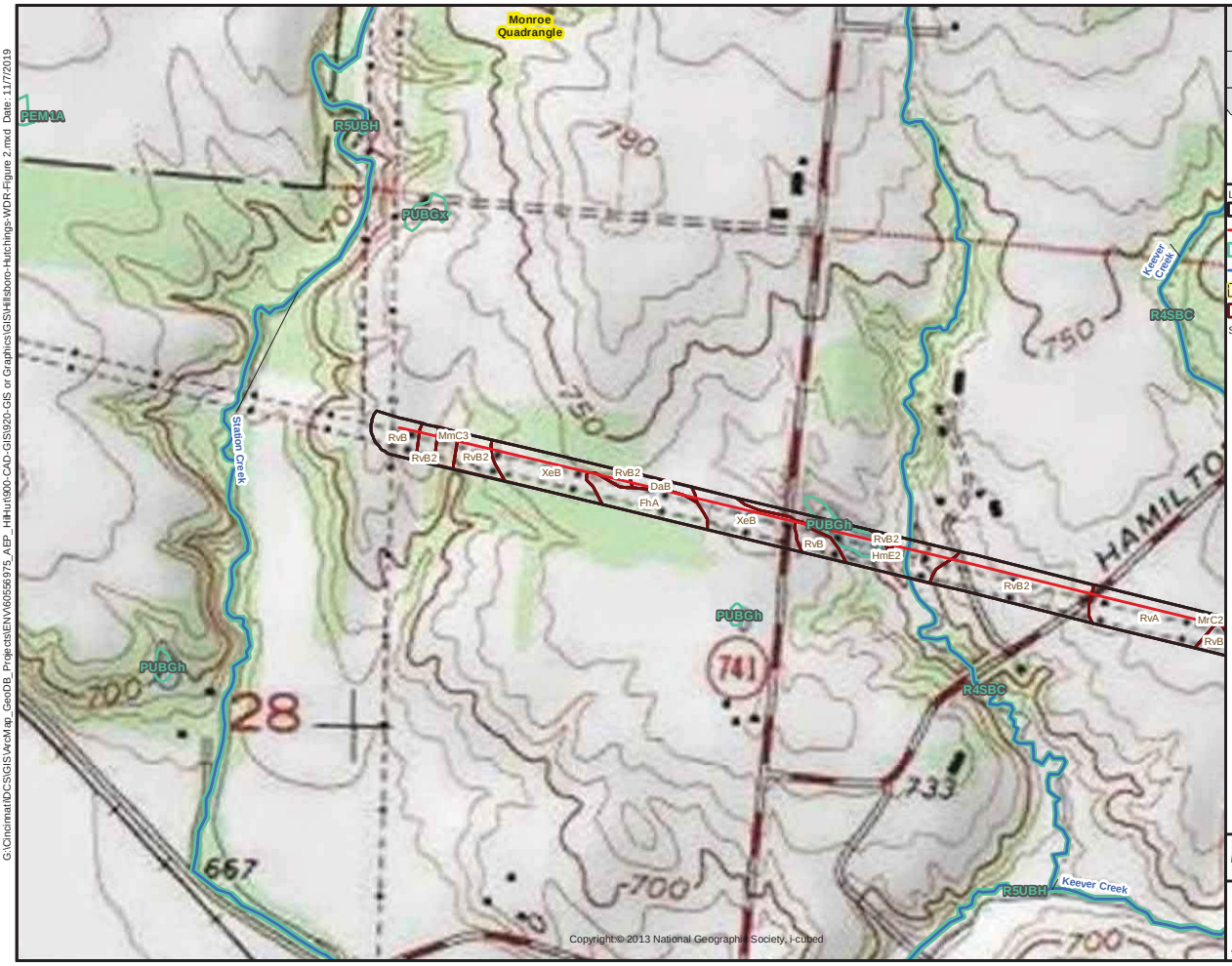

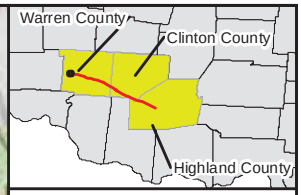

LEGEND:

- Project Survey Corridor
- Hillsboro-Hutchings 138kV Transmission Line
- NWI Mapped Wetland
- NHD Mapped Stream
- USGS 7.5" Topographical Quadrangle
- Soil Map Unit

Soil Map Unit Symbol

- DaB; Dana silt loam, 2 to 6 percent slopes
- FhA; Fincastle silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes
- HmE2; Hennepin-Miamian silt loams, 18 to 25 percent slopes, moderately eroded
- MmC3; Miamian clay loam, 6 to 12 percent slopes, severely eroded
- MrC2; Miamian-Russell silt loams, 6 to 12 percent slopes, eroded
- RvA; Russell-Miamian silt loams, 0 to 2 percent slopes
- RvB2; Russell-Miamian silt loams, 2 to 6 percent slopes, moderately eroded
- RvB; Russell-Miamian silt loams, 2 to 6 percent slopes
- XeB; Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 2KK
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60556975

AECOM

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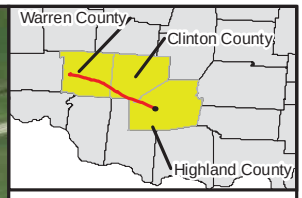

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location
- Existing Station

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3A
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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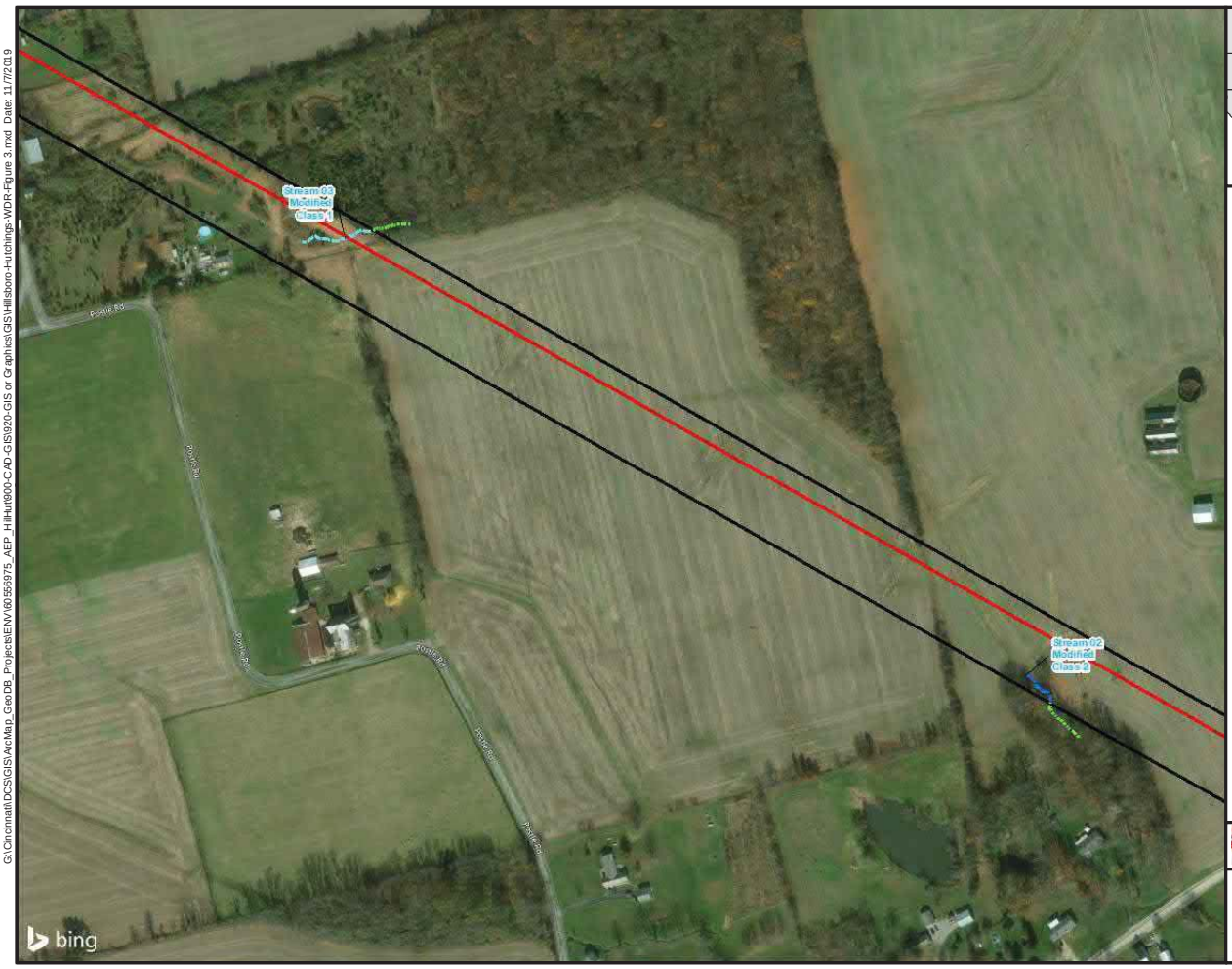

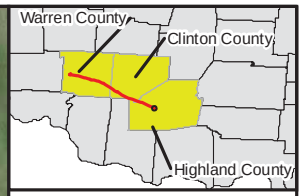

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3B
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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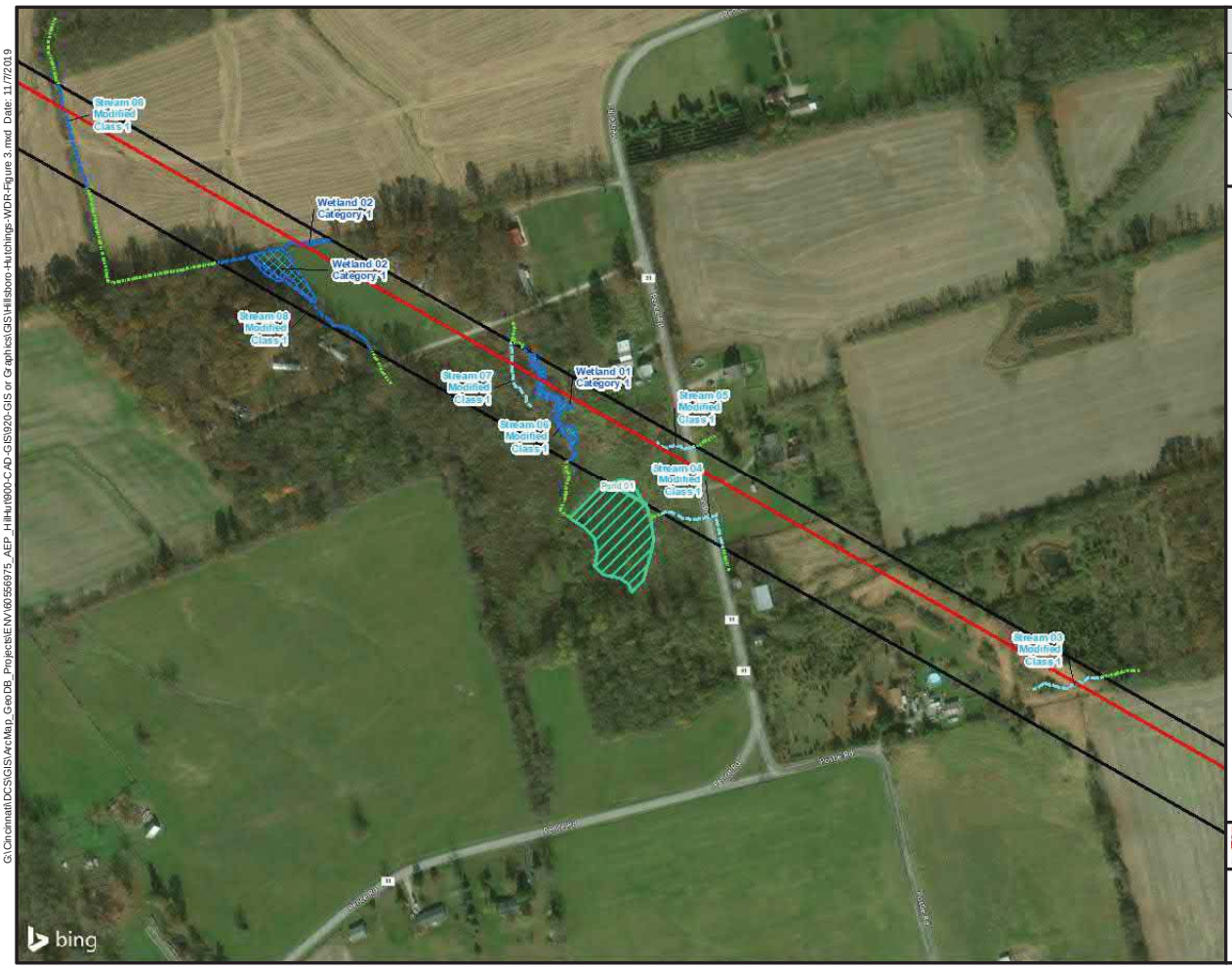

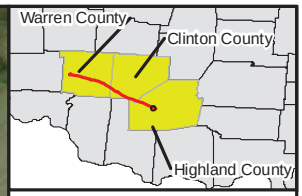

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3C
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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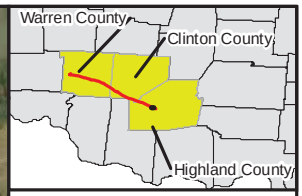

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3D
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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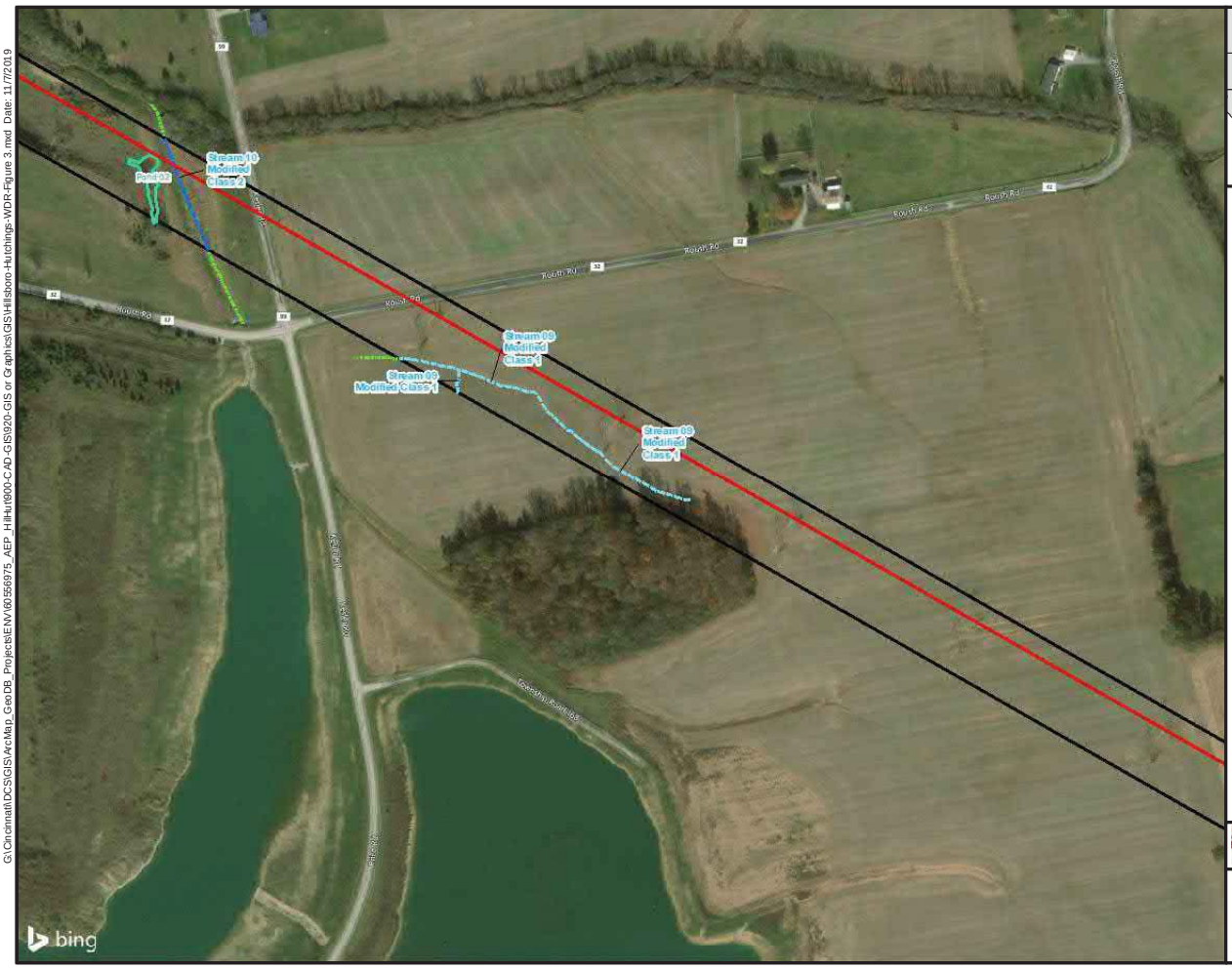

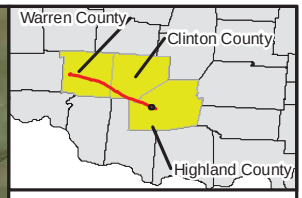

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3E
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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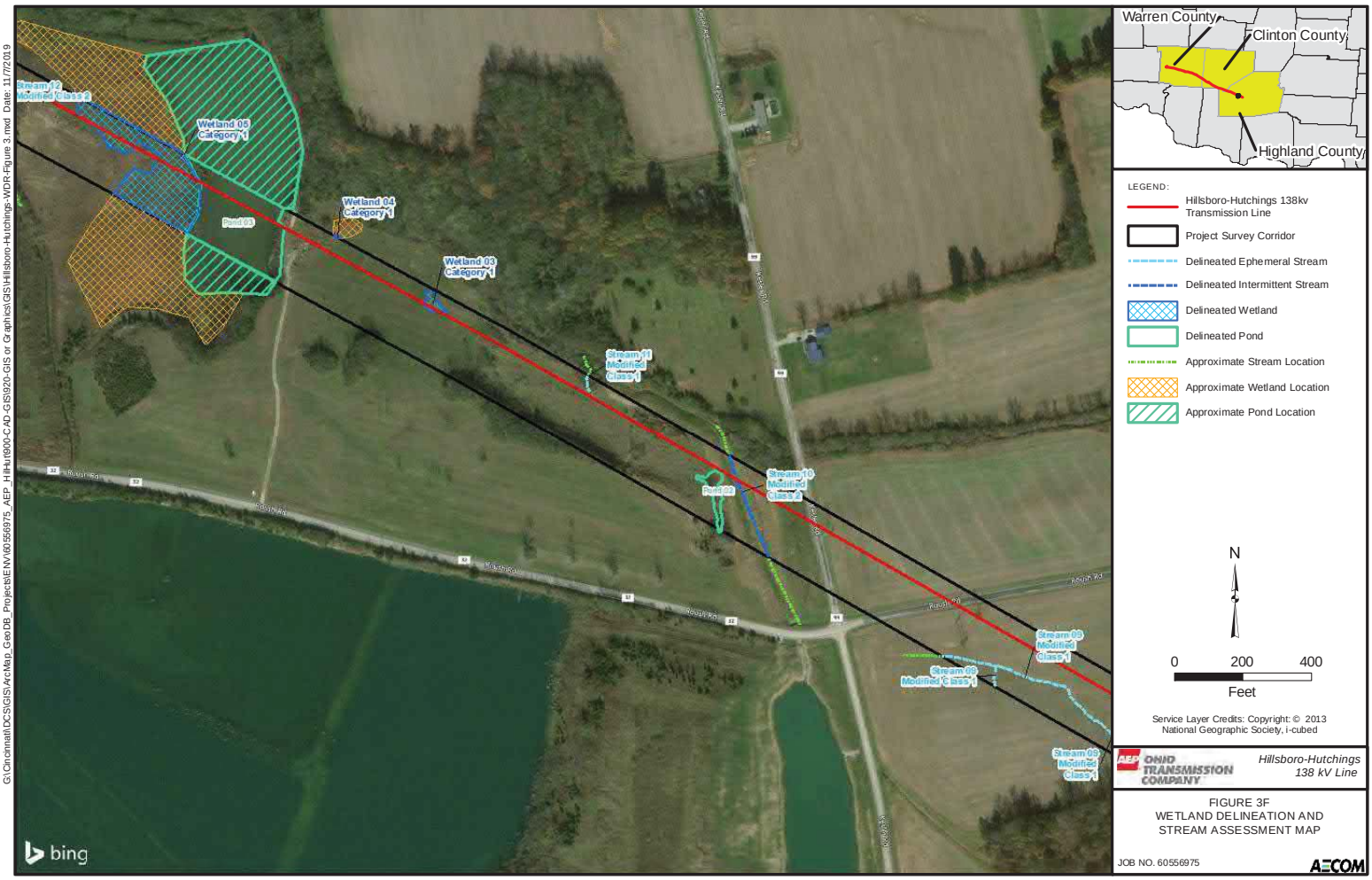

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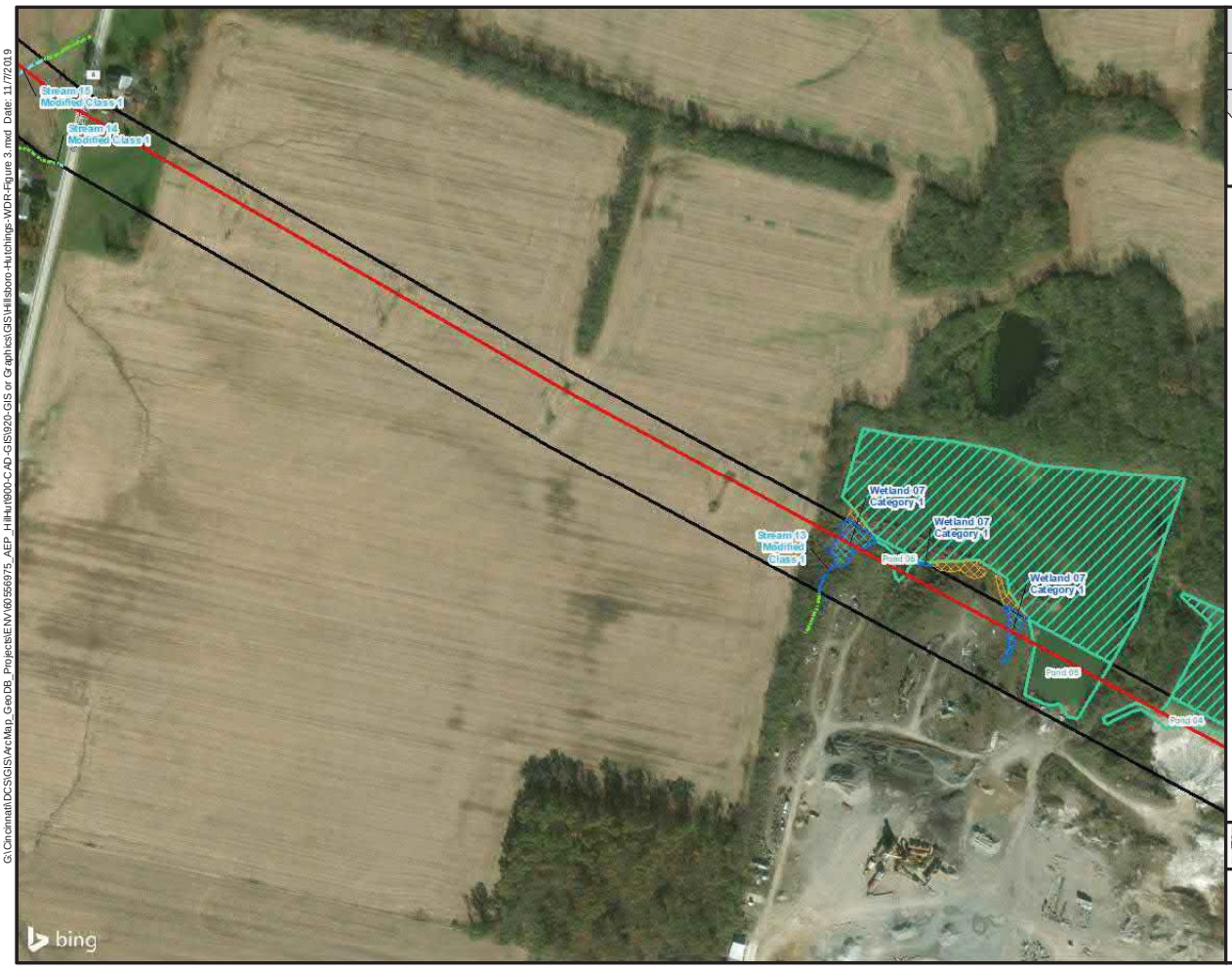

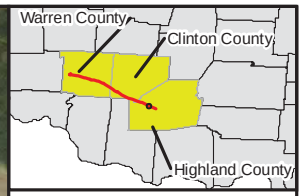

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Wetland Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3H
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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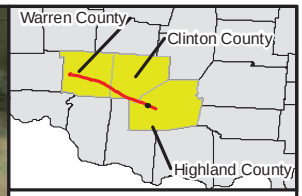

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3I
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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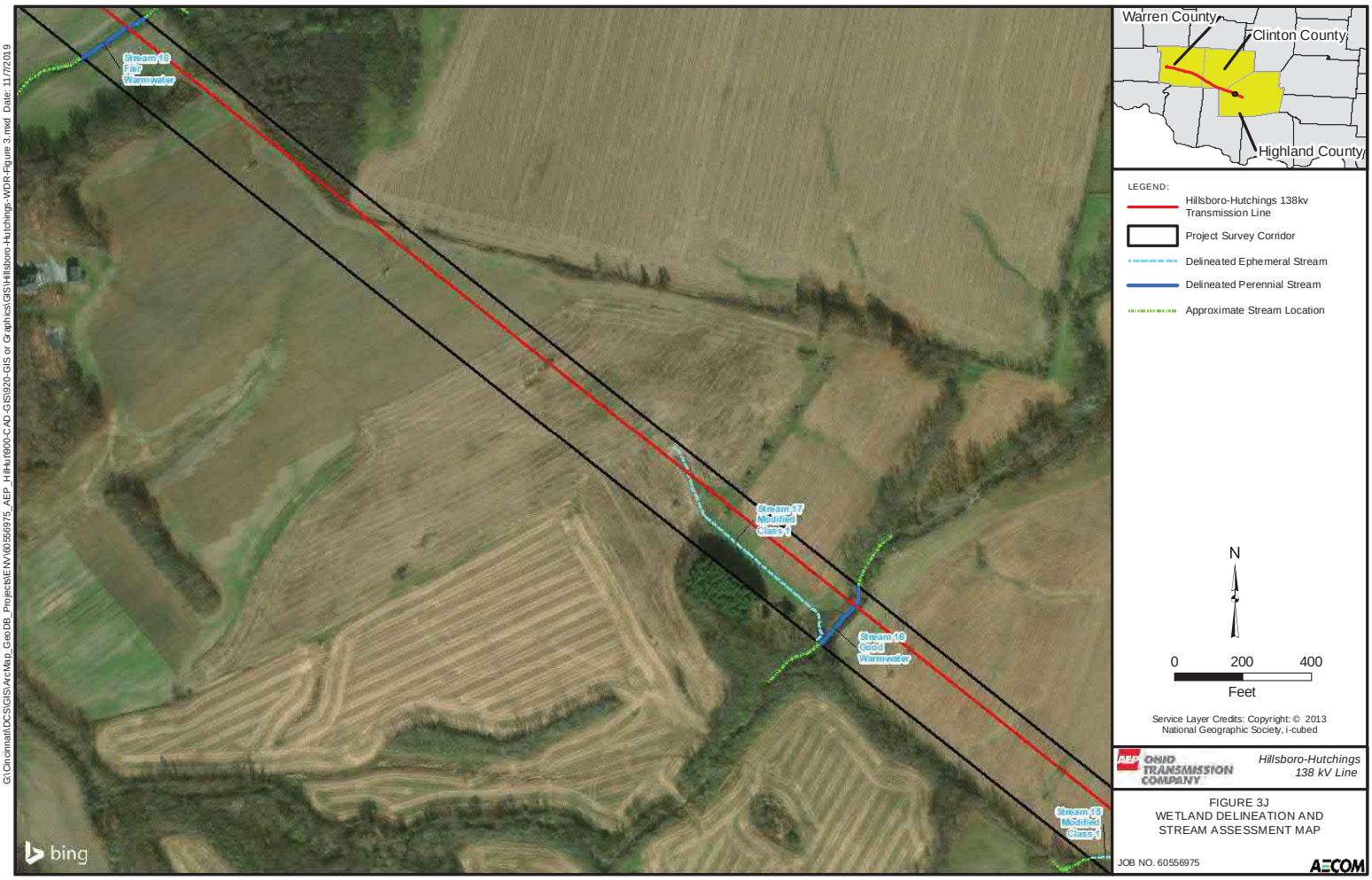

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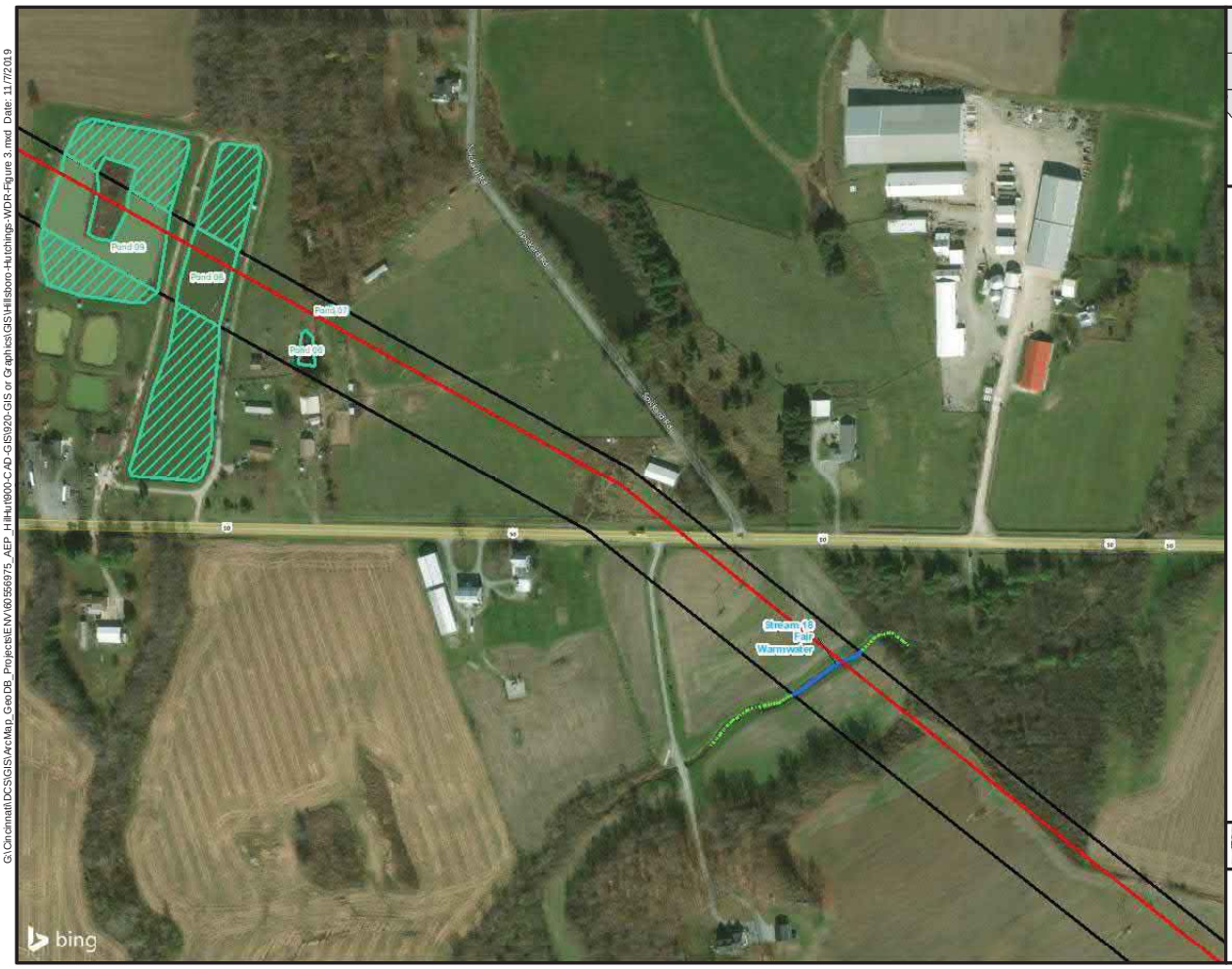
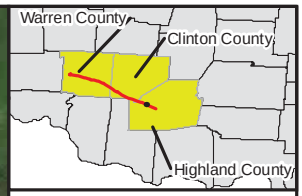




LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

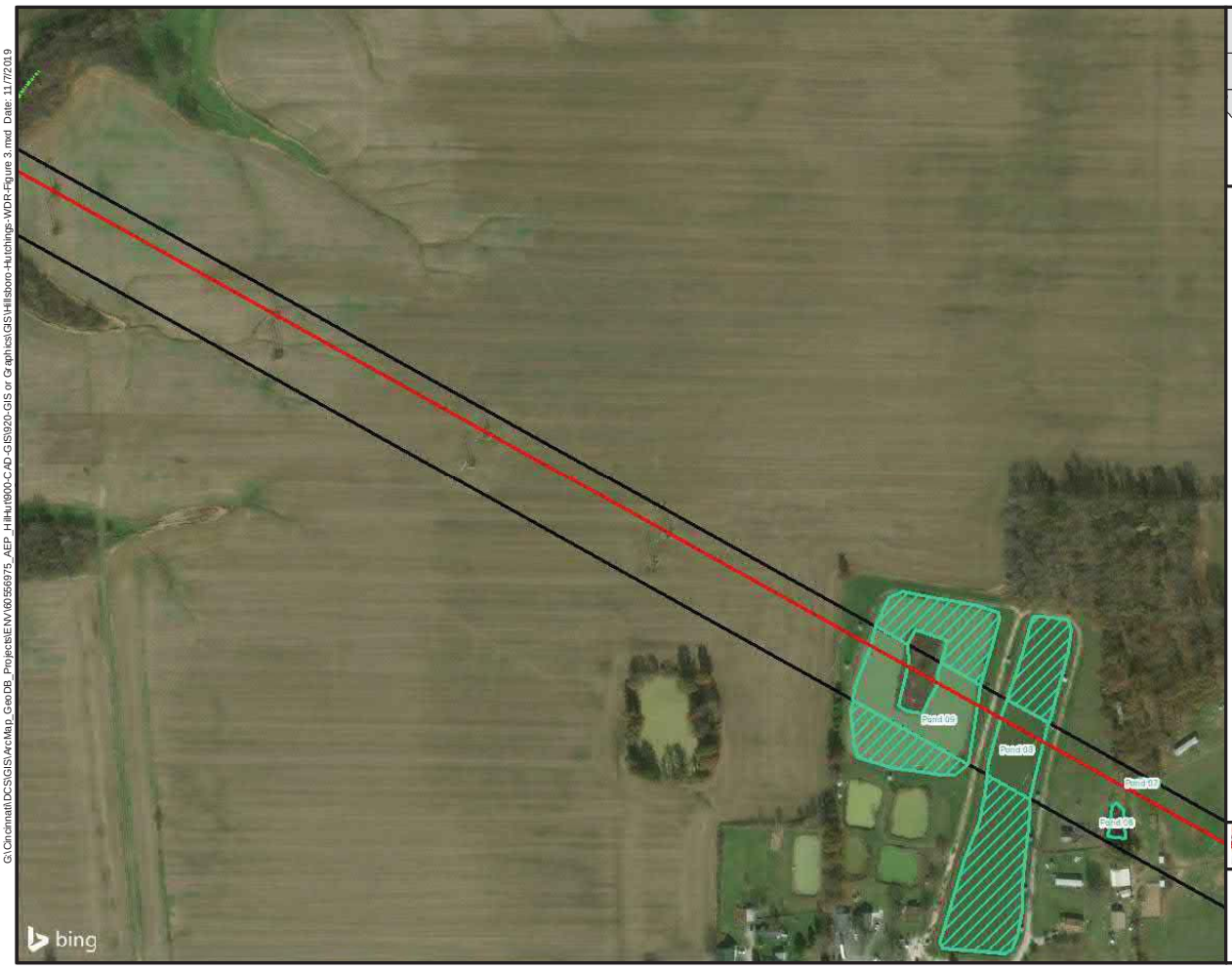
Hillsboro-Hutchings 138 kV Line

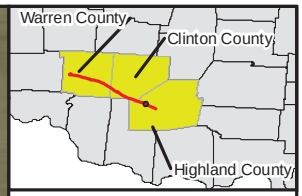
FIGURE 3K
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

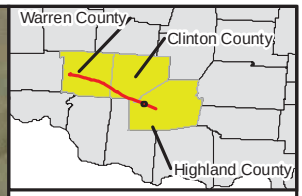
Hillsboro-Hutchings 138 kV Line

FIGURE 3L
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIV\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

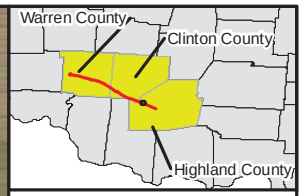
Hillsboro-Hutchings 138 kV Line

FIGURE 3M
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NY\60556975_AEP_HilHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

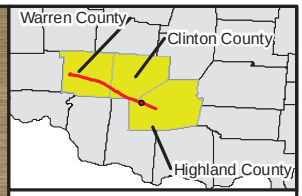
Hillsboro-Hutchings 138 kV Line

FIGURE 3N
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIV\60556975_AEP_HillHut600-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

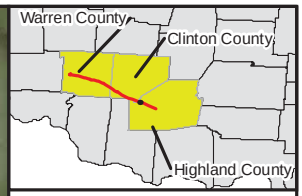
Hillsboro-Hutchings 138 kV Line

FIGURE 3O
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\V60\556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

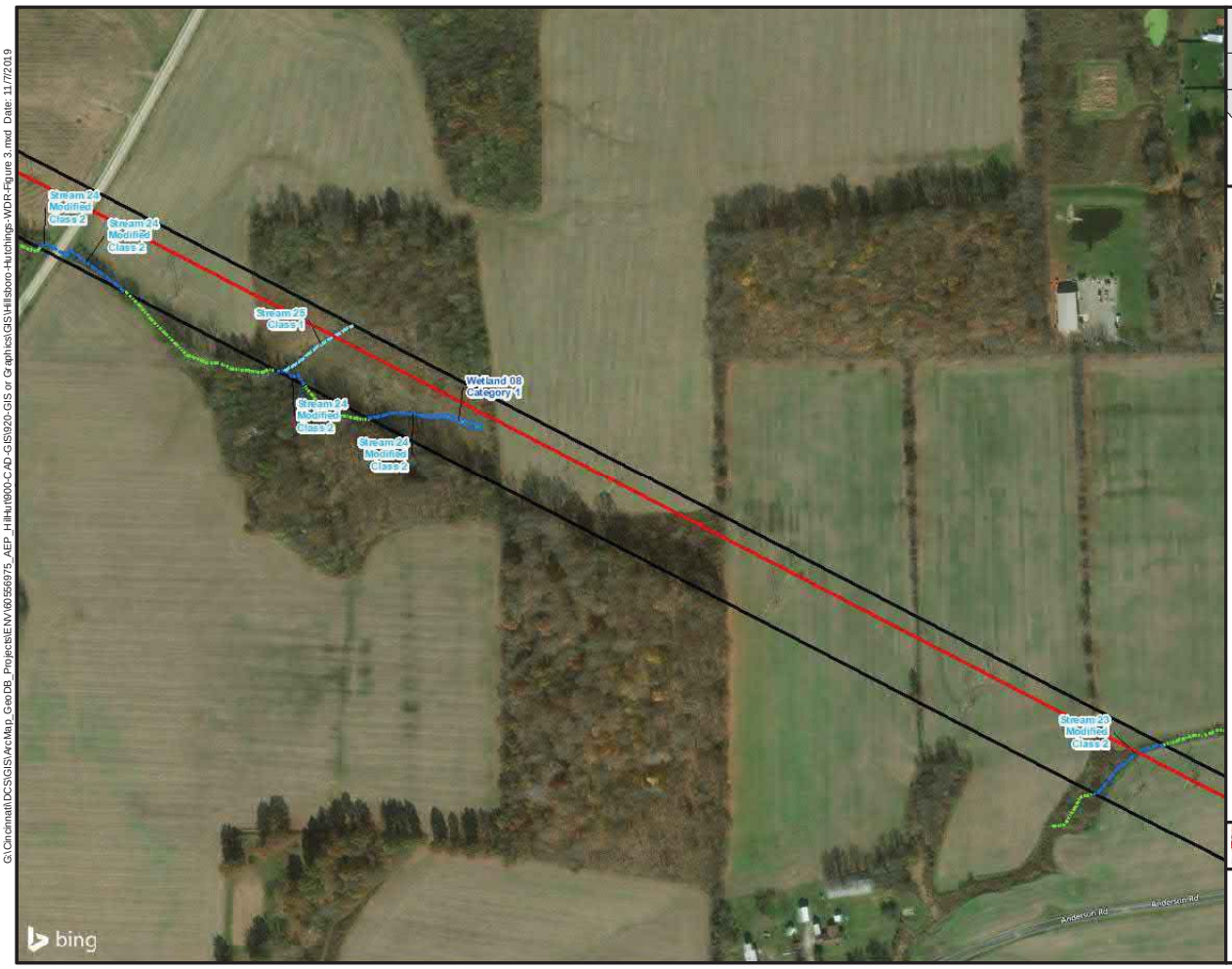
Hillsboro-Hutchings 138 kV Line

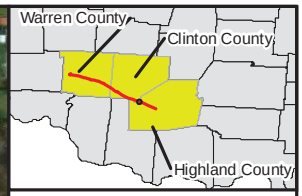
FIGURE 3P
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\N\60556975_AEP_HilHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

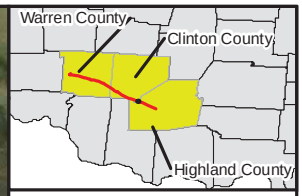
Hillsboro-Hutchings 138 kV Line

FIGURE 3Q
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E:\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

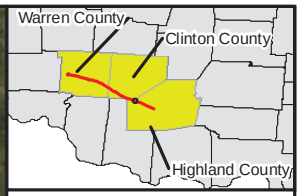
Hillsboro-Hutchings 138 kV Line

FIGURE 3R
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E:\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

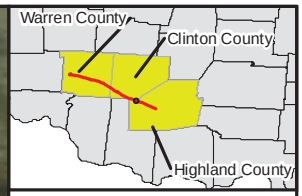
Hillsboro-Hutchings 138 kV Line

FIGURE 3S
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\V60556975_AEP_HillHut690-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

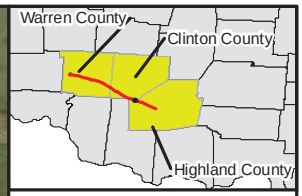
Hillsboro-Hutchings 138 kV Line

FIGURE 3T
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIV\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

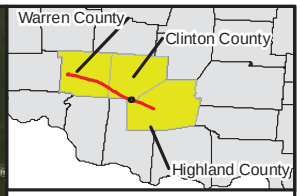
Hillsboro-Hutchings 138 kV Line

FIGURE 3U
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

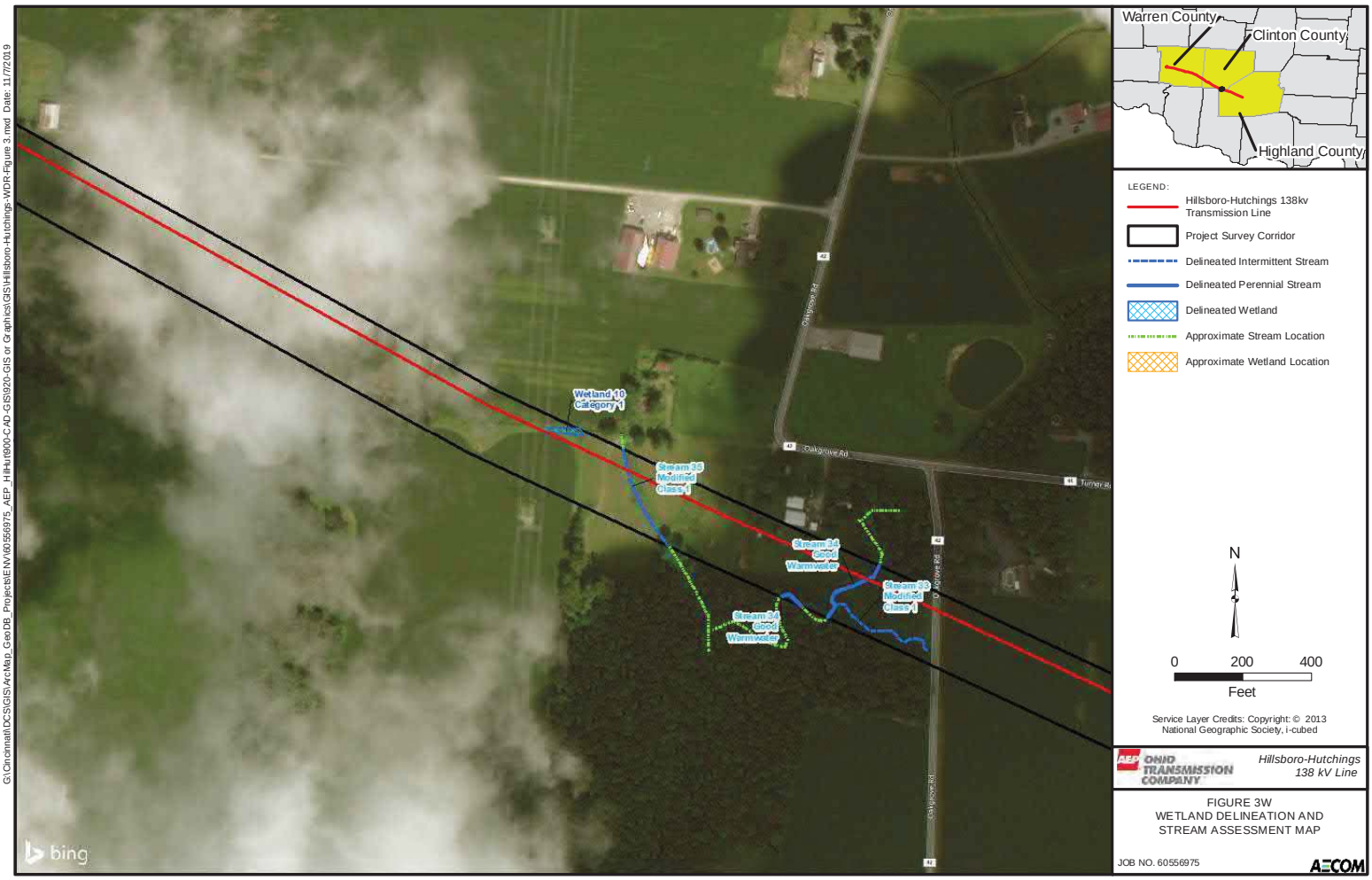
Hillsboro-Hutchings 138 kV Line

FIGURE 3V
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

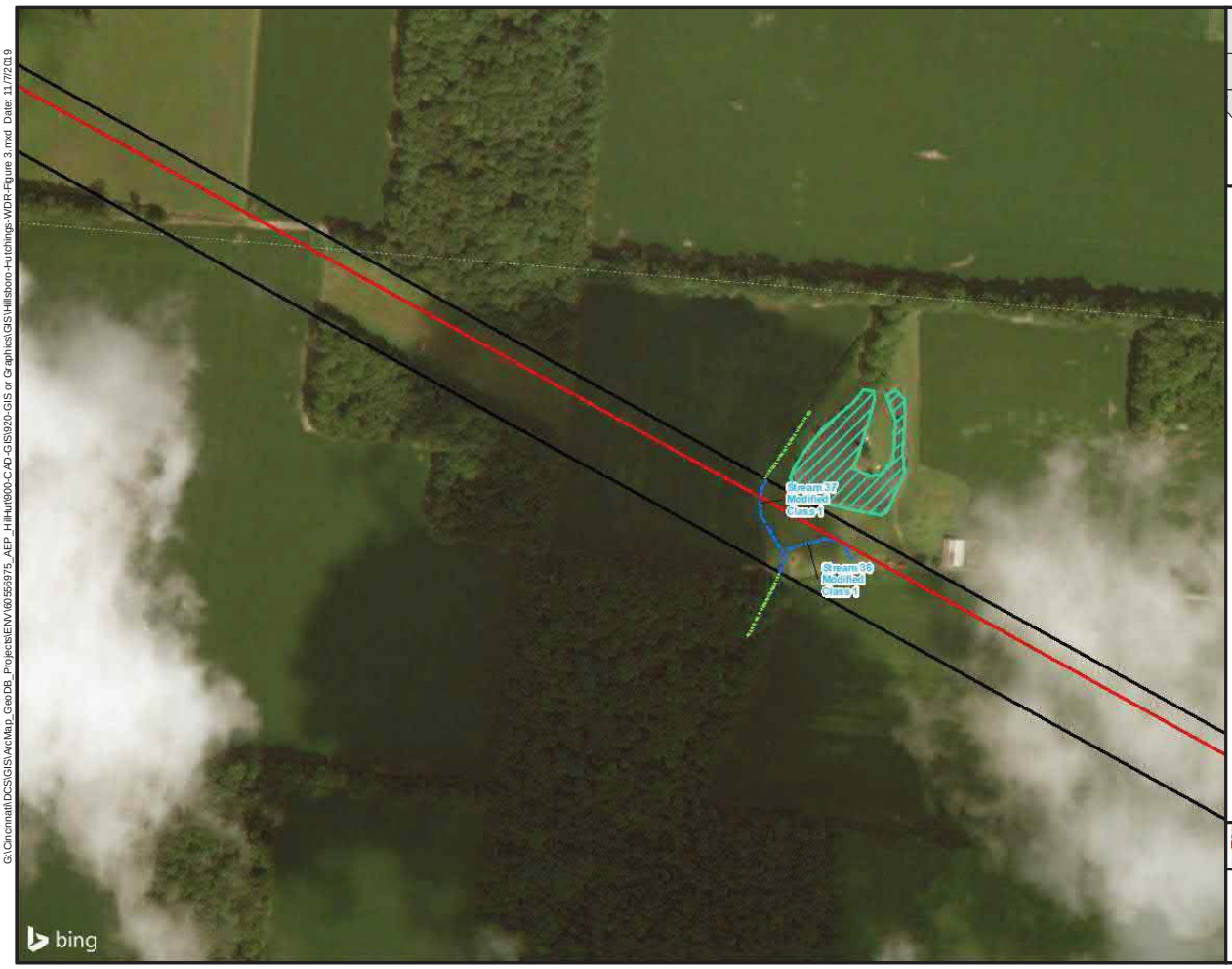
JOB NO. 60556975

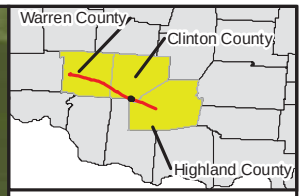
AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIV\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NY\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

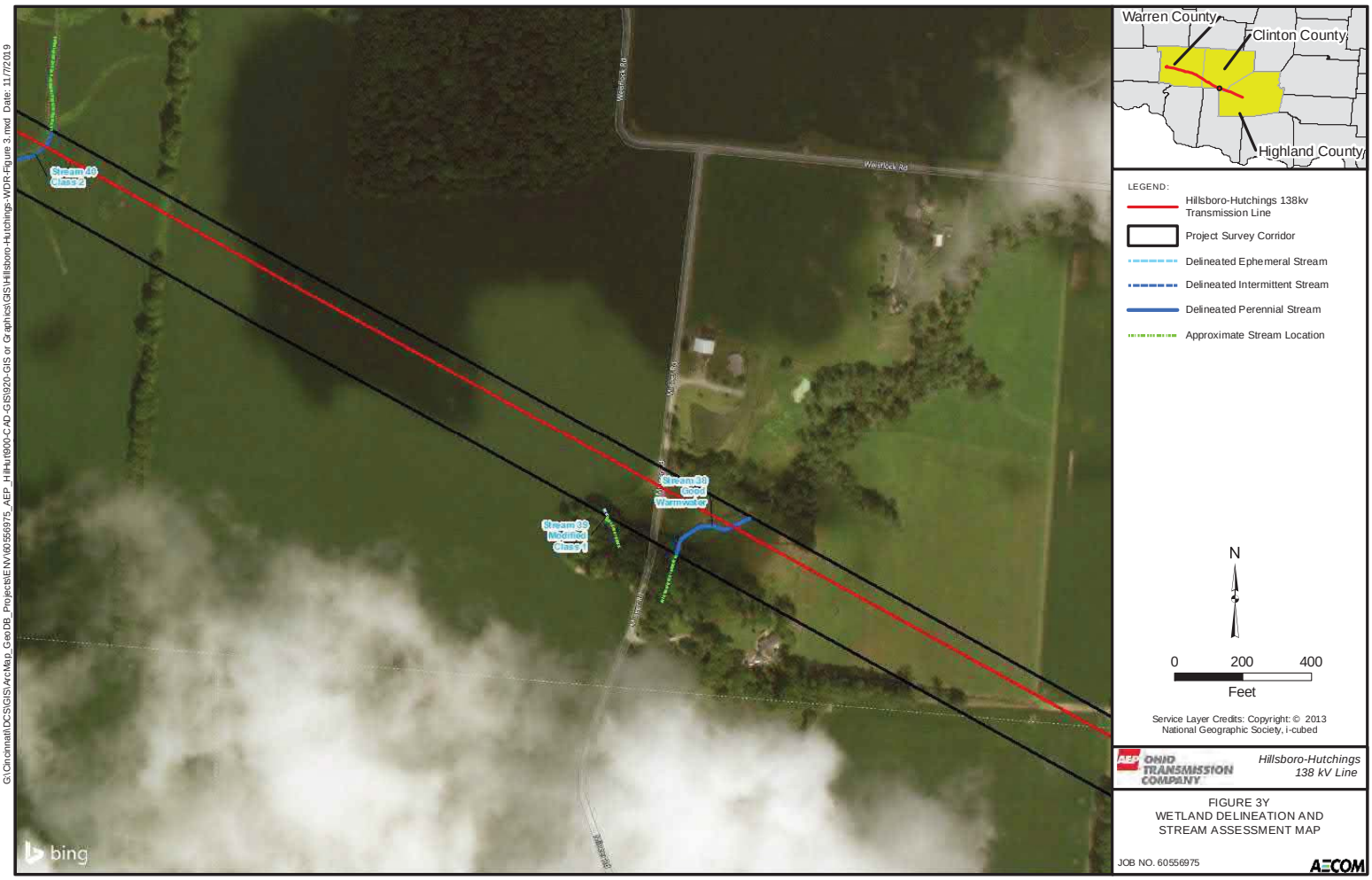
Hillsboro-Hutchings 138 kV Line

FIGURE 3X
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIN\60556975_AEP_HillHut\600-CAD-GIS\620-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3Y
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E:\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019

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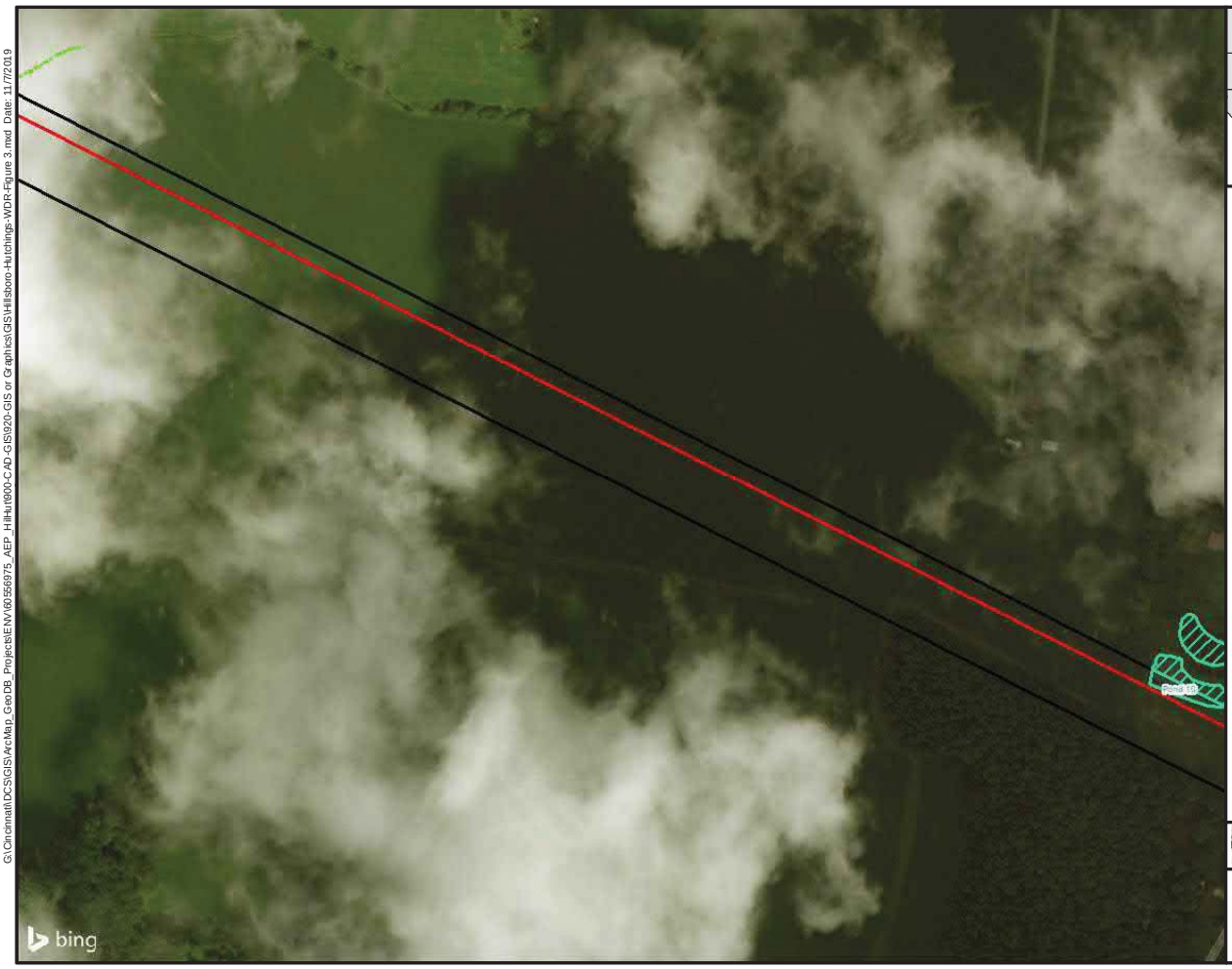
OHIO TRANSMISSION COMPANY

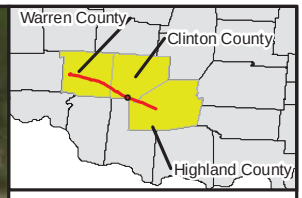
Hillsboro-Hutchings 138 kV Line

FIGURE 3Z
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

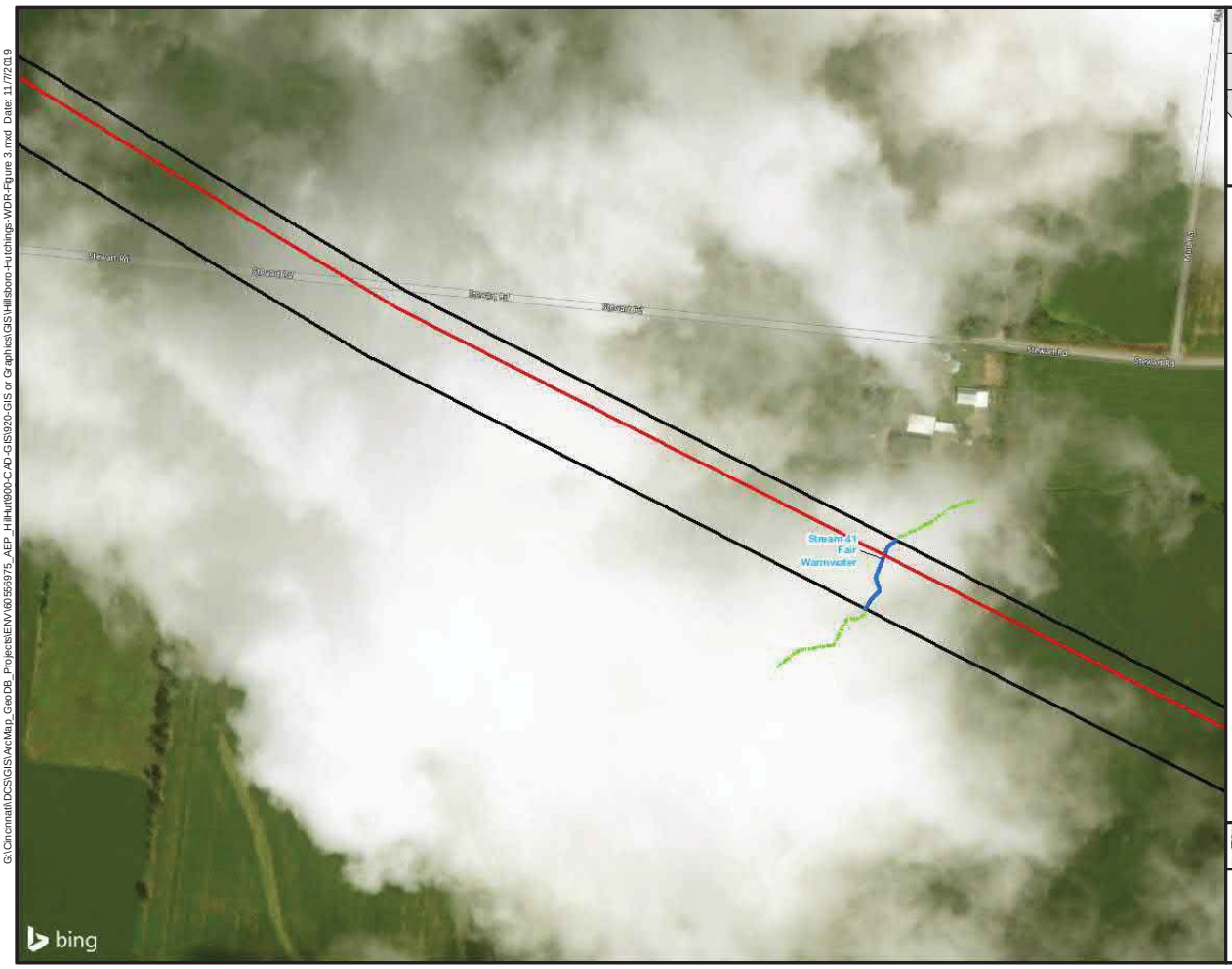
Hillsboro-Hutchings 138 kV Line

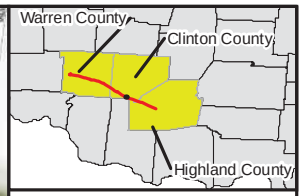
FIGURE 3AA
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NY\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3BB
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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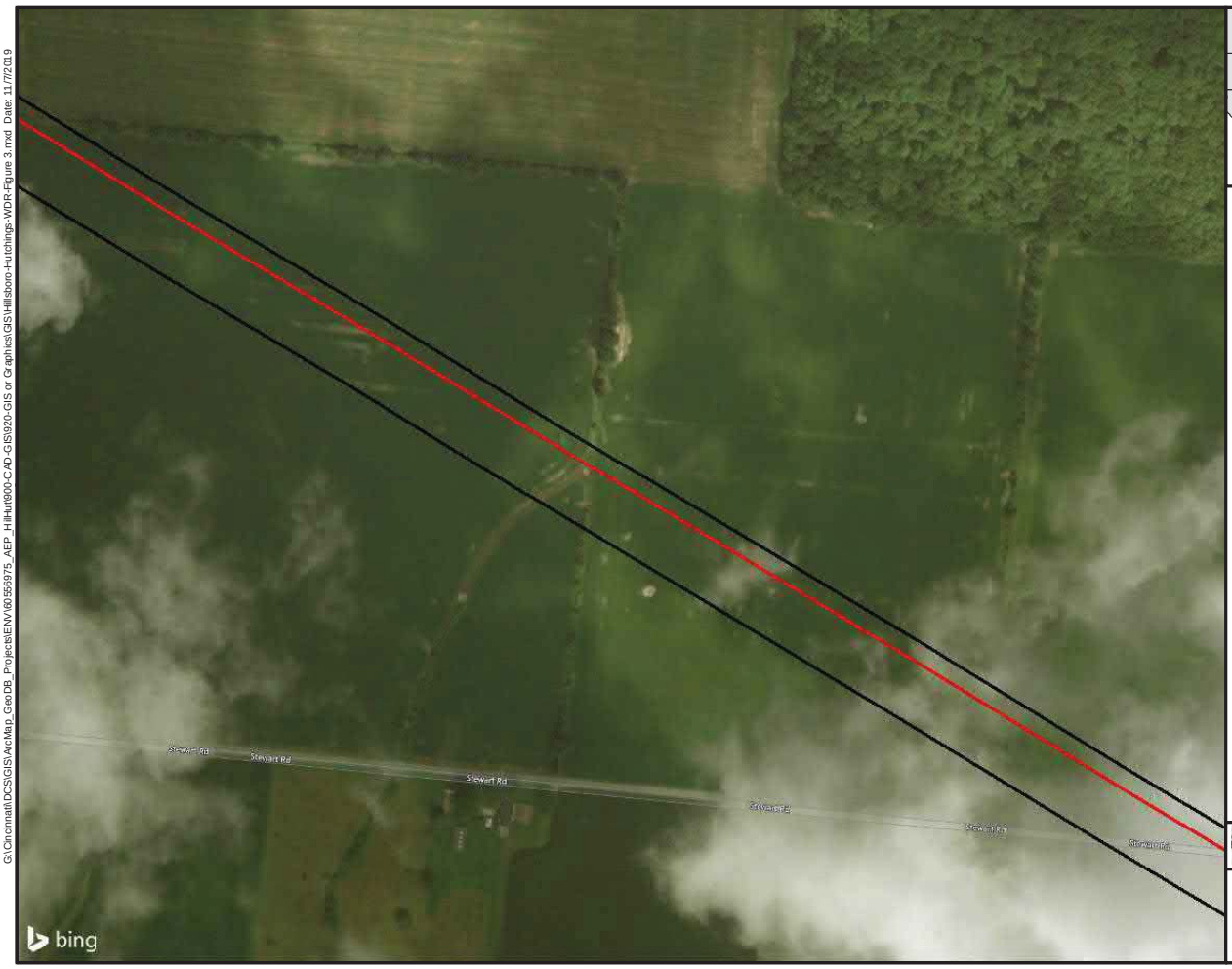
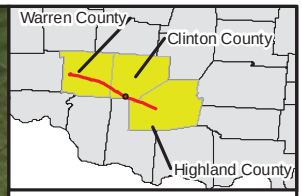




LEGEND:

Hillsboro-Hutchings 138kv Transmission Line

Project Survey Corridor

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

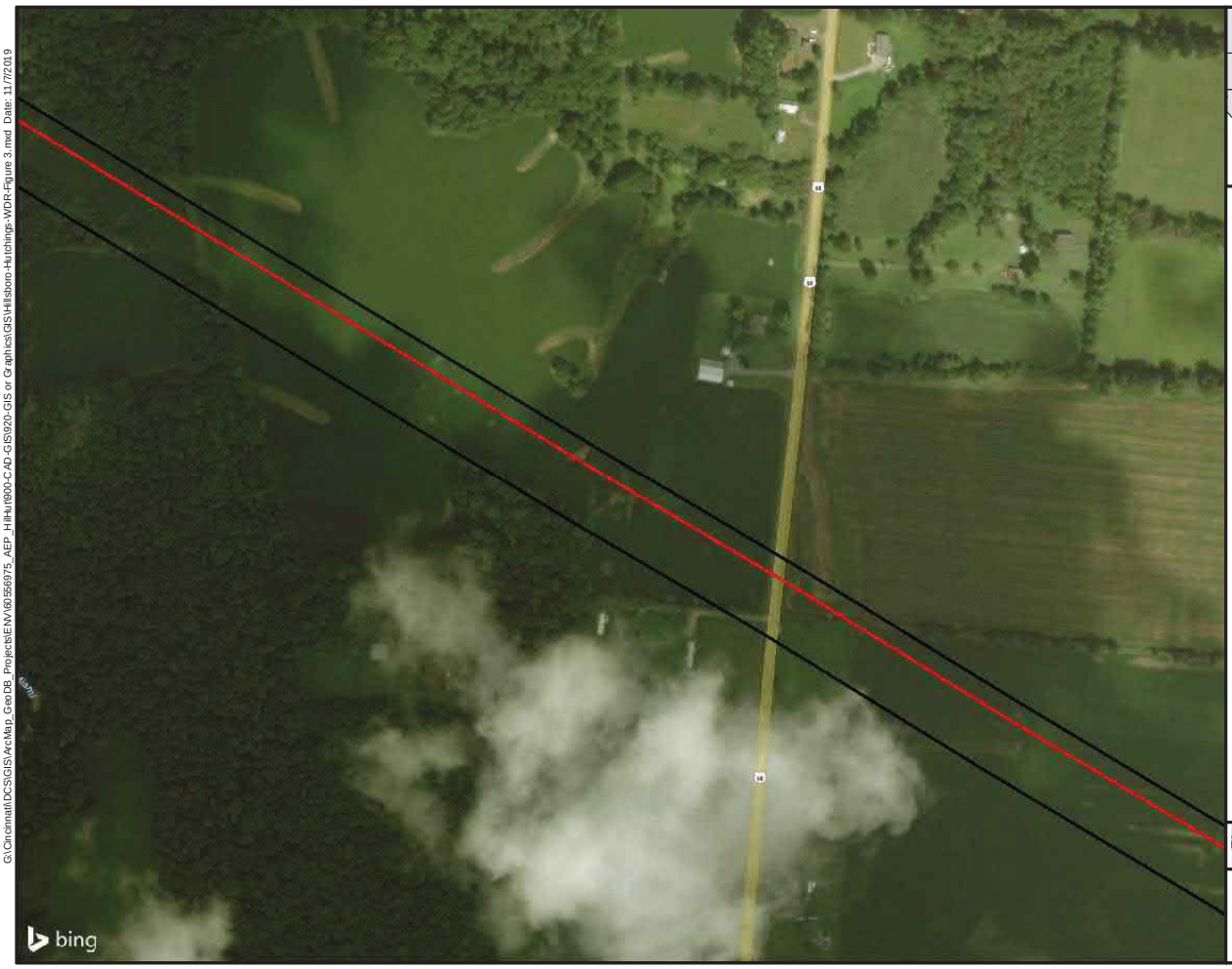
Hillsboro-Hutchings 138 kV Line

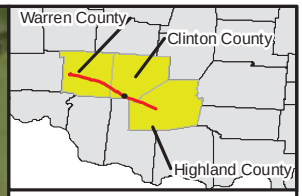
FIGURE 3CC
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NY\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

Hillsboro-Hutchings 138kv Transmission Line

Project Survey Corridor

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3DD
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\N\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019

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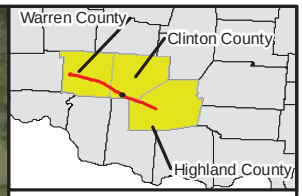


LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

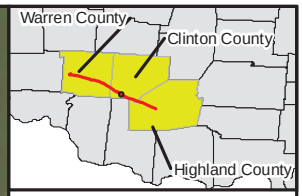
Hillsboro-Hutchings 138 kV Line

FIGURE 3FF
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Perennial Stream
- Delineated Pond
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

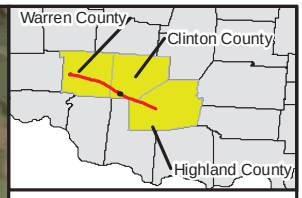
Hillsboro-Hutchings 138 kV Line

FIGURE 3GG
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NV\60556975_AEP_HilHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

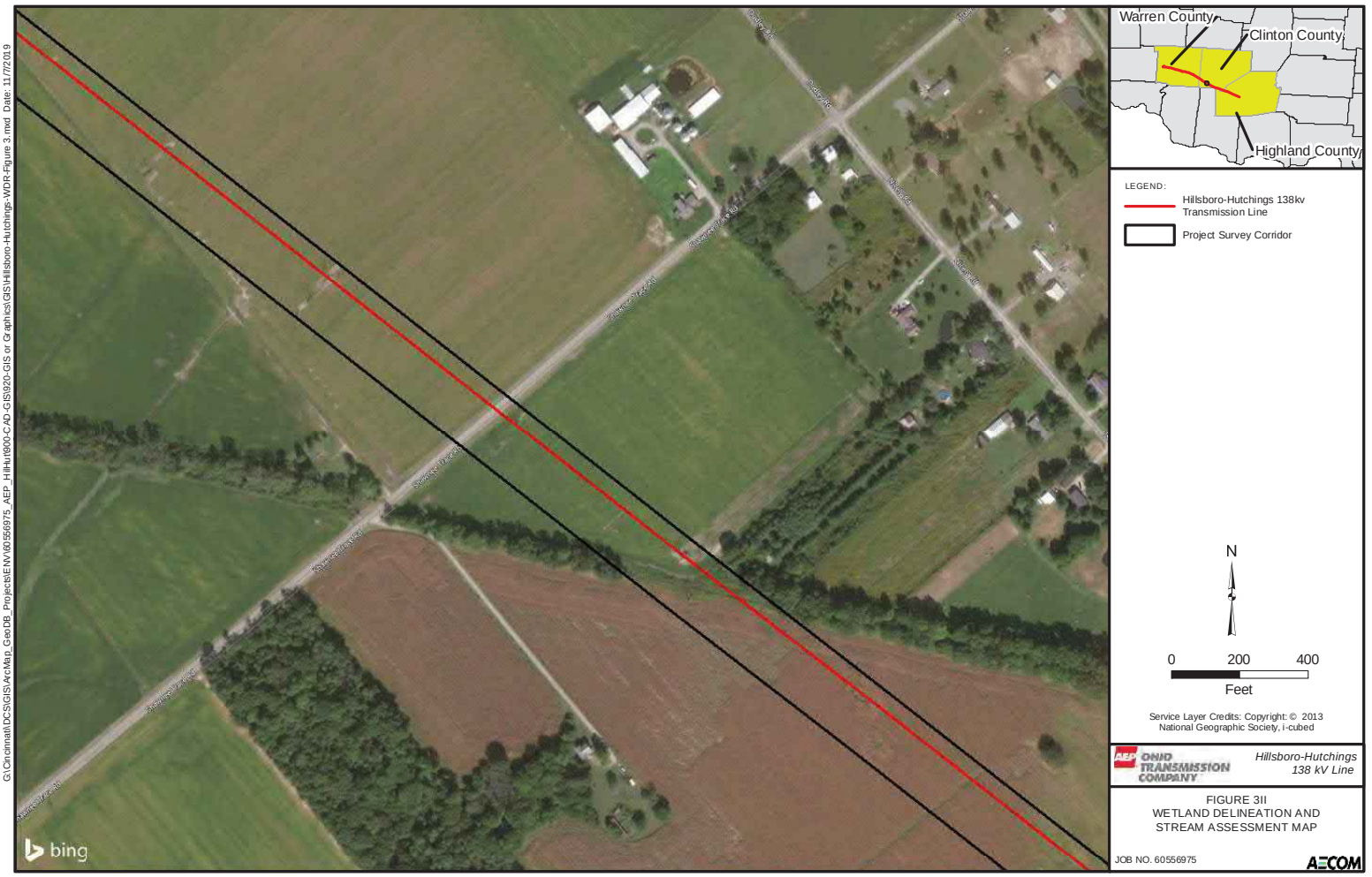
Hillsboro-Hutchings 138 kV Line

FIGURE 3HH
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



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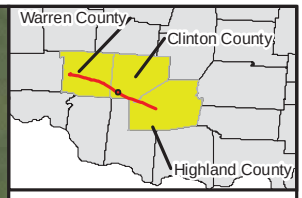
AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3II
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM



LEGEND:

Hillsboro-Hutchings 138kv Transmission Line

Project Survey Corridor

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

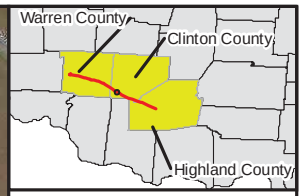
Hillsboro-Hutchings 138 kV Line

FIGURE 3JJ
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NV\60556975_AEP_HilHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

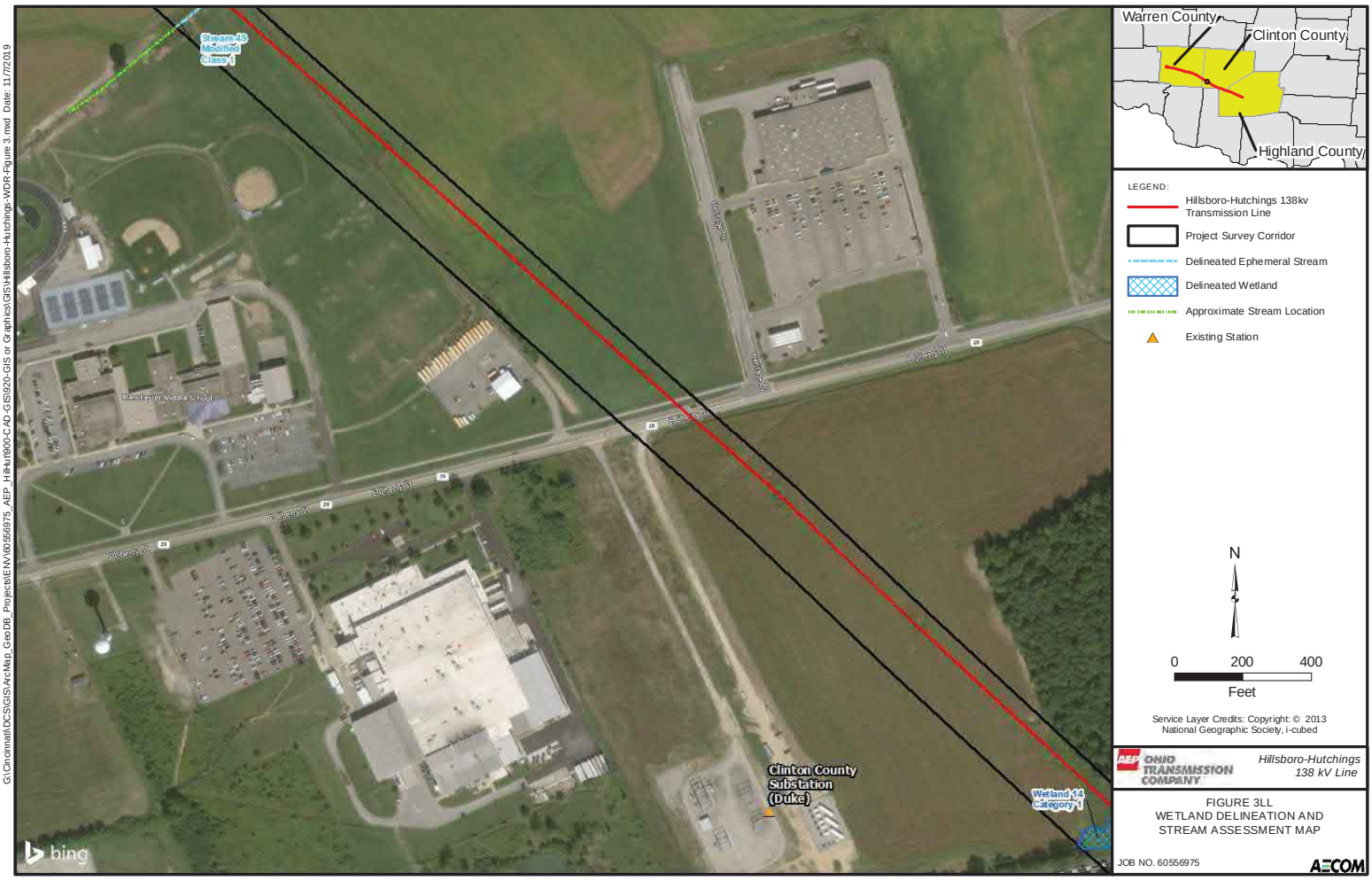
Hillsboro-Hutchings 138 kV Line

FIGURE 3KK
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIV\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



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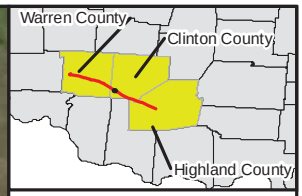


LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

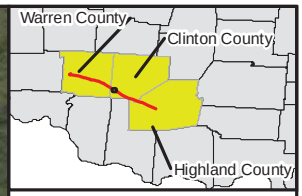
Hillsboro-Hutchings 138 kV Line

FIGURE 3MM
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EIN\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019



LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3NN
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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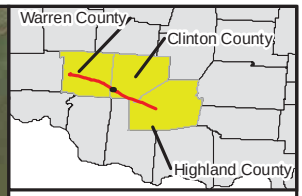


LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

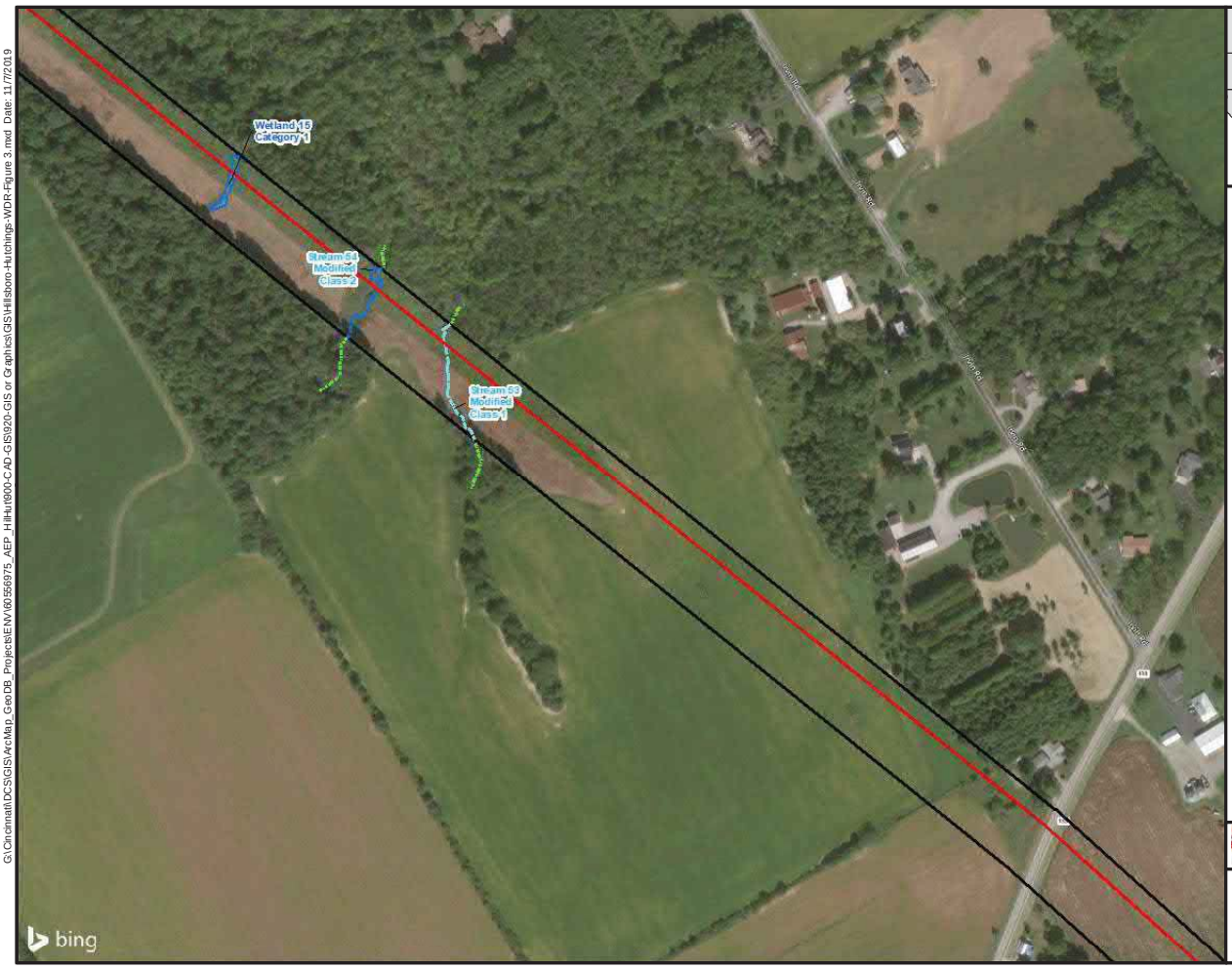
Hillsboro-Hutchings 138 kV Line

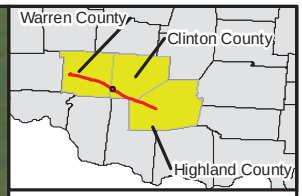
FIGURE 3OO
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E\NV\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3PP
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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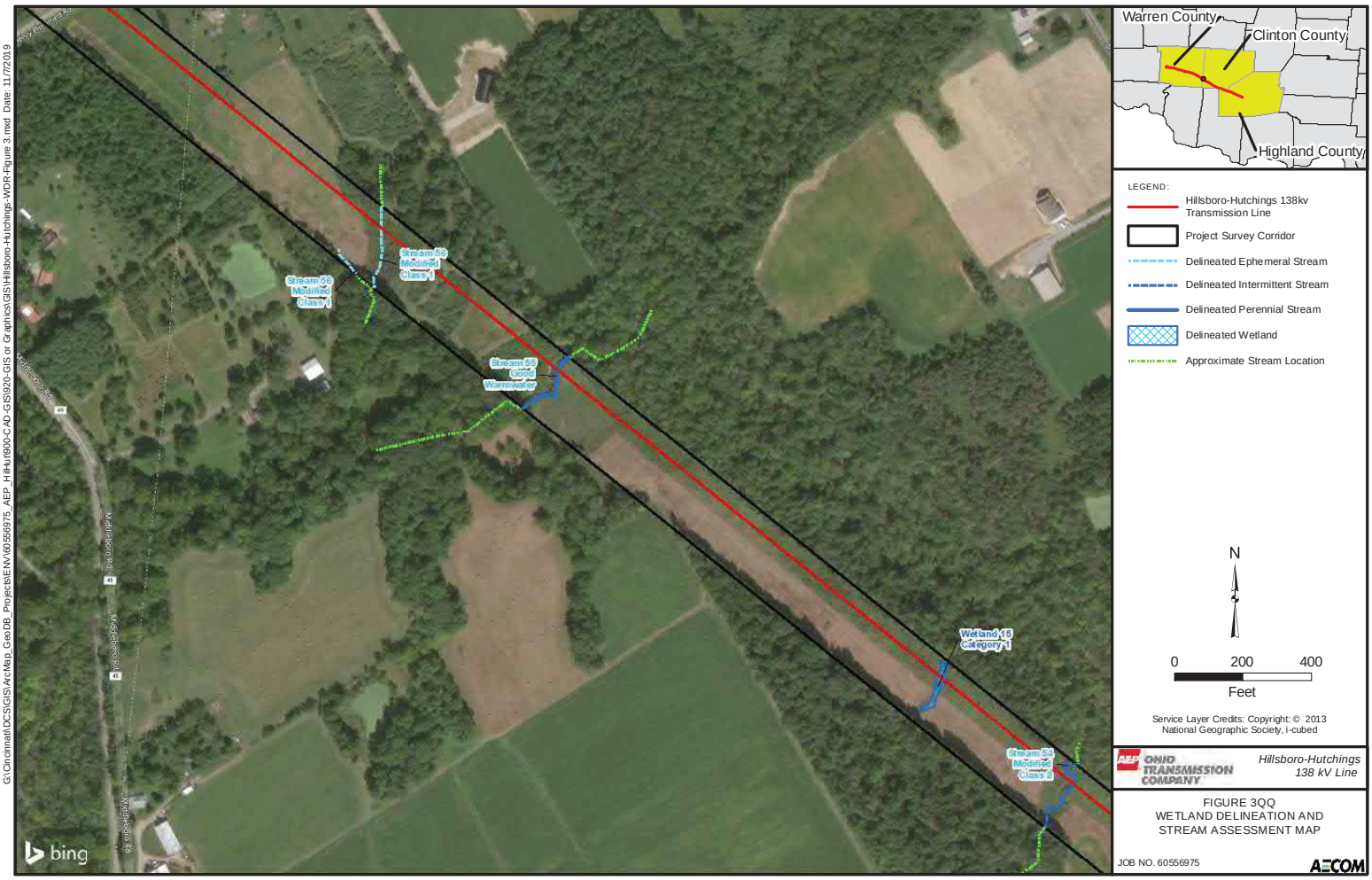

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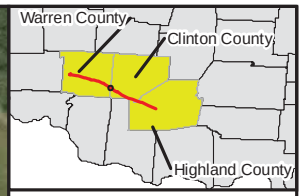

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3RR
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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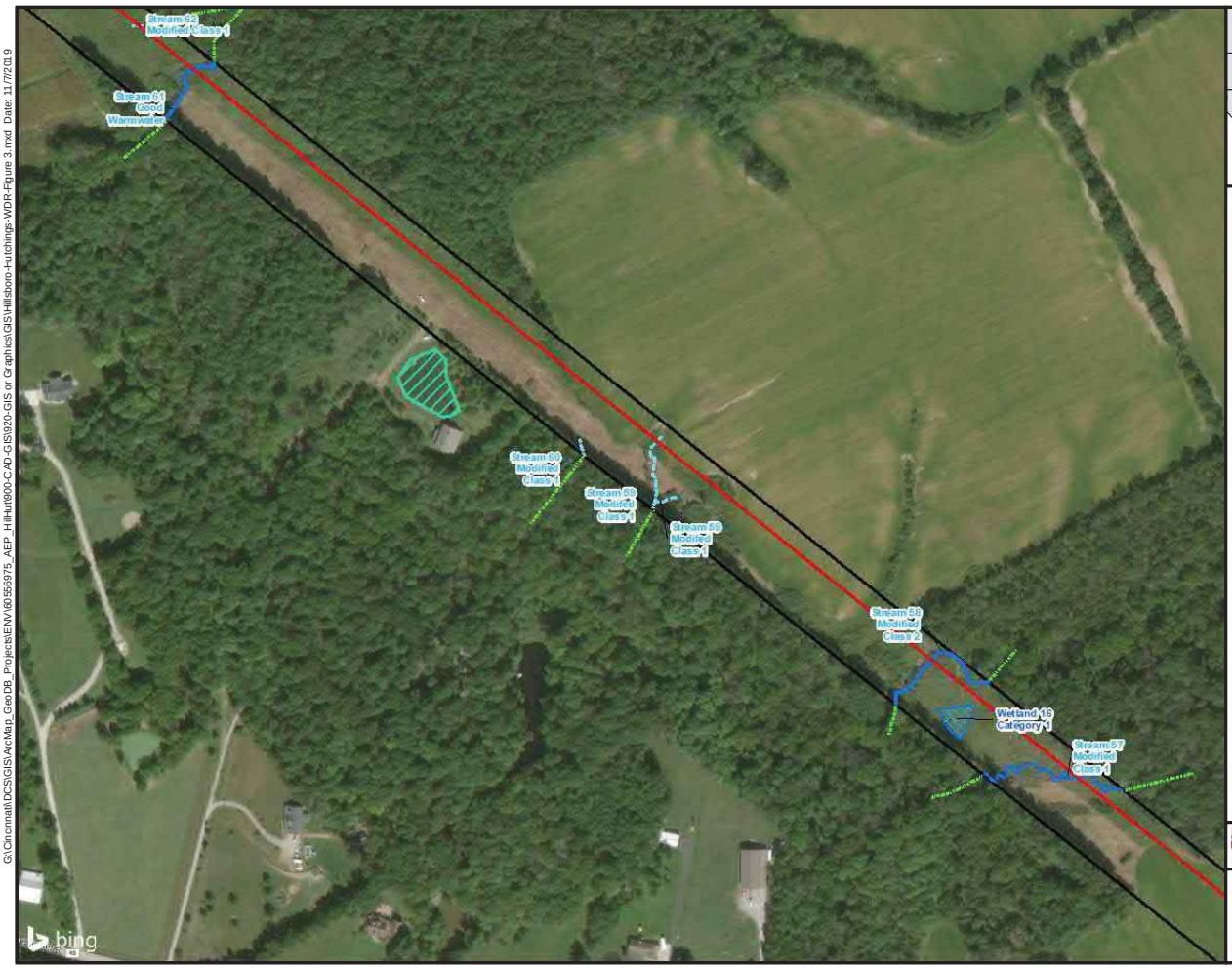

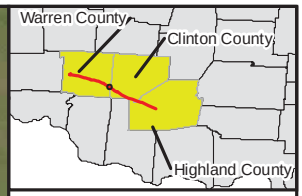

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3SS
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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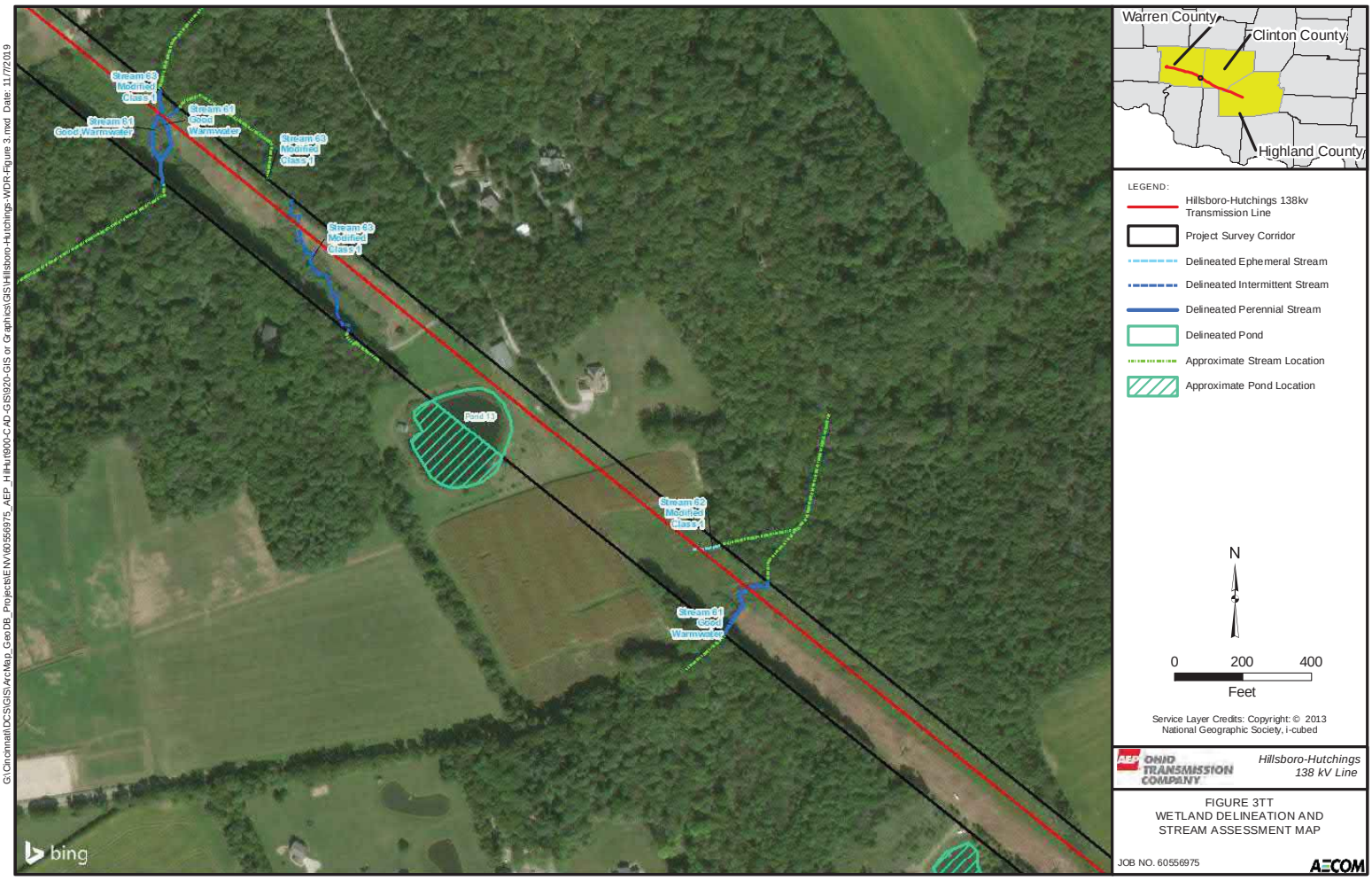

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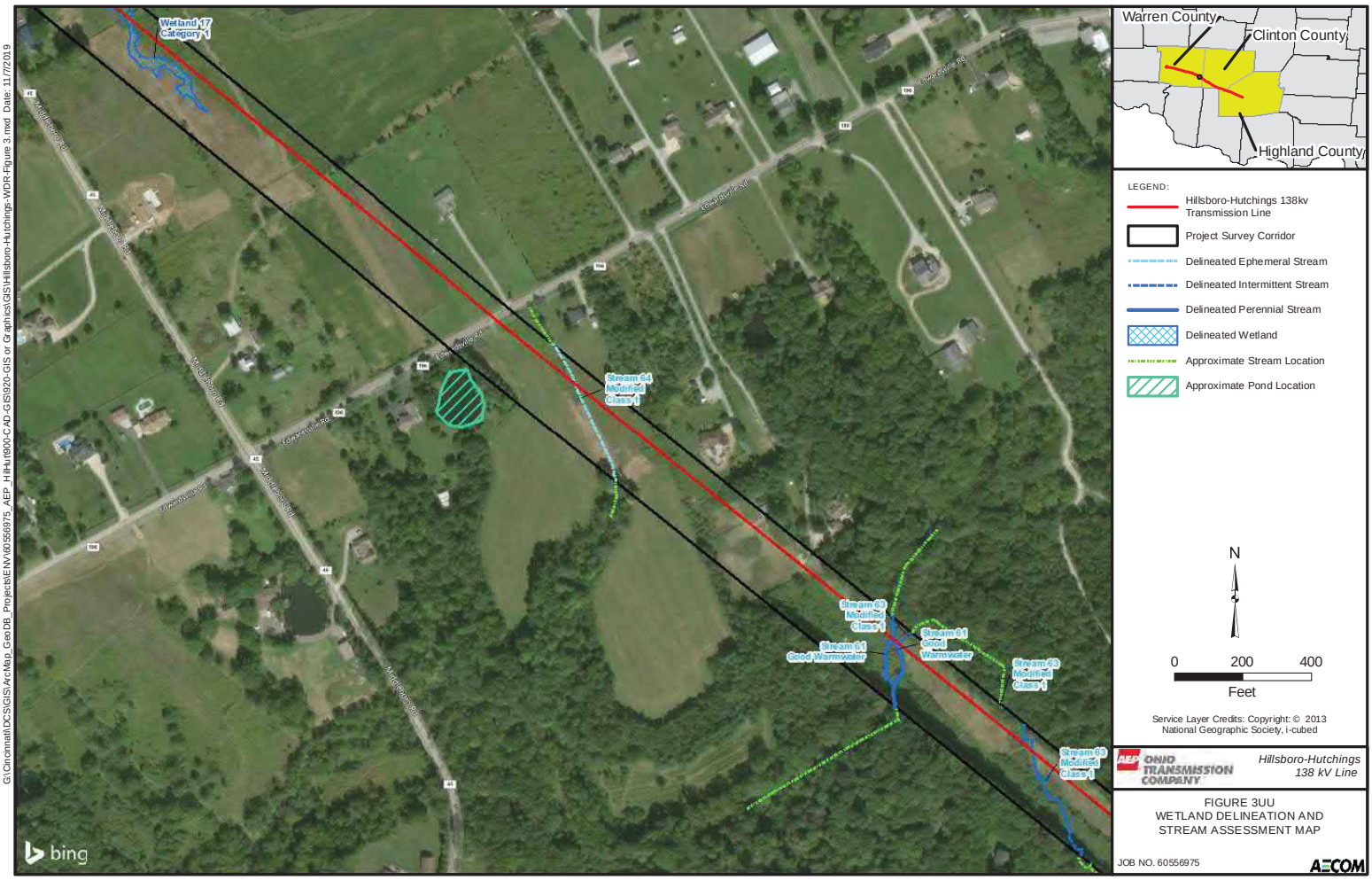

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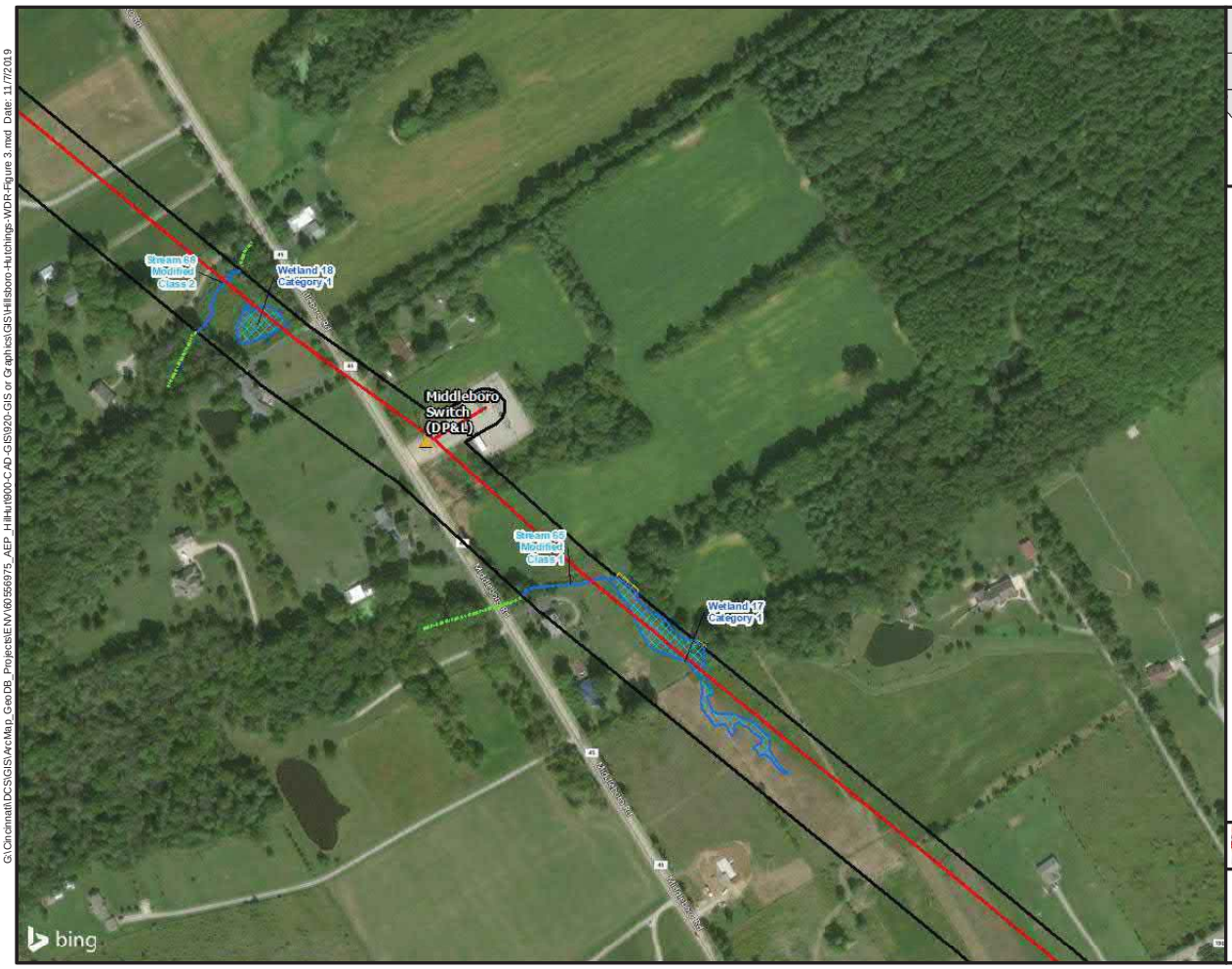
AEP OHIO TRANSMISSION COMPANY

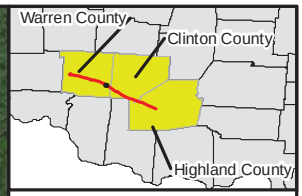
Hillsboro-Hutchings 138 kV Line

FIGURE 3UU
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location
- Existing Station

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

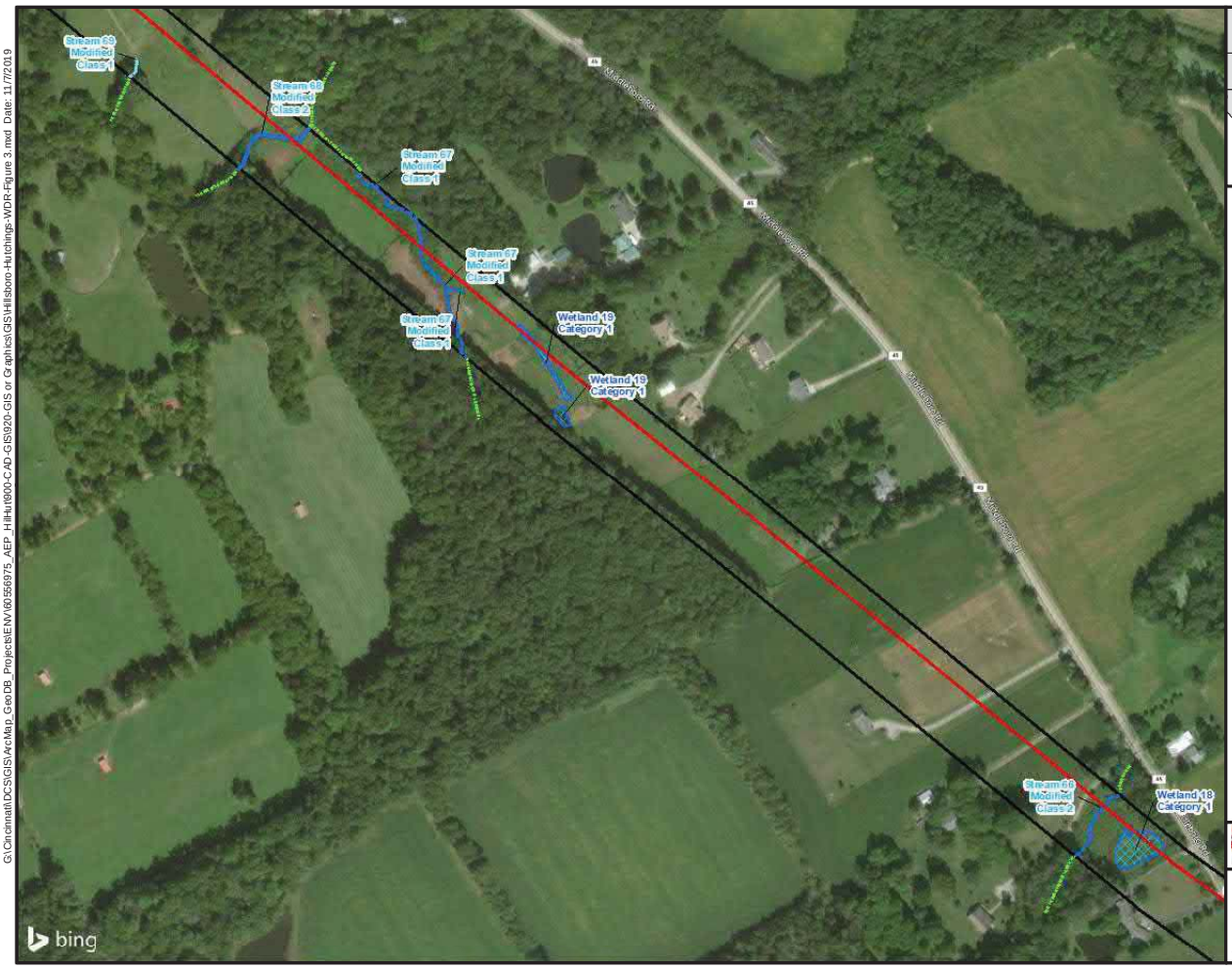
Hillsboro-Hutchings 138 kV Line

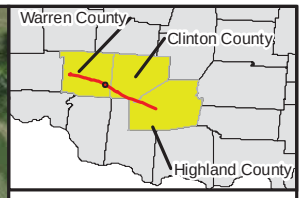
FIGURE 3VV
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E:\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 3.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3WW
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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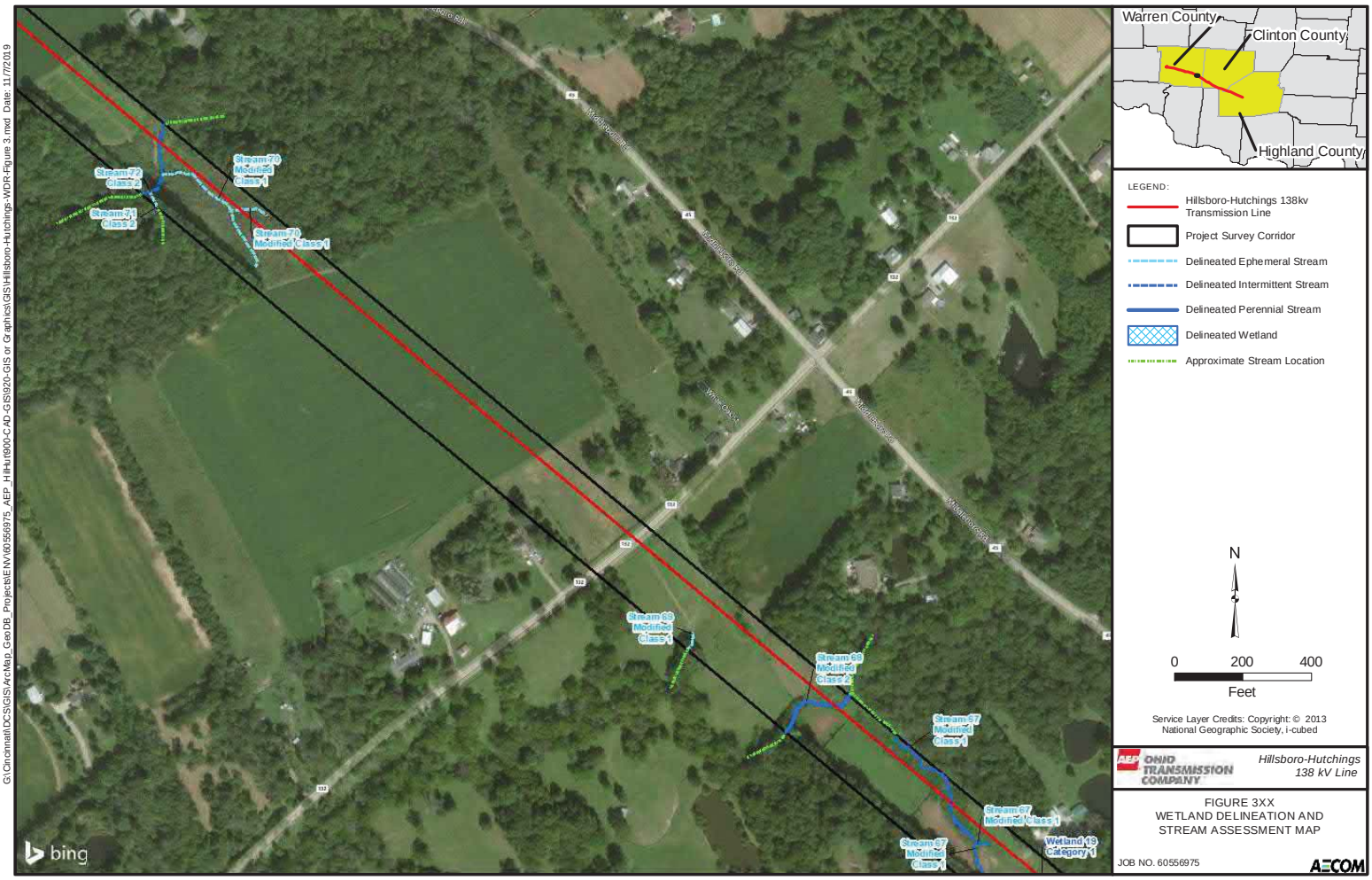

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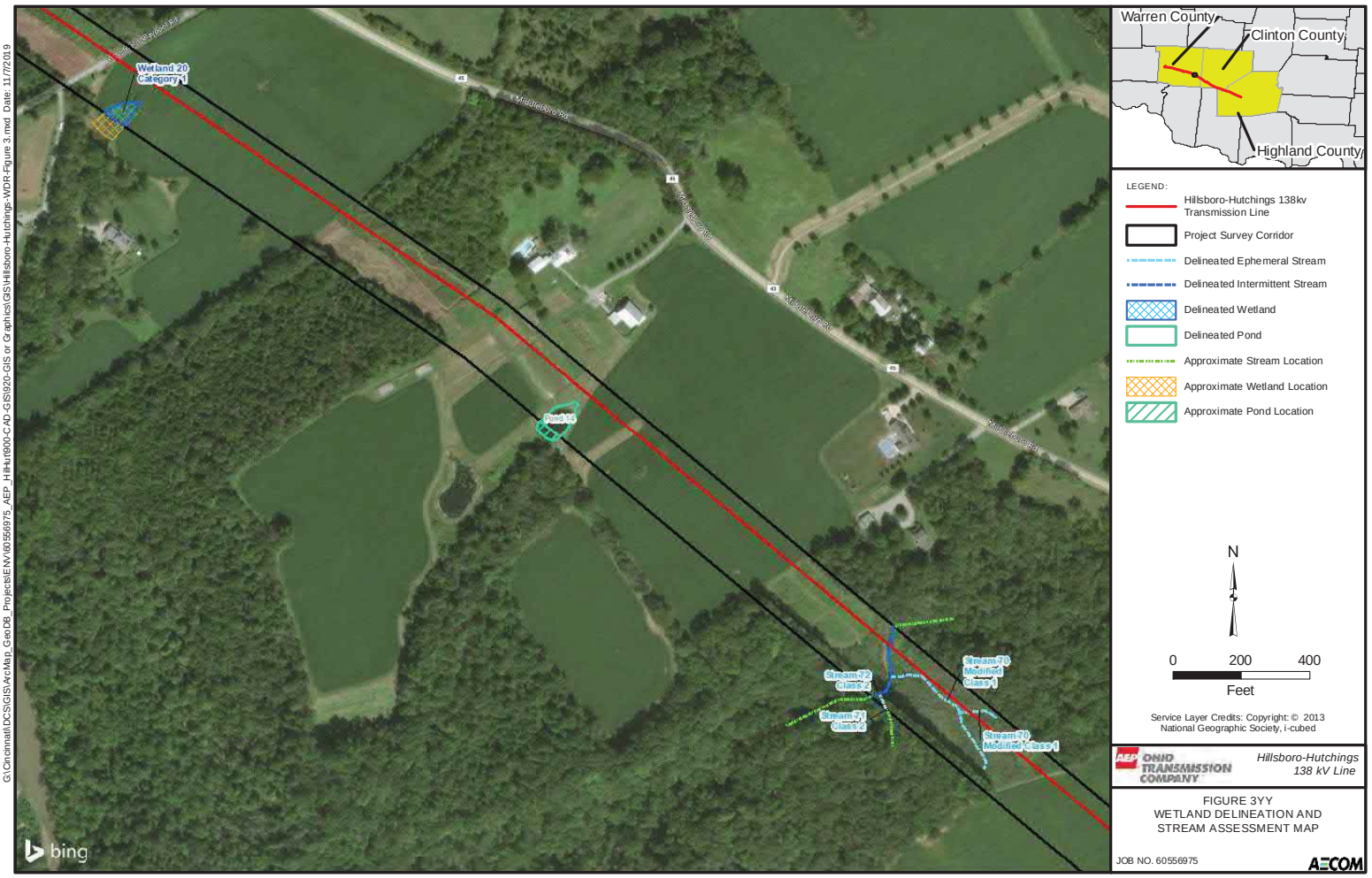

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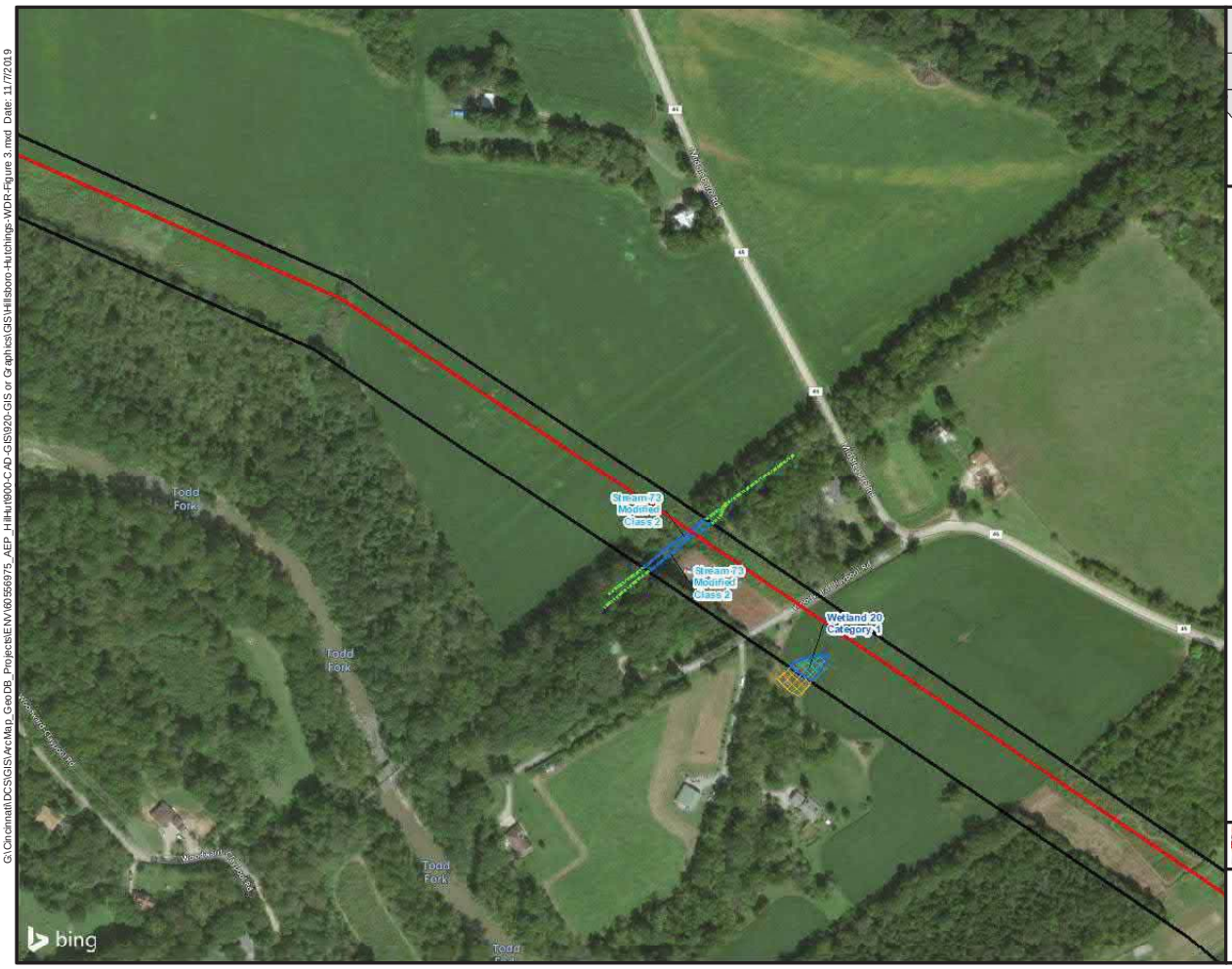

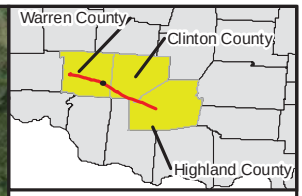

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3ZZ
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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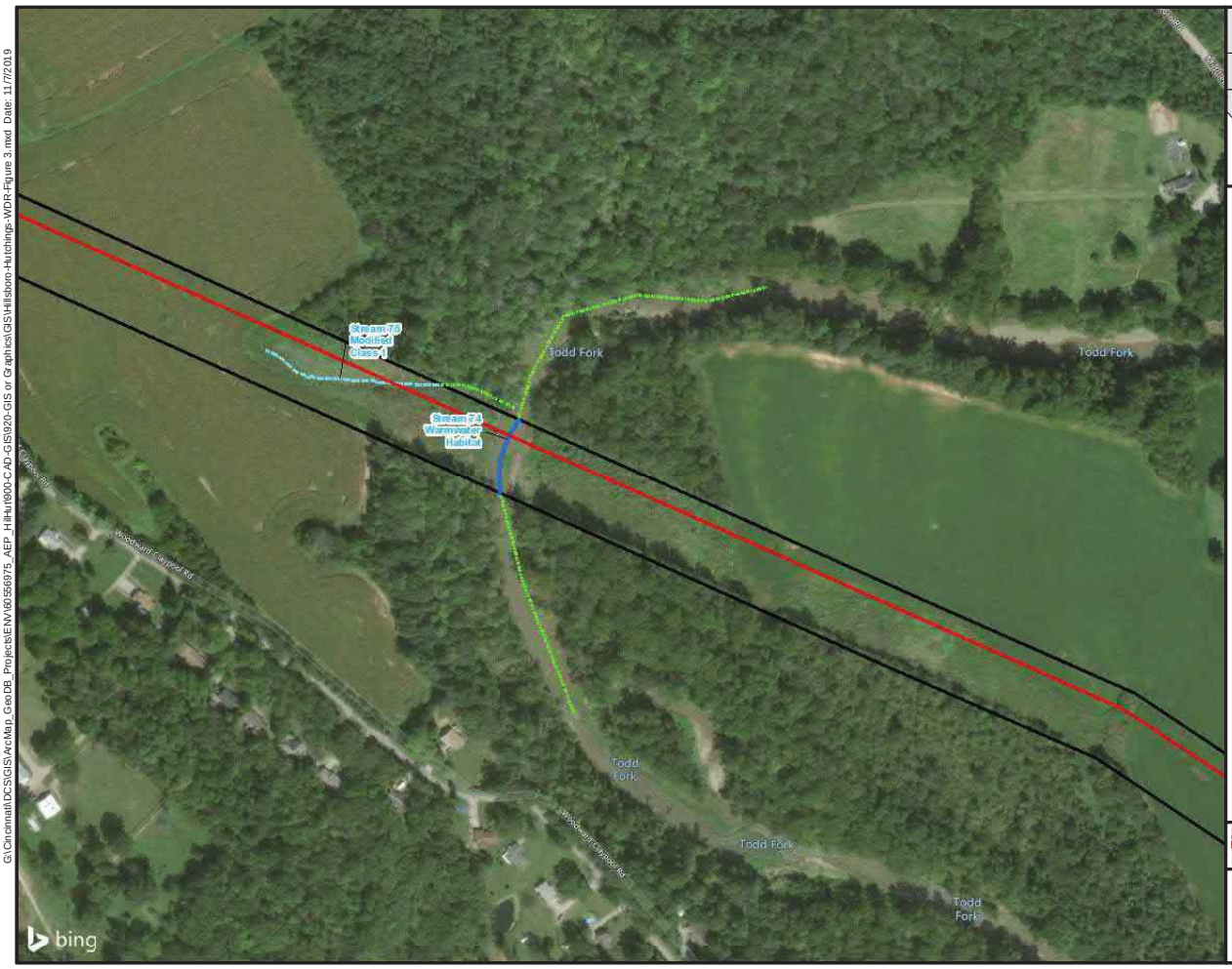

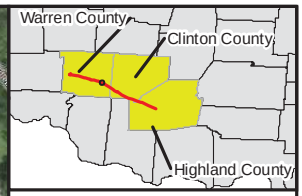

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3AAA
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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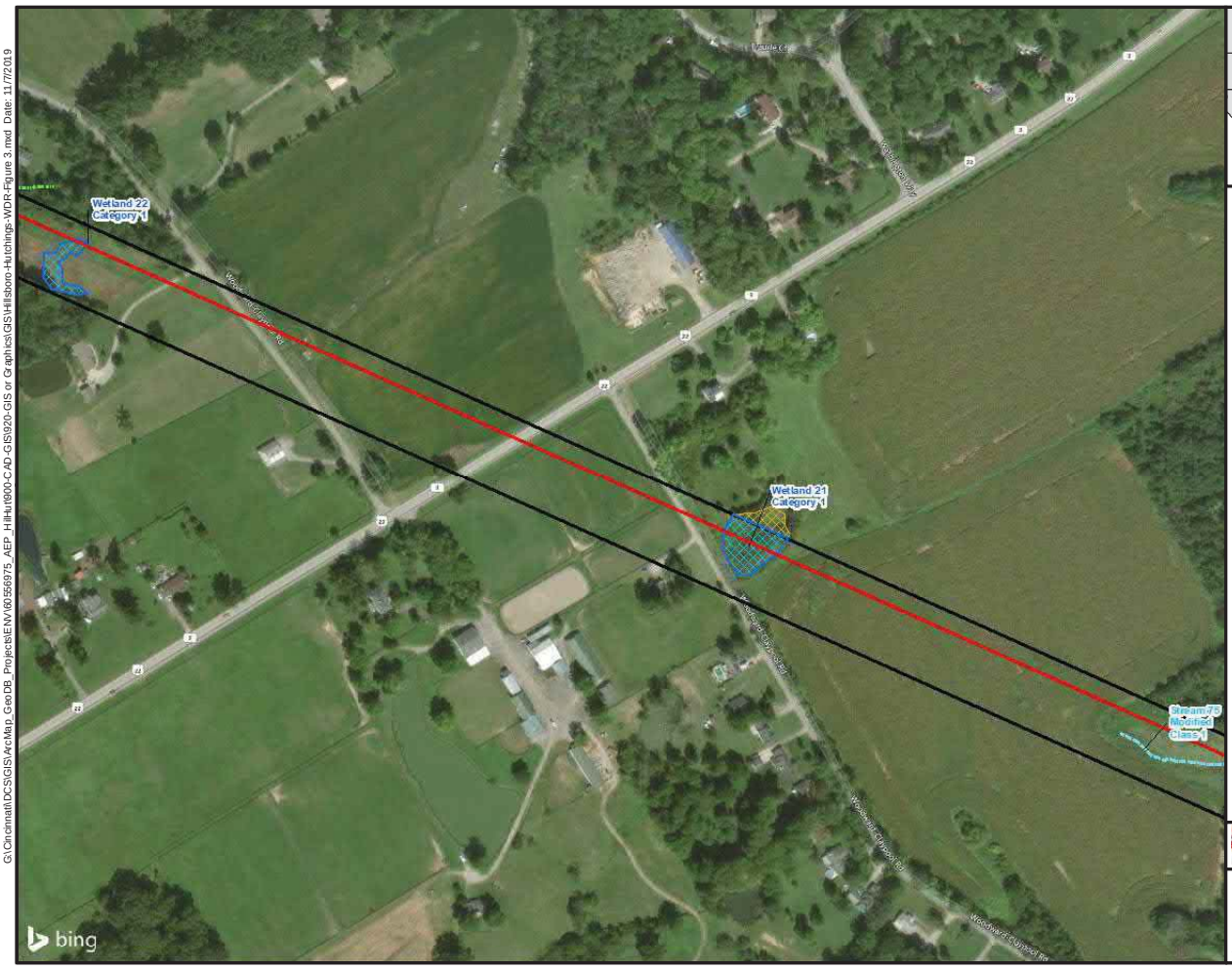

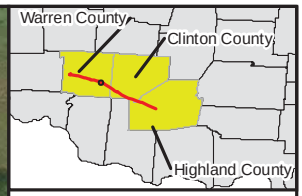

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3BBB
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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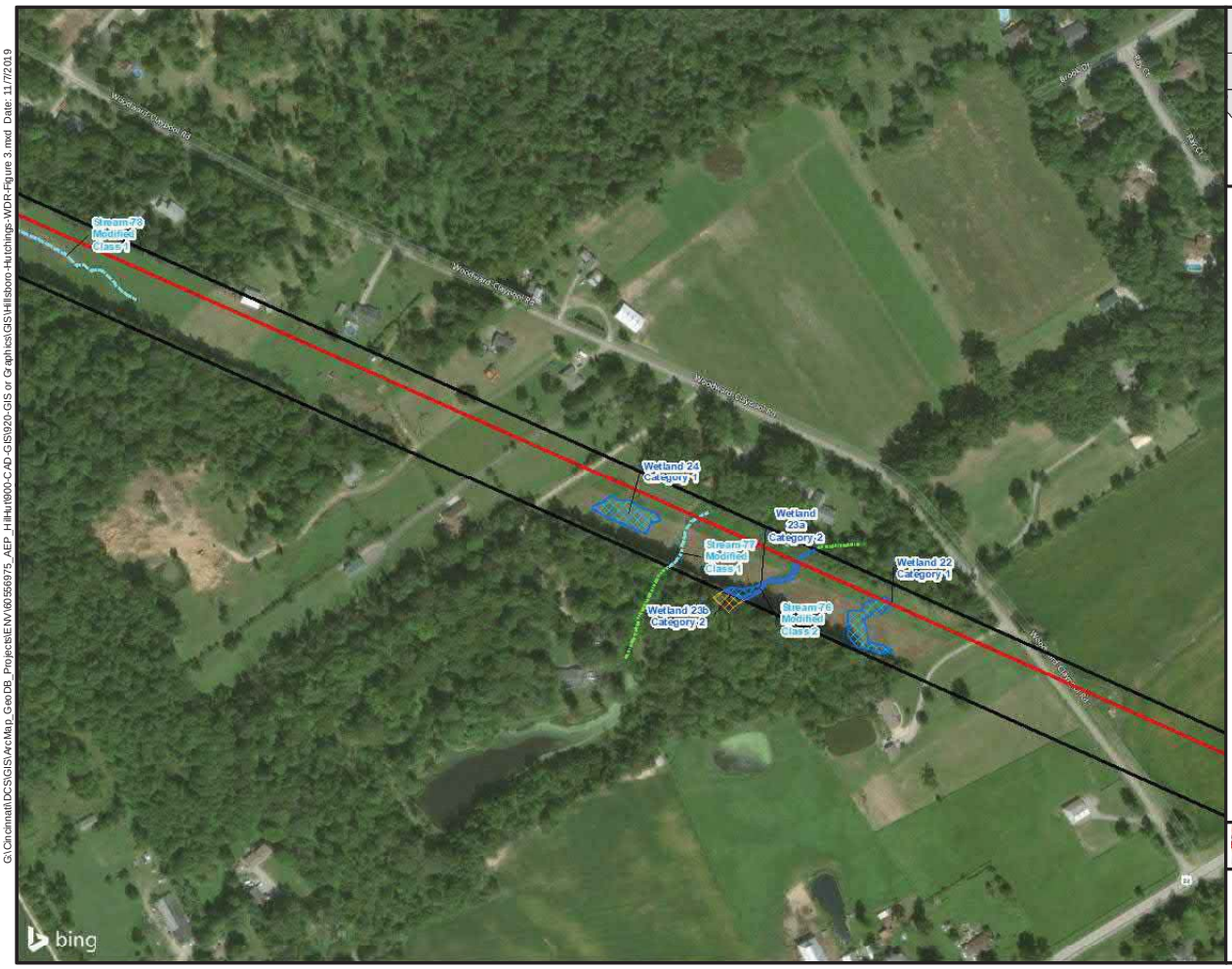

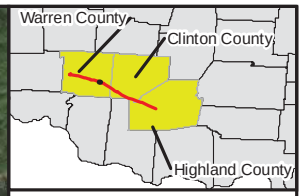

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3CCC
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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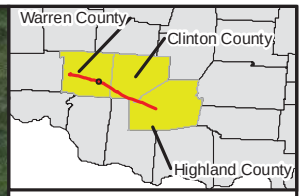

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3DDD
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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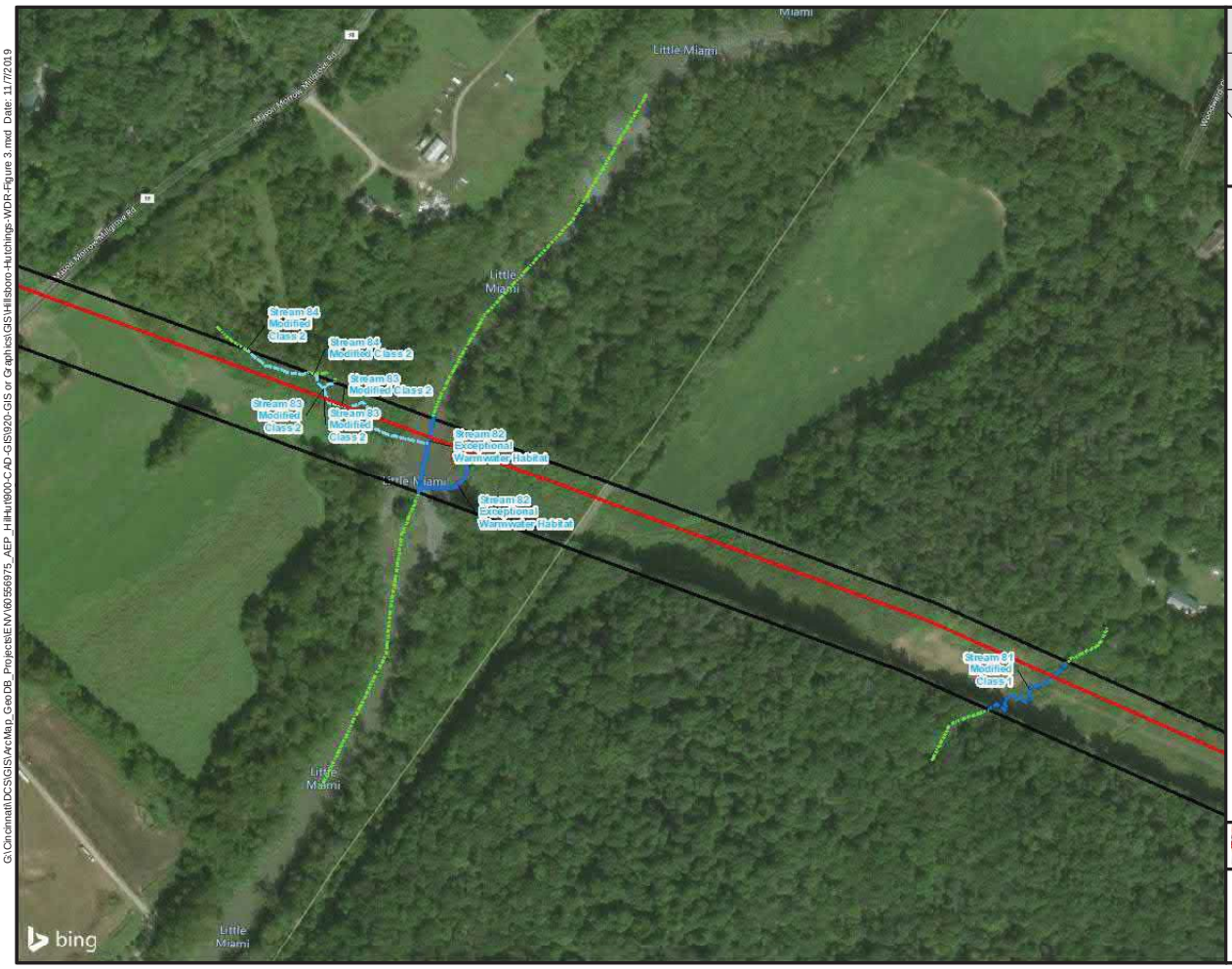

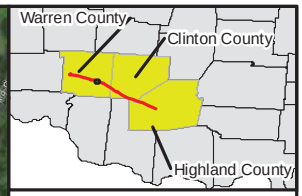

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3EEE
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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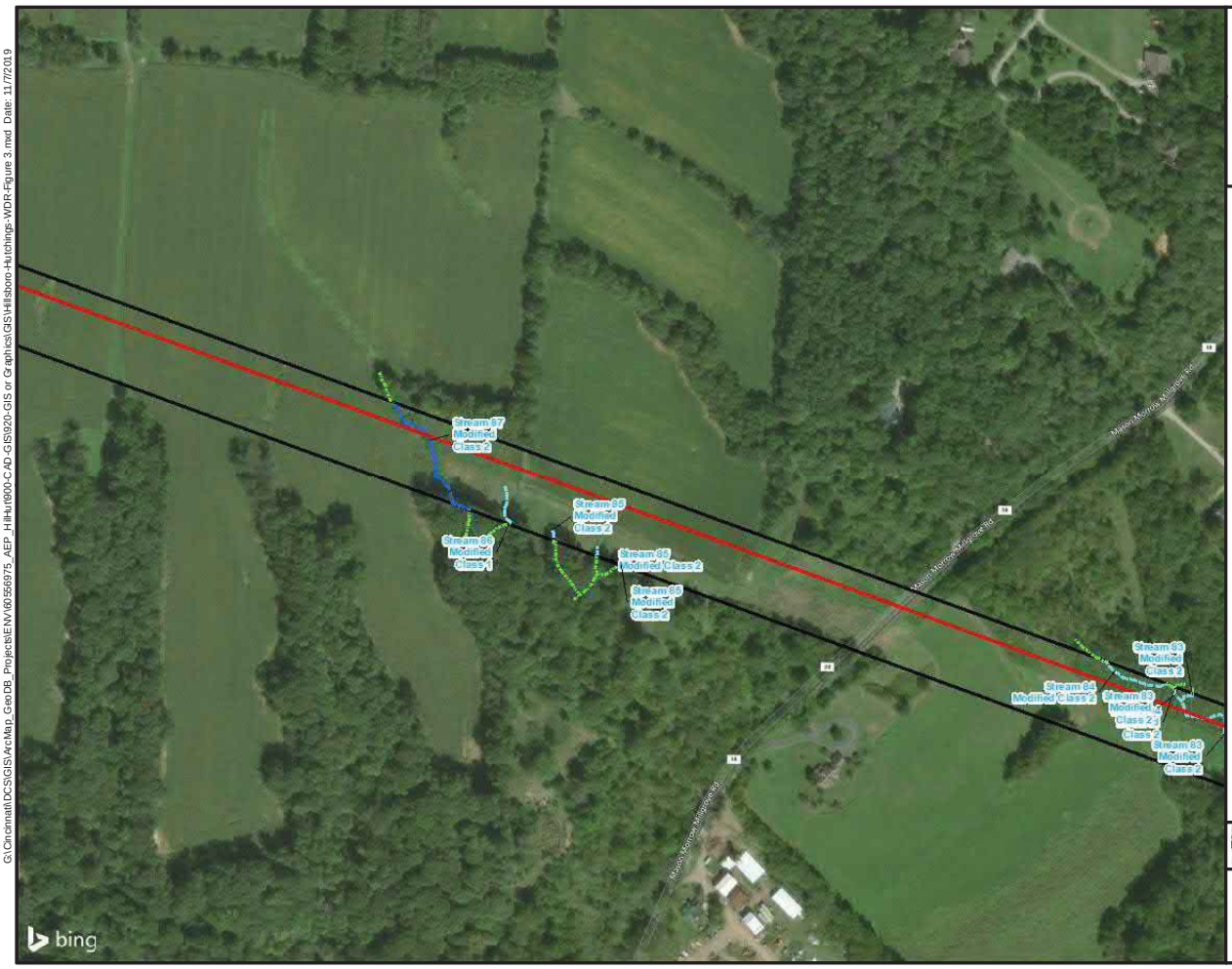

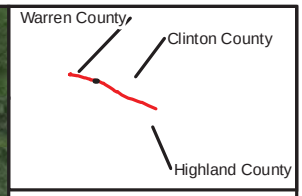

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3FFF
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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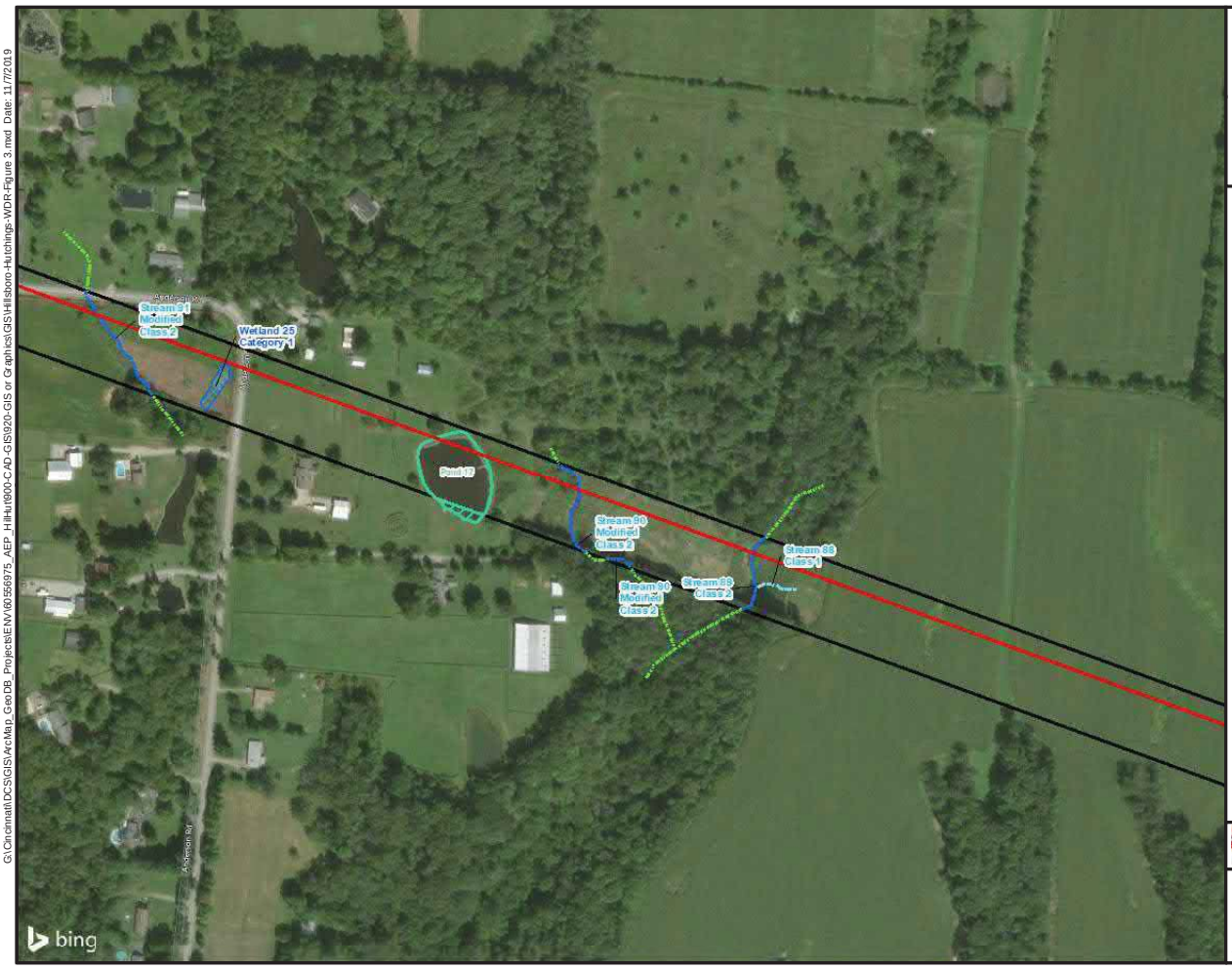

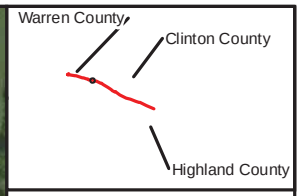

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3GGG
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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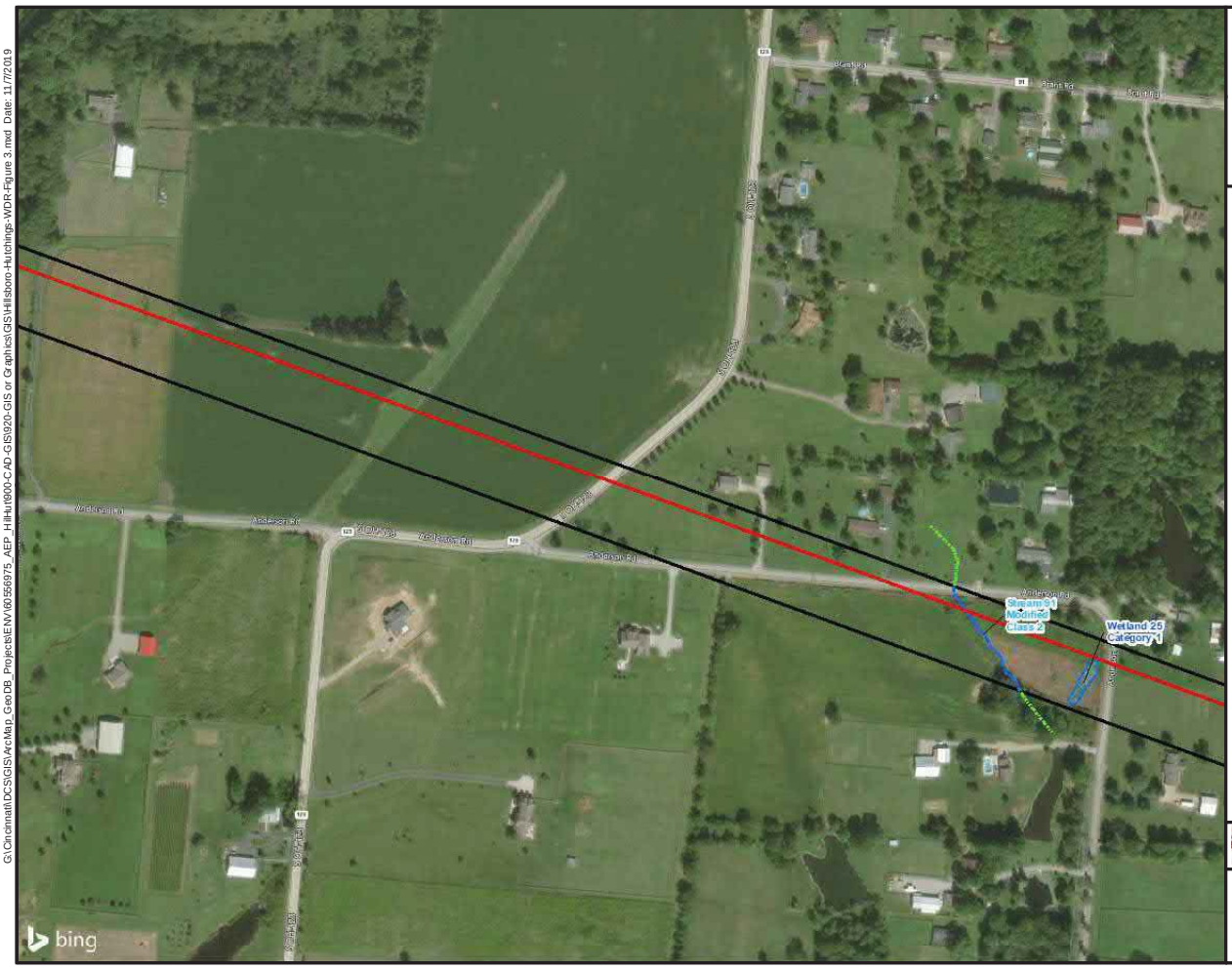

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3HHH
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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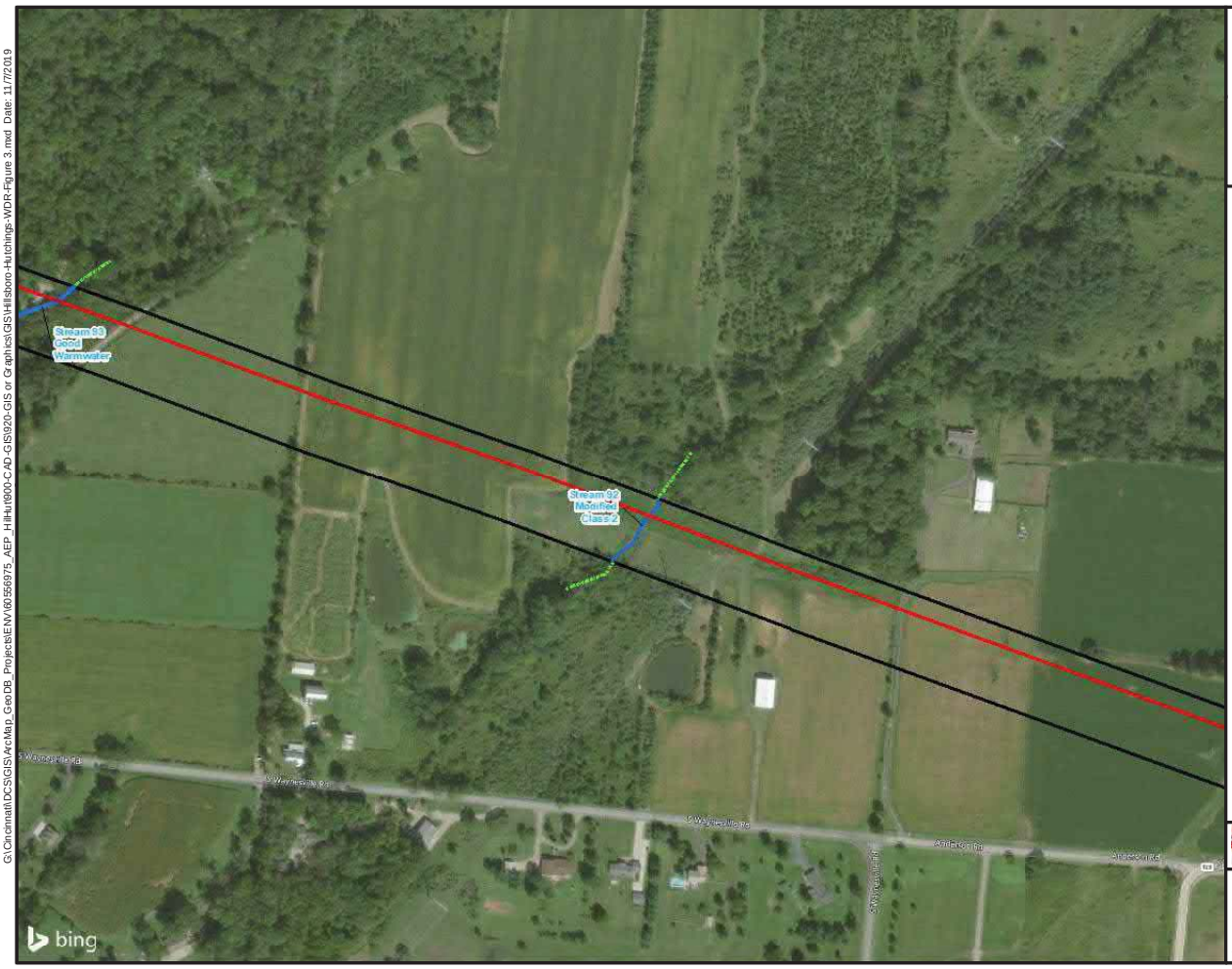

Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3III
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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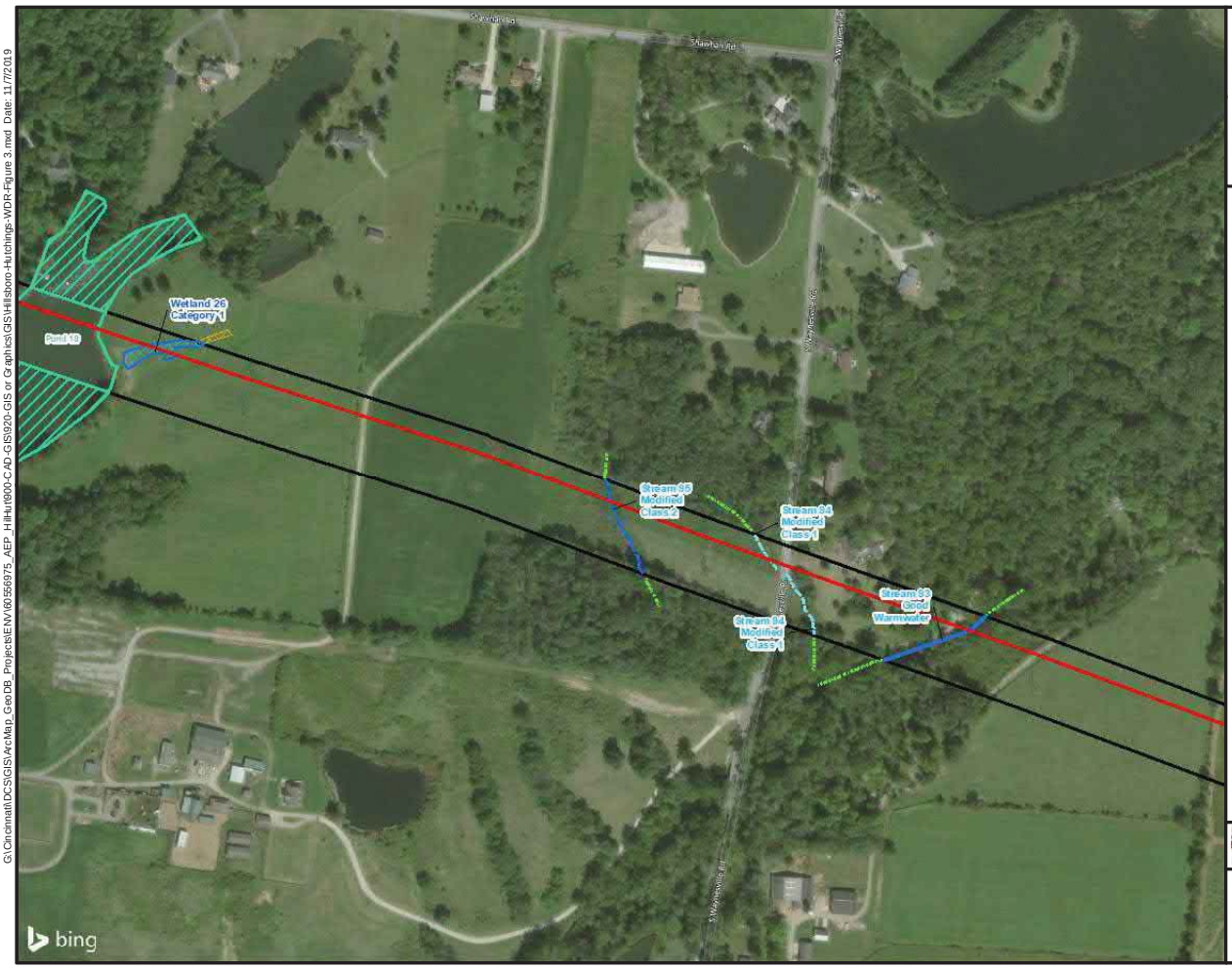

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Wetland Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3JJJ
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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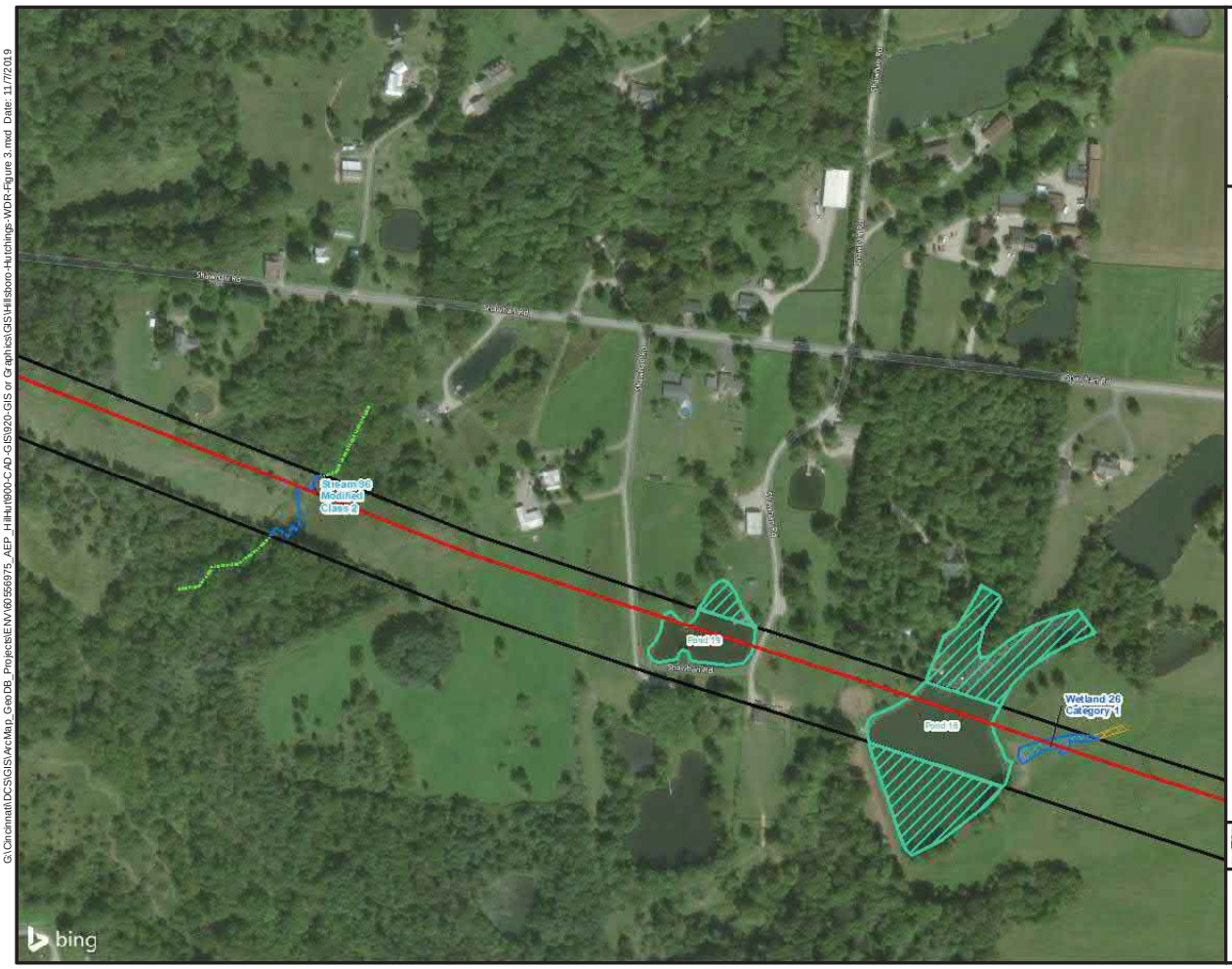

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Wetland Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3KKK
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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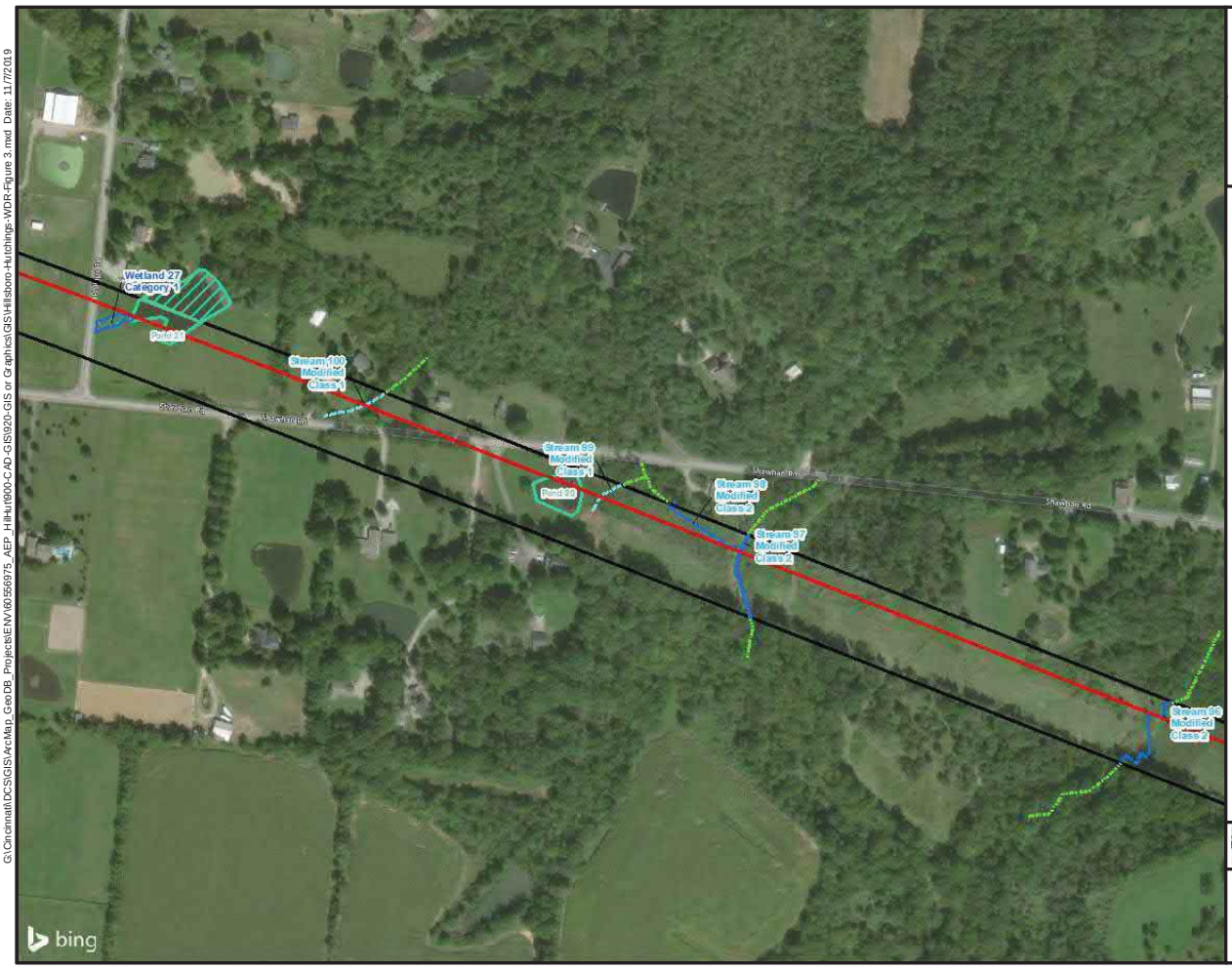

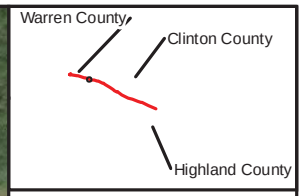

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3LLL
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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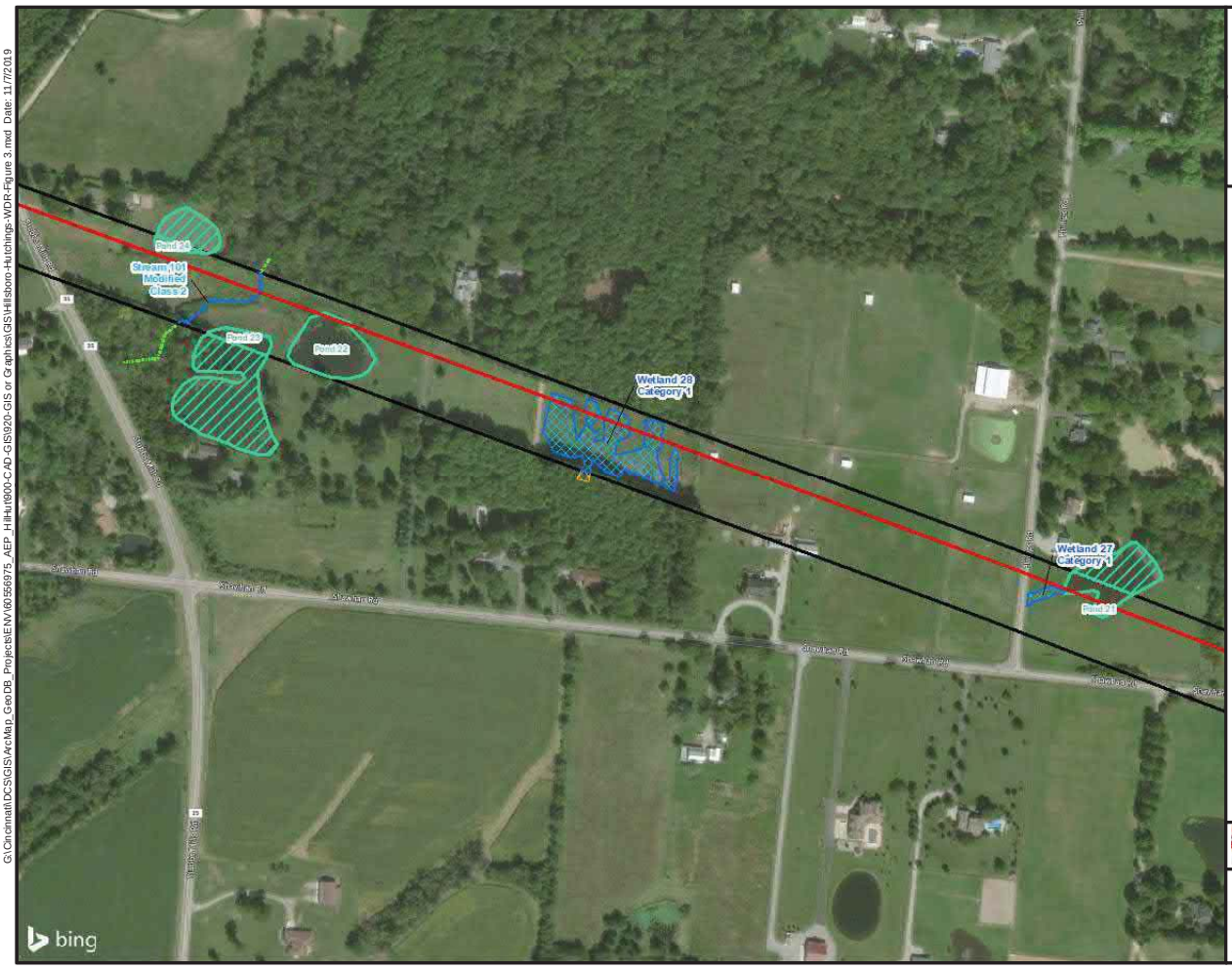

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Wetland Location
- Approximate Pond Location

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0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3MMM
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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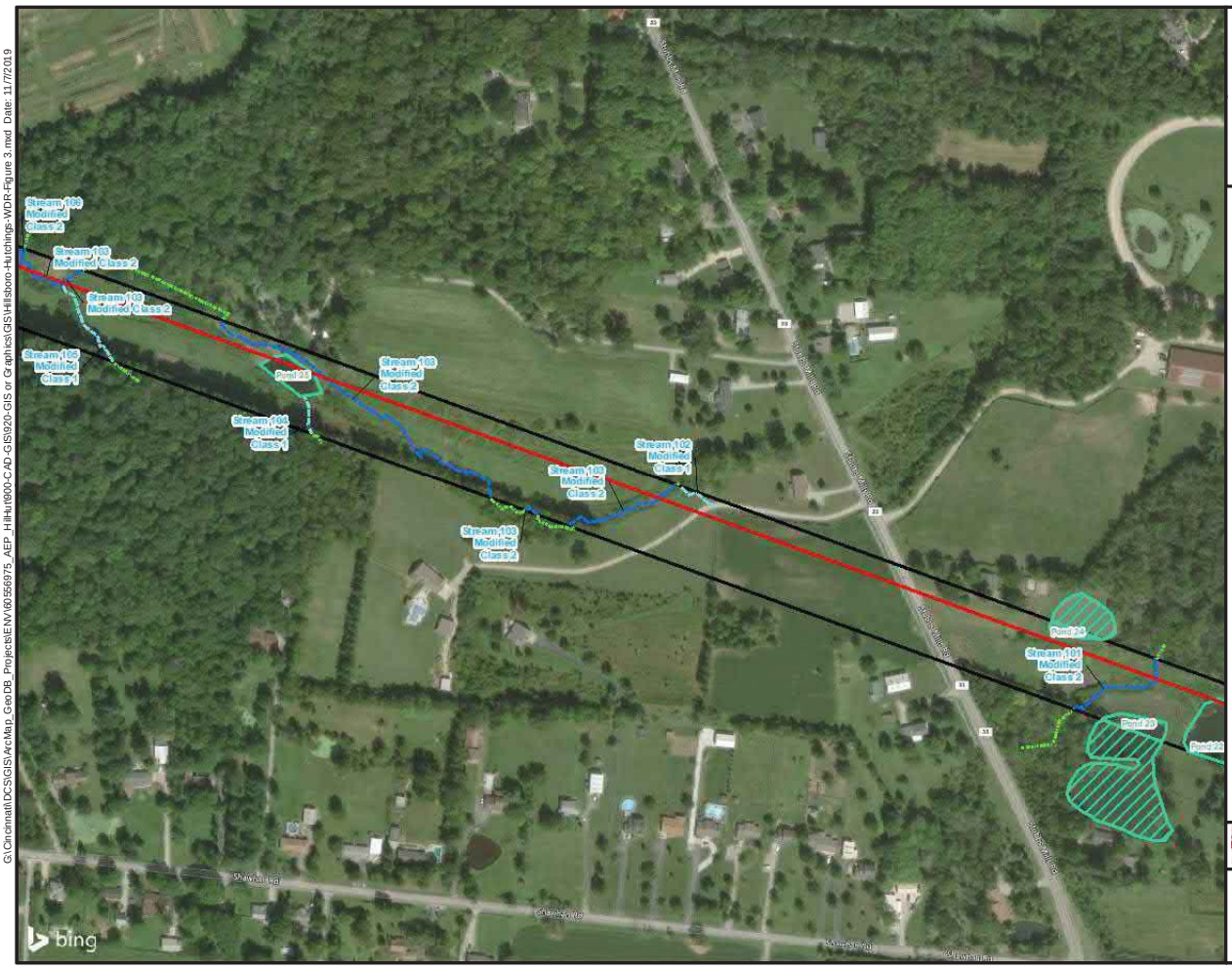

Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

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0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3NNN
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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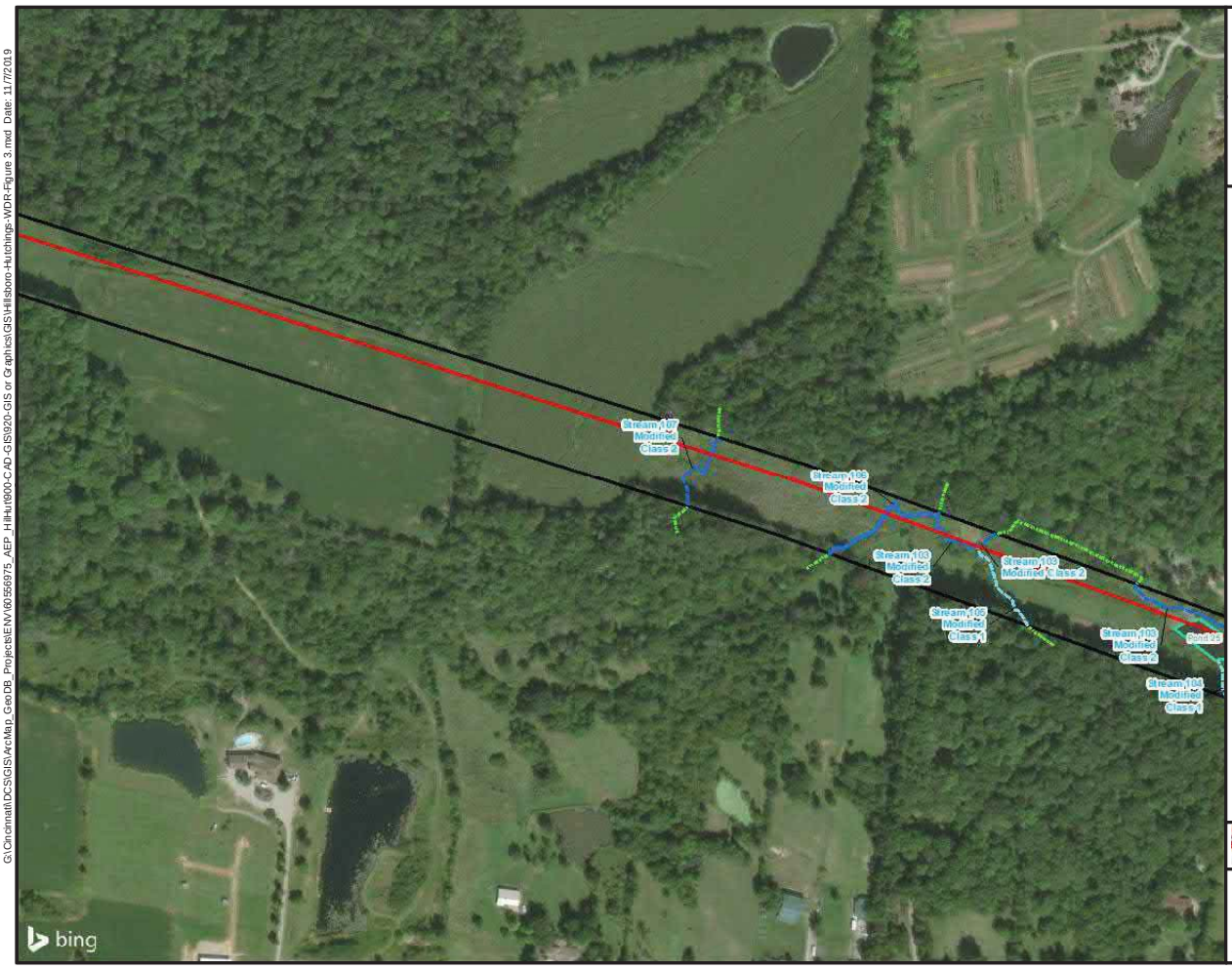

Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location

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0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3OOO
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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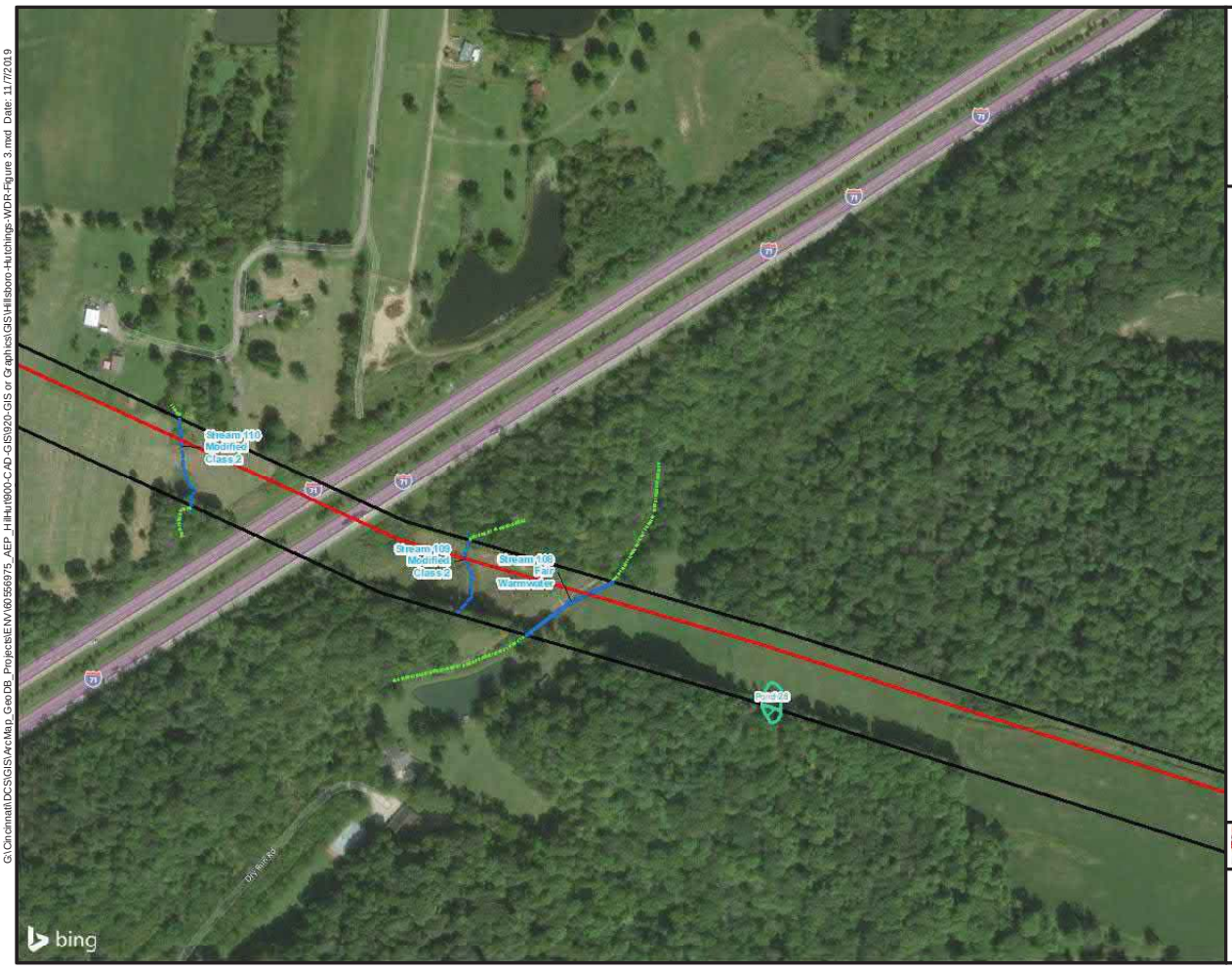

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3PPP
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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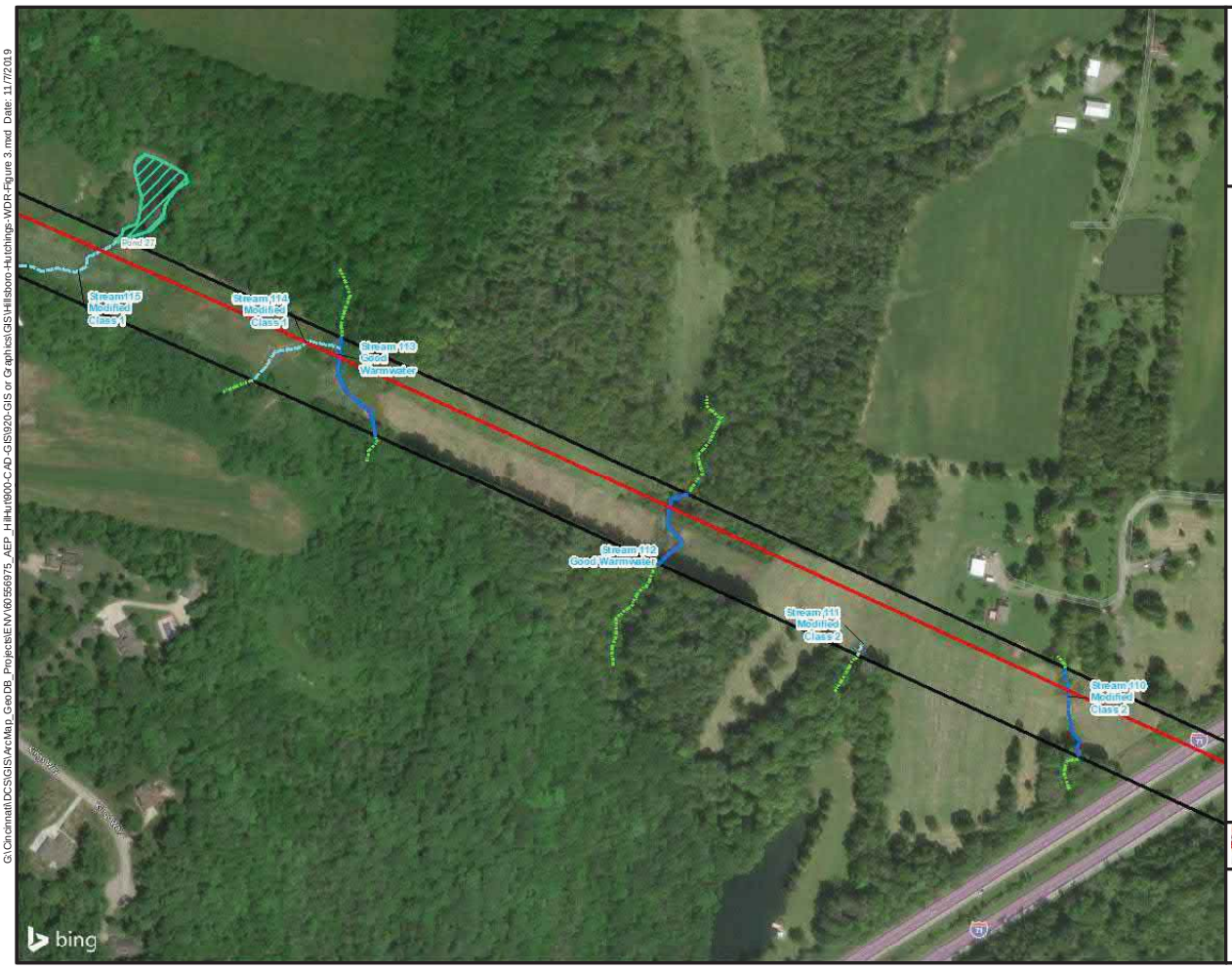

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3QQQ
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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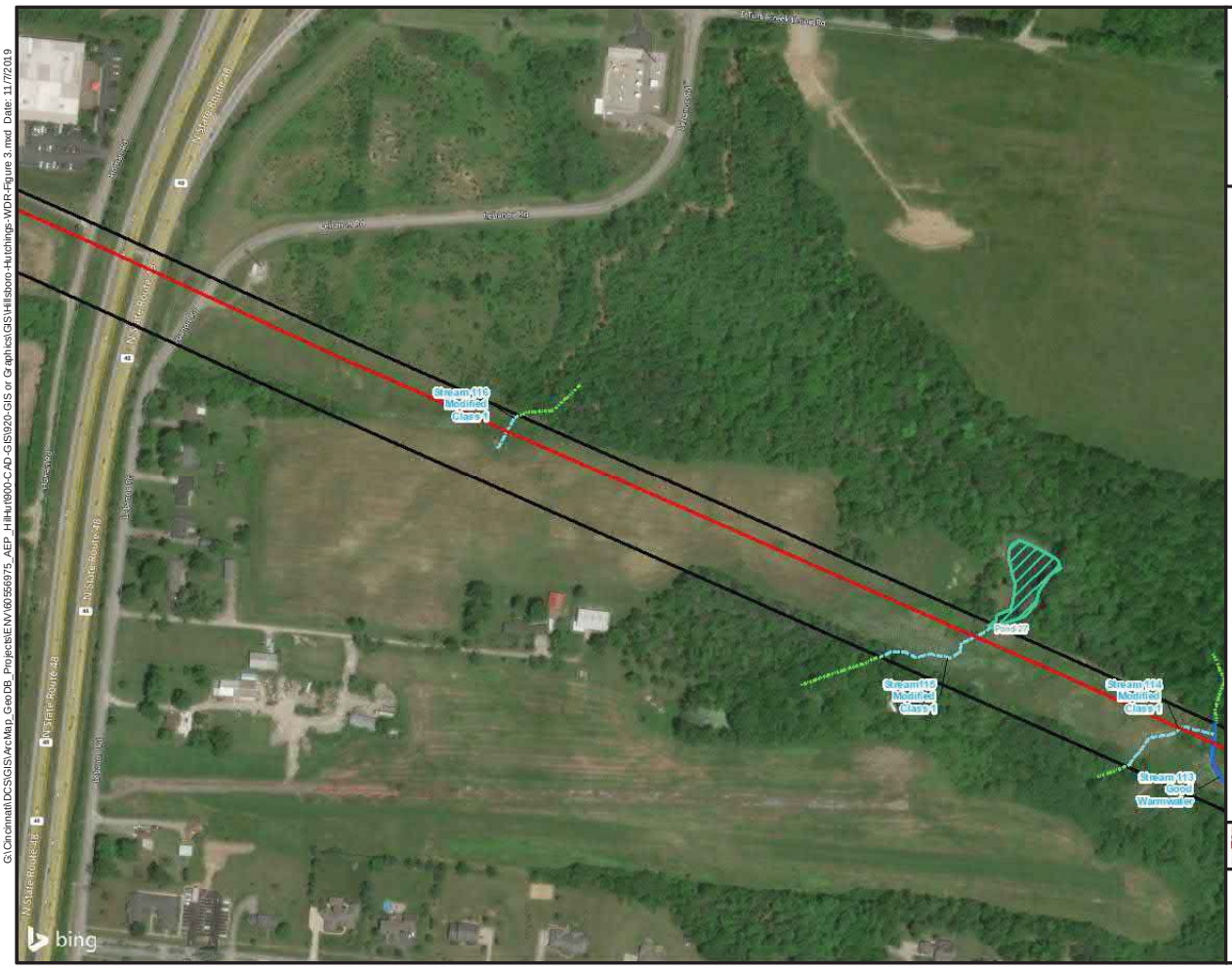

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3RRR
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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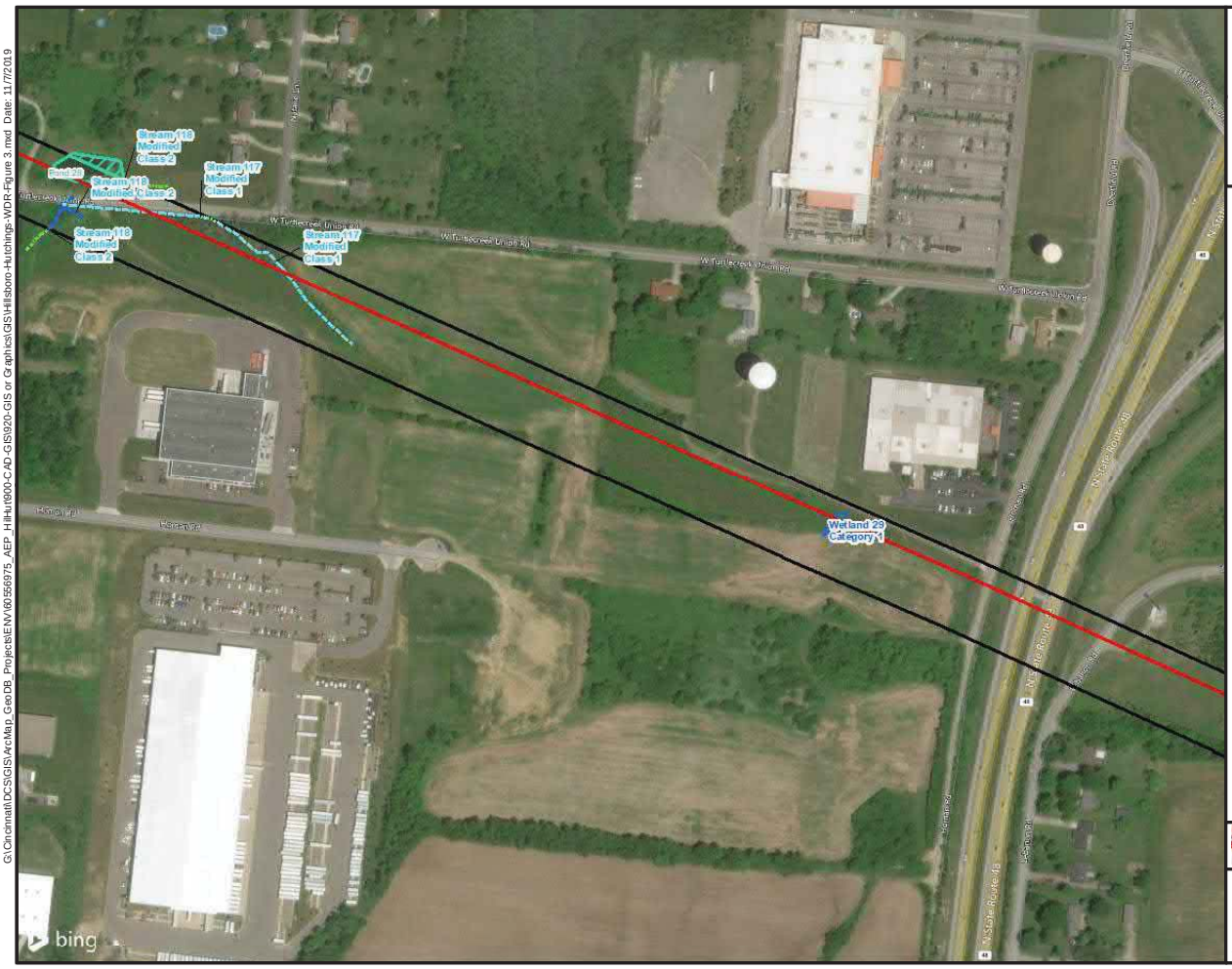

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Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3SSS
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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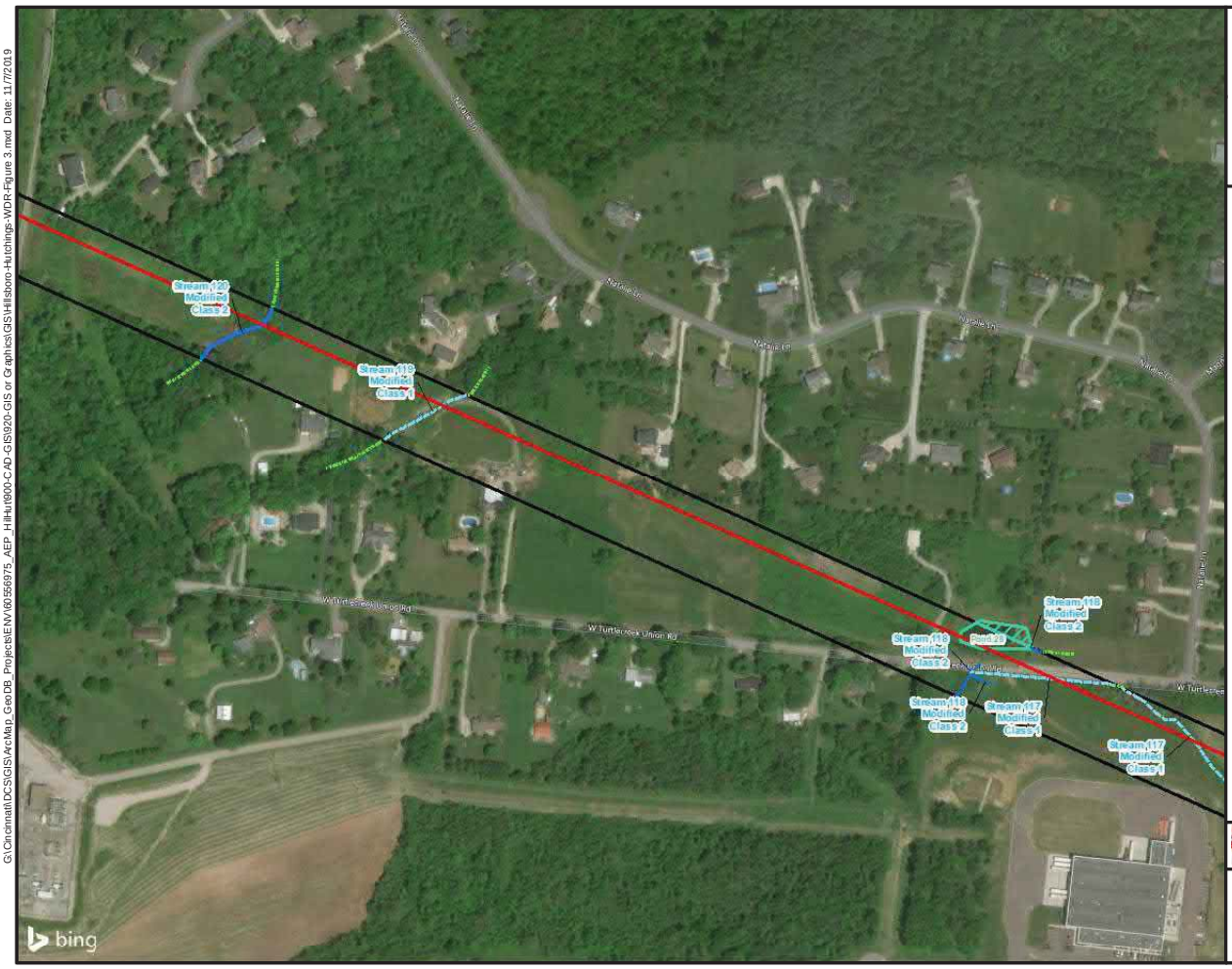

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3TTT
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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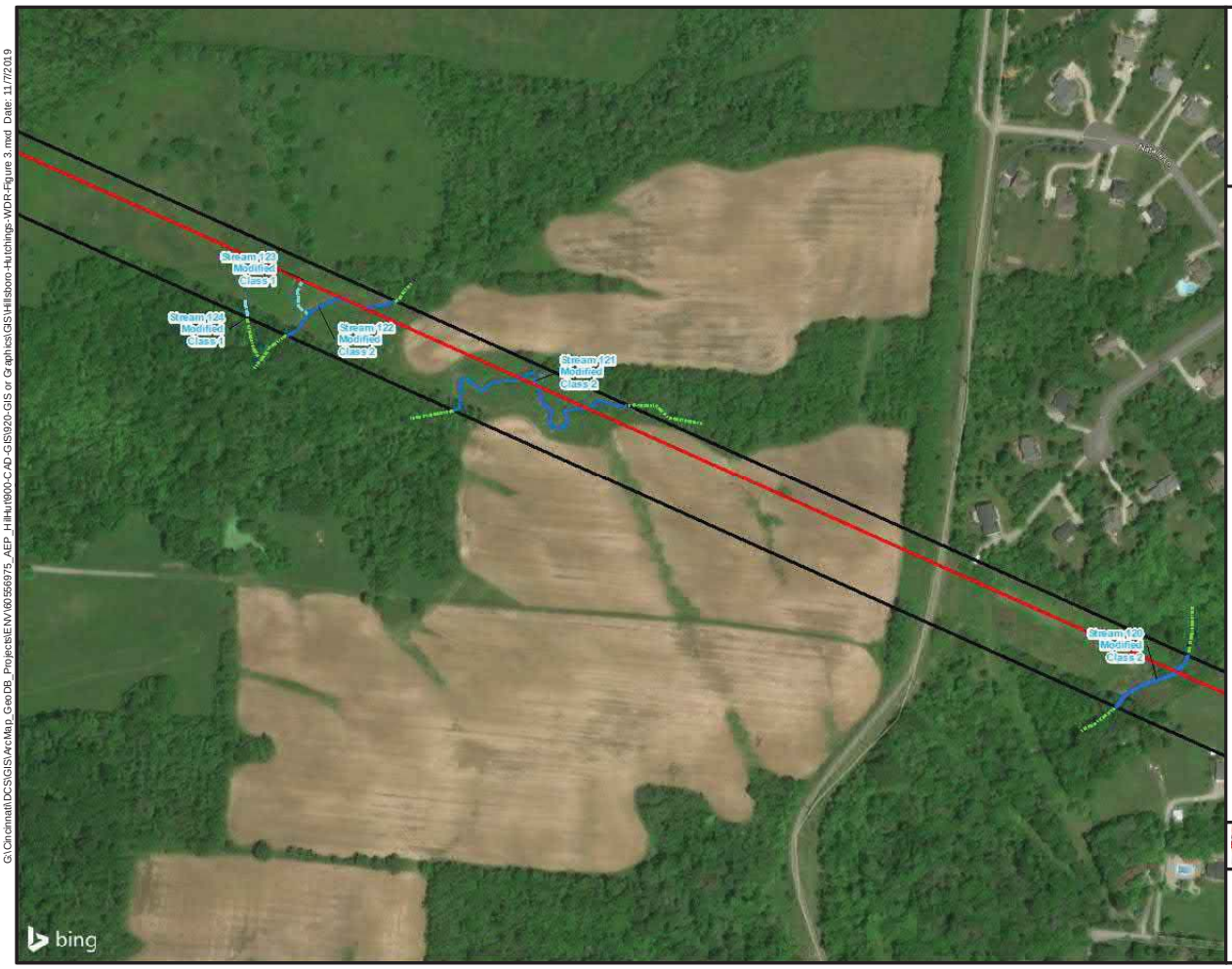

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3UUU
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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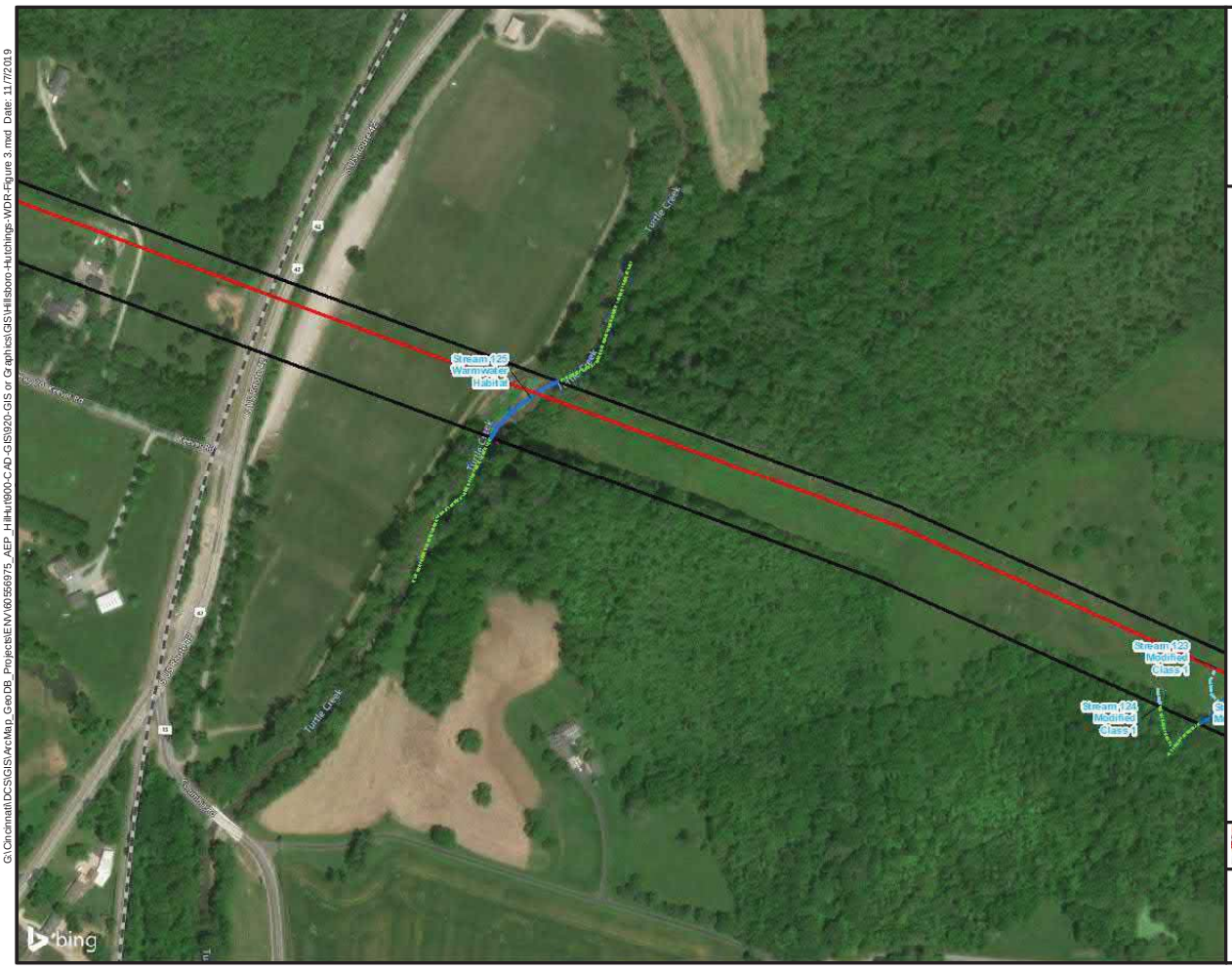

Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3VVV
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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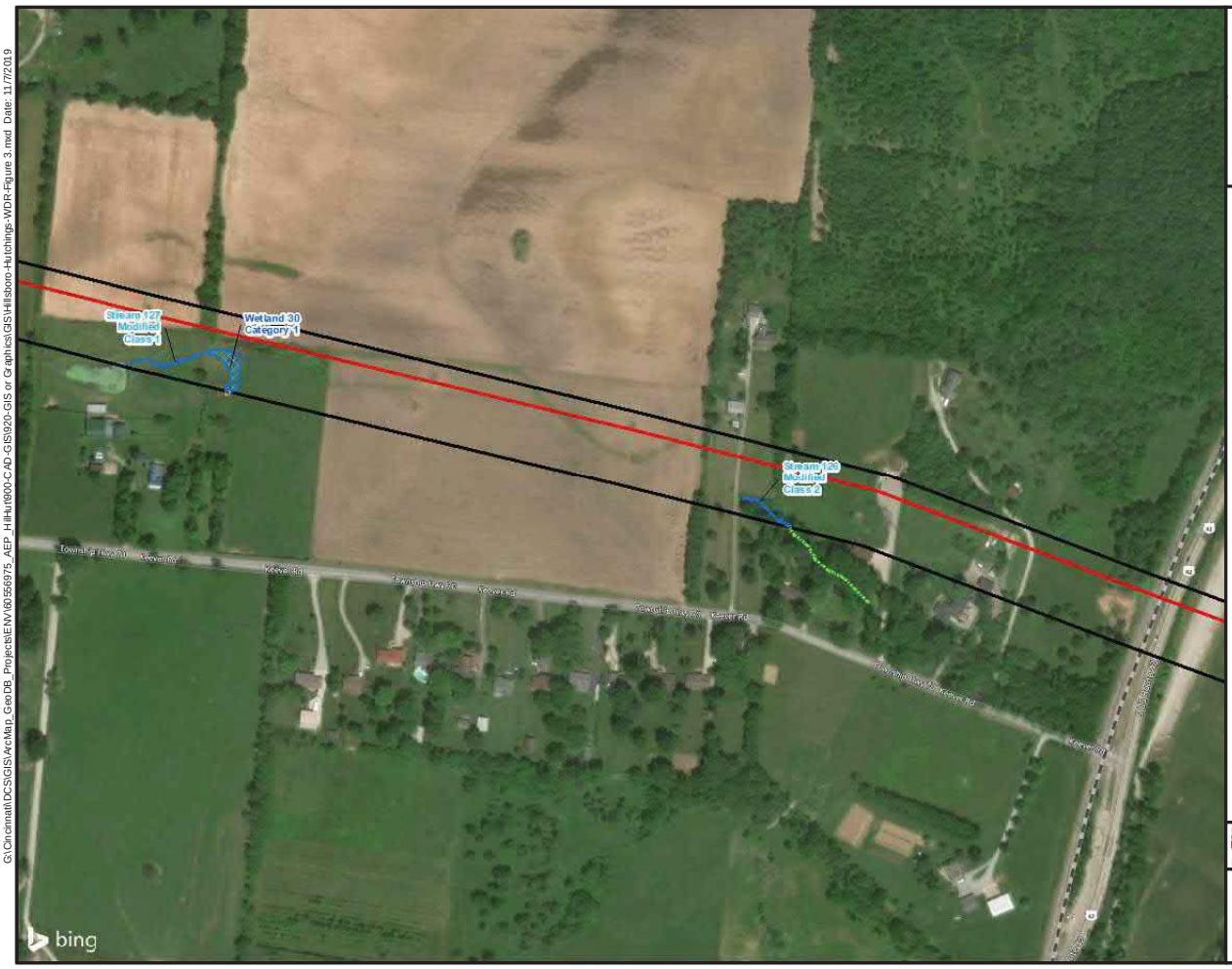

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Stream Location
- Approximate Wetland Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3WWW
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Wetland Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3XXX
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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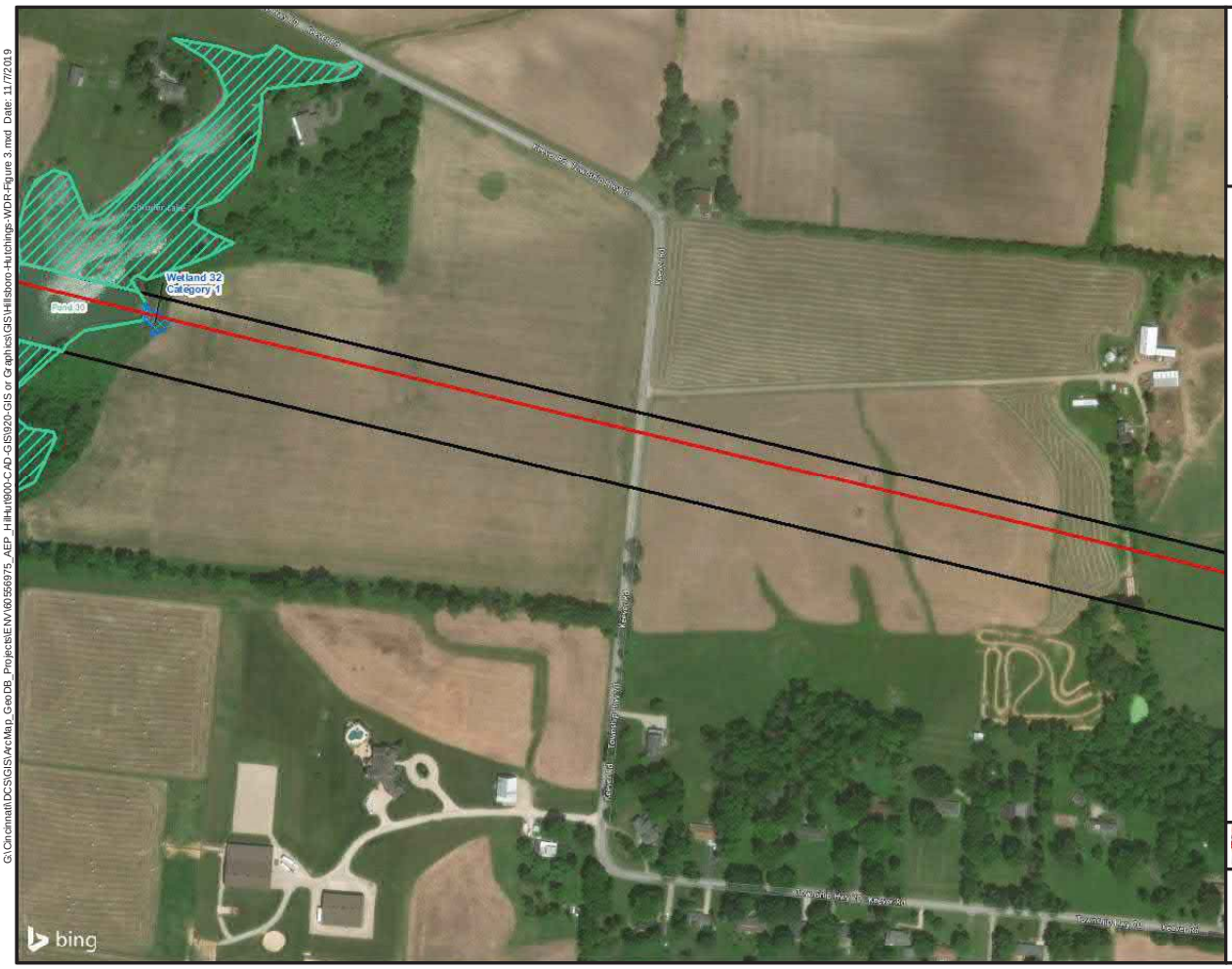

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Wetland
- Delineated Pond
- Approximate Pond Location

N

0 200 400

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3YYY
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

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Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3ZZZ
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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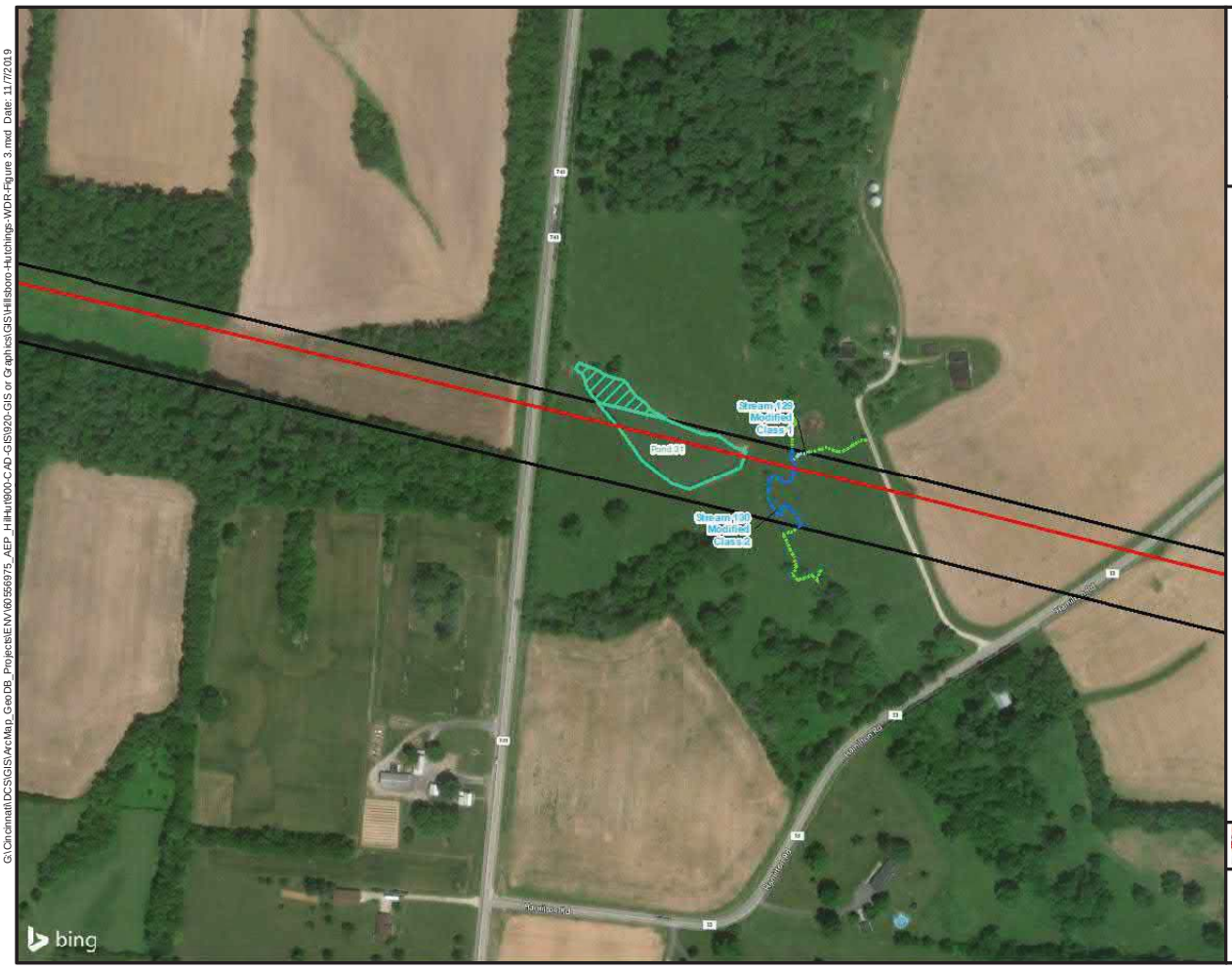

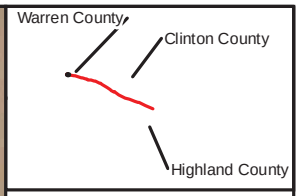

LEGEND:

- Hillsboro-Hutchings 138kv Transmission Line
- Project Survey Corridor
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Pond
- Approximate Stream Location
- Approximate Pond Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3AAAA
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

Warren County

Clinton County

Highland County

LEGEND:

Hillsboro-Hutchings 138kv Transmission Line

Project Survey Corridor

Delineated Intermittent Stream

Approximate Stream Location

N

0 200 400

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 3BBBB
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60556975

AECOM

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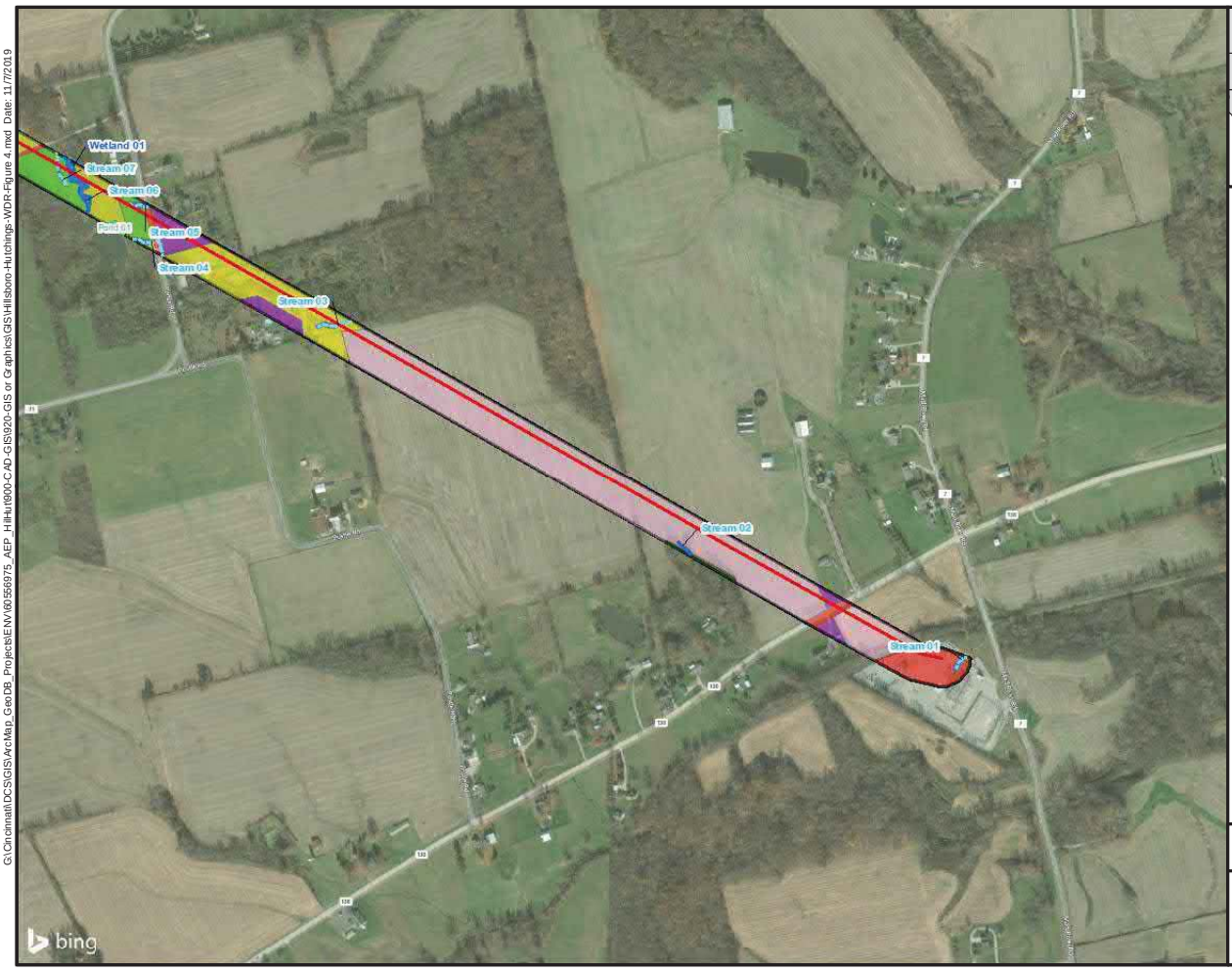

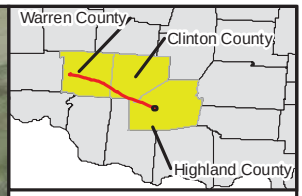

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4A
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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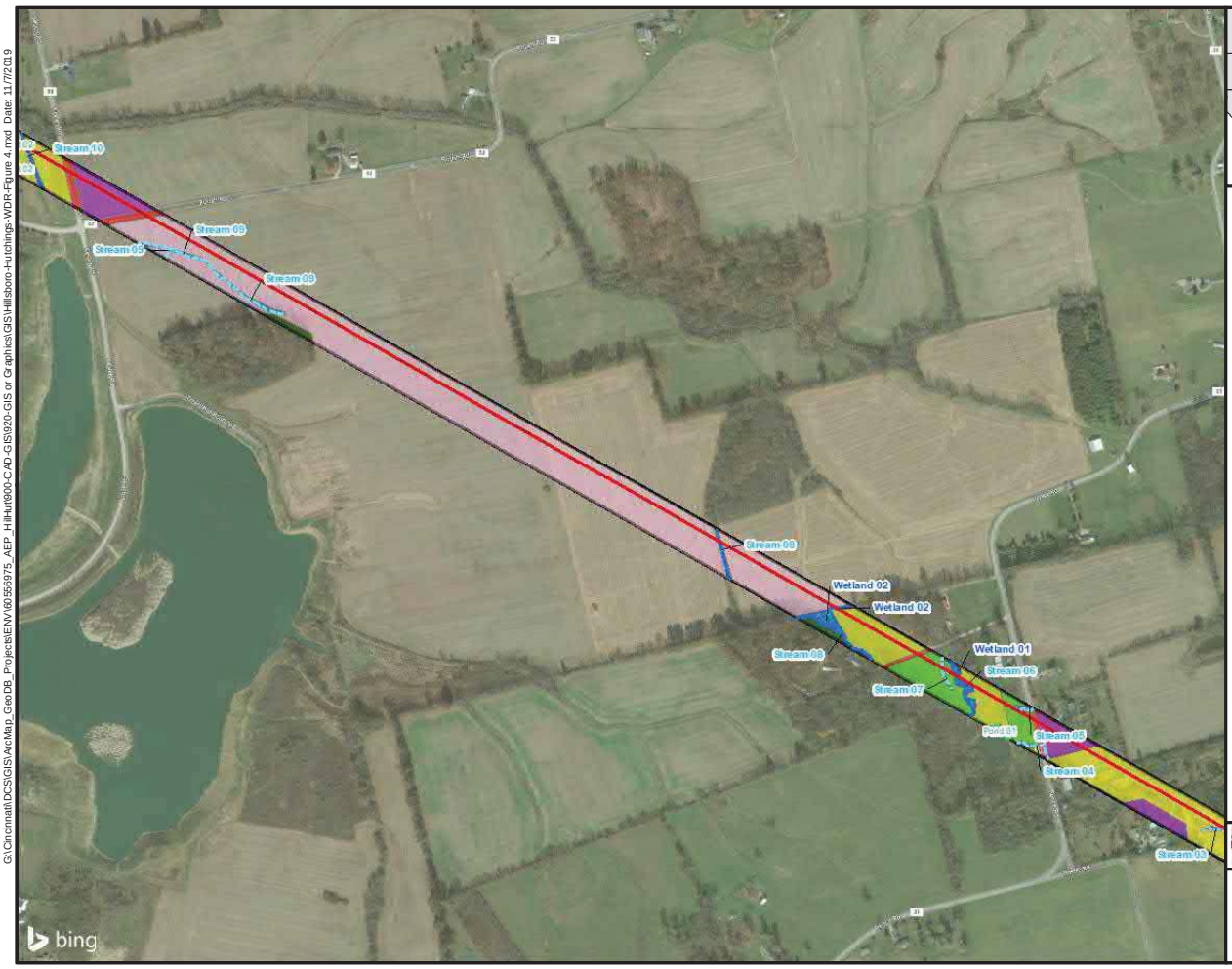

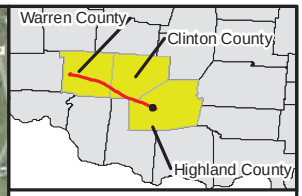

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4B
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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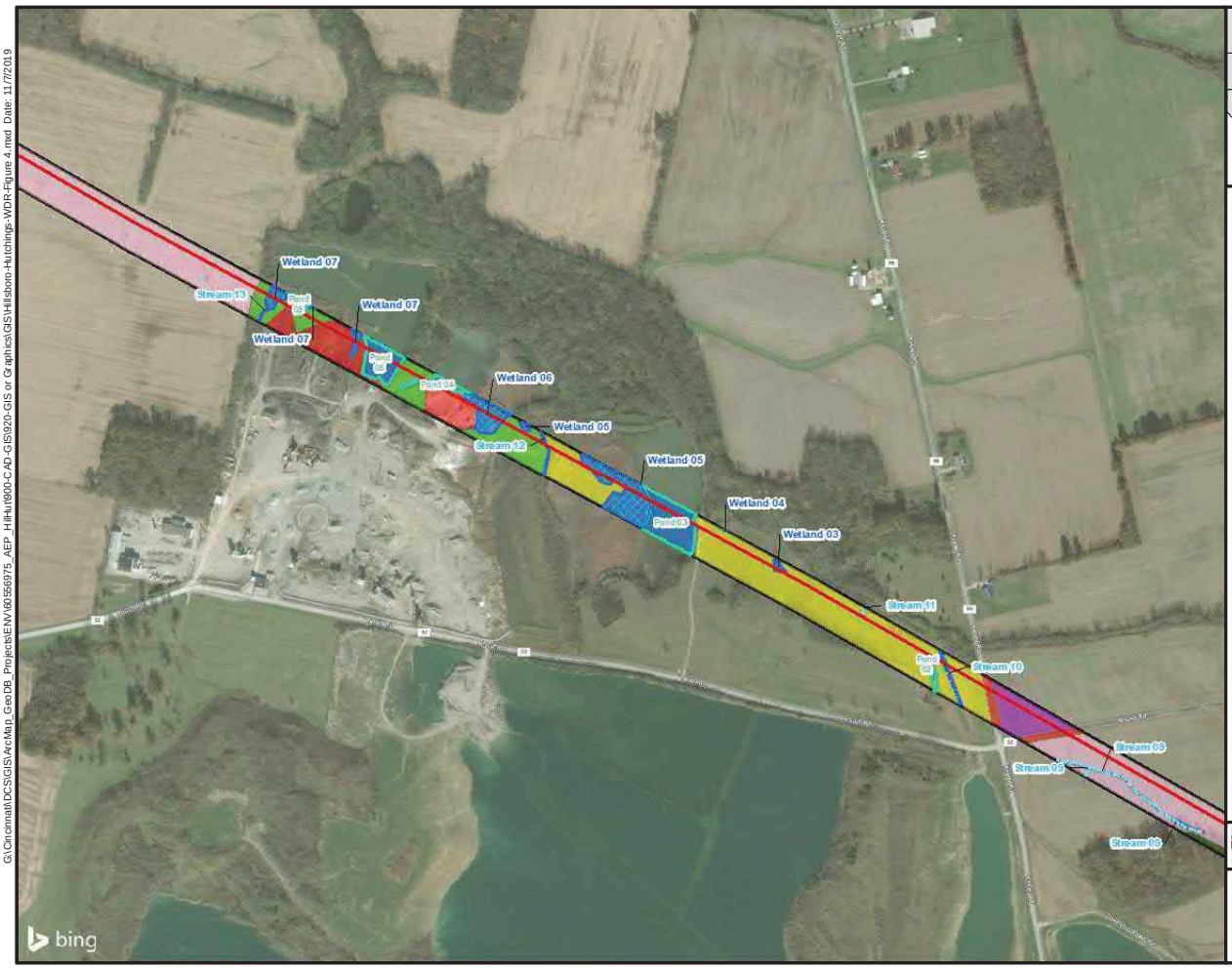

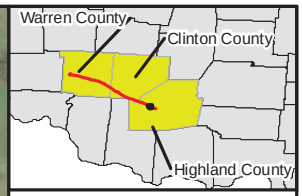

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4C
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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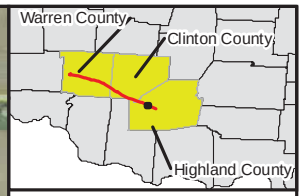

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4D
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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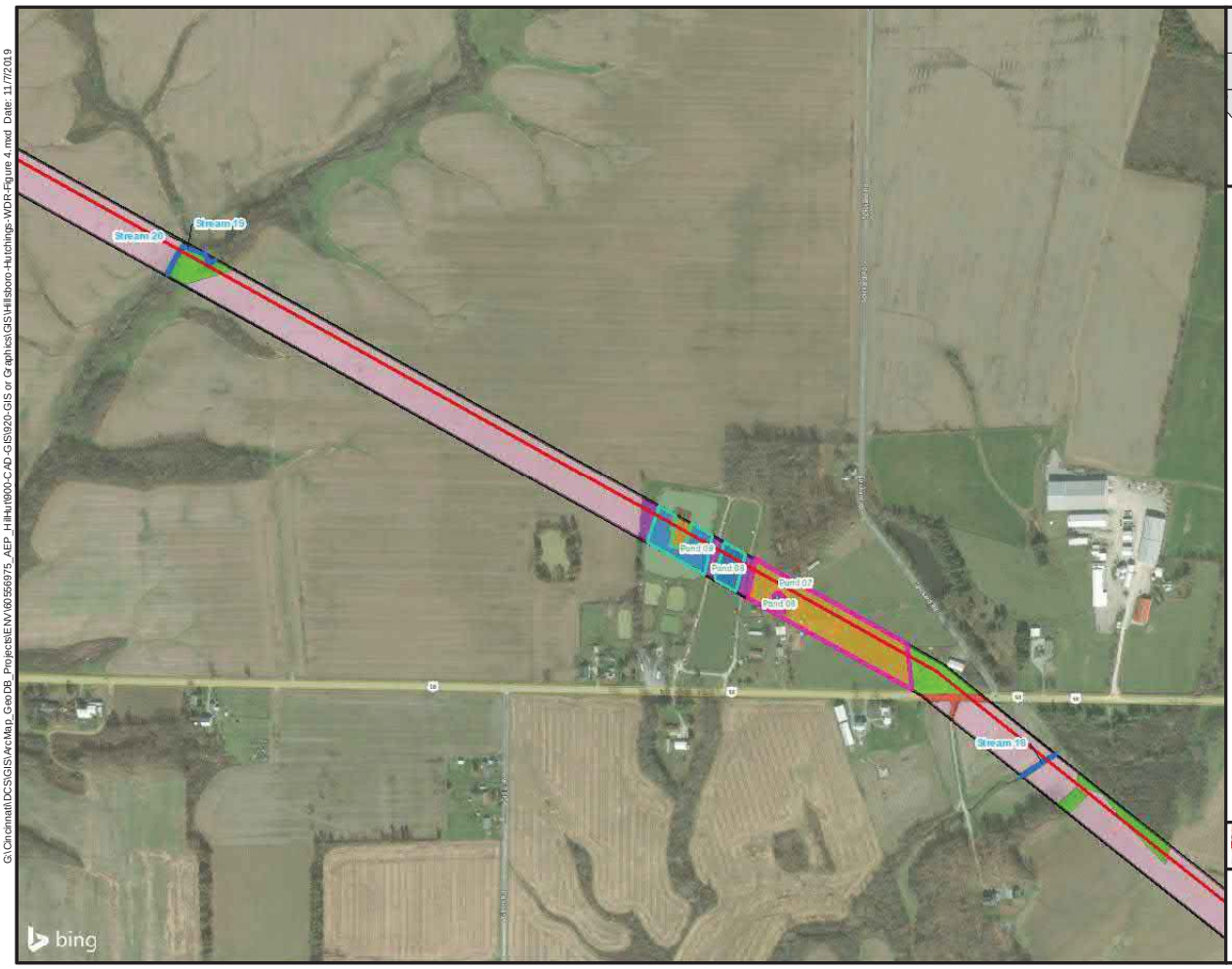

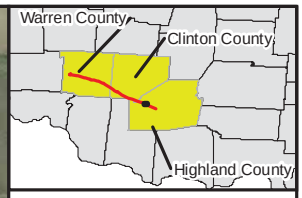

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4E
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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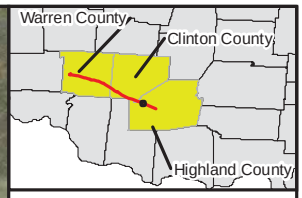

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Agricultural Land
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4F
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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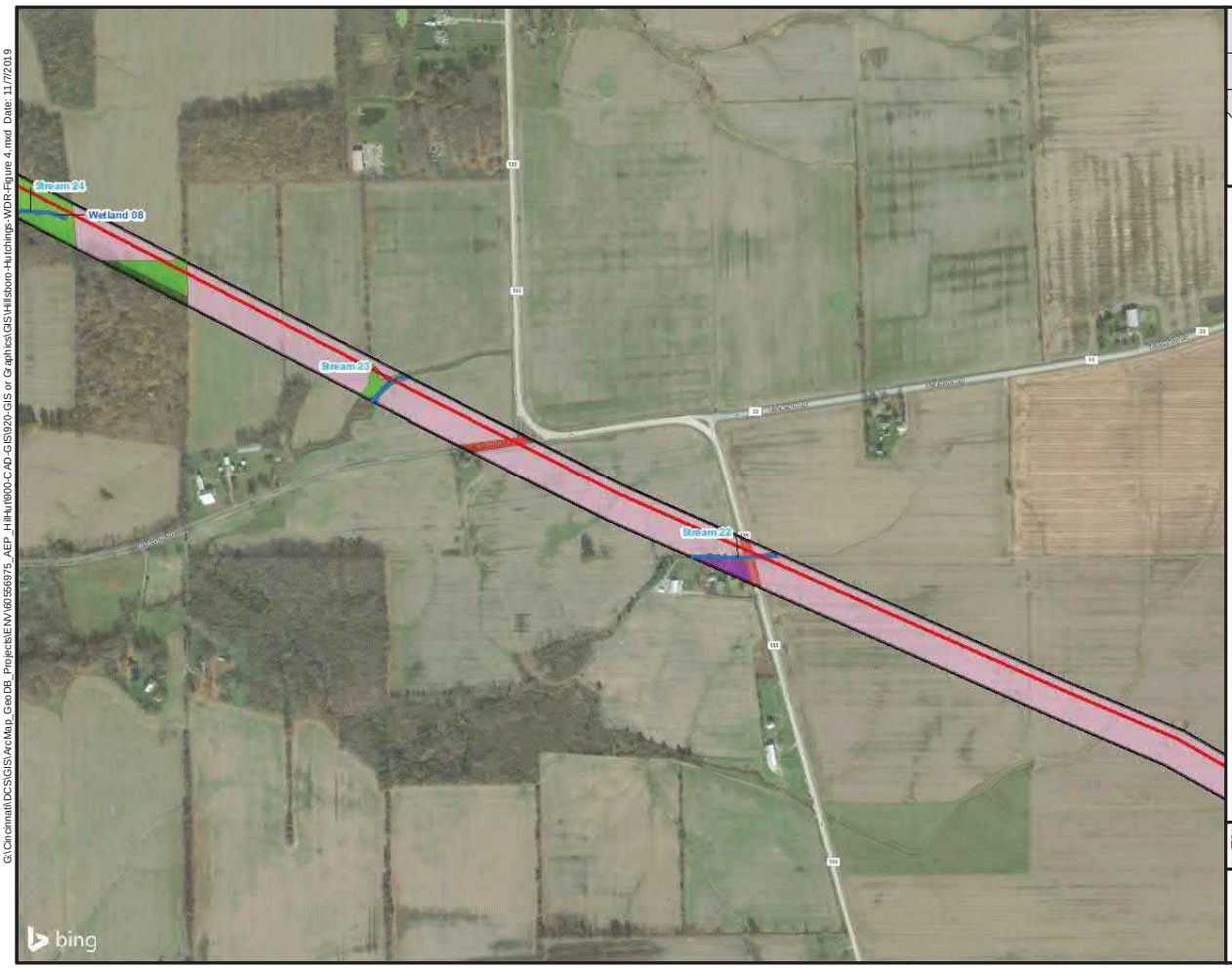

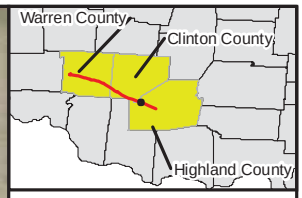

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4G
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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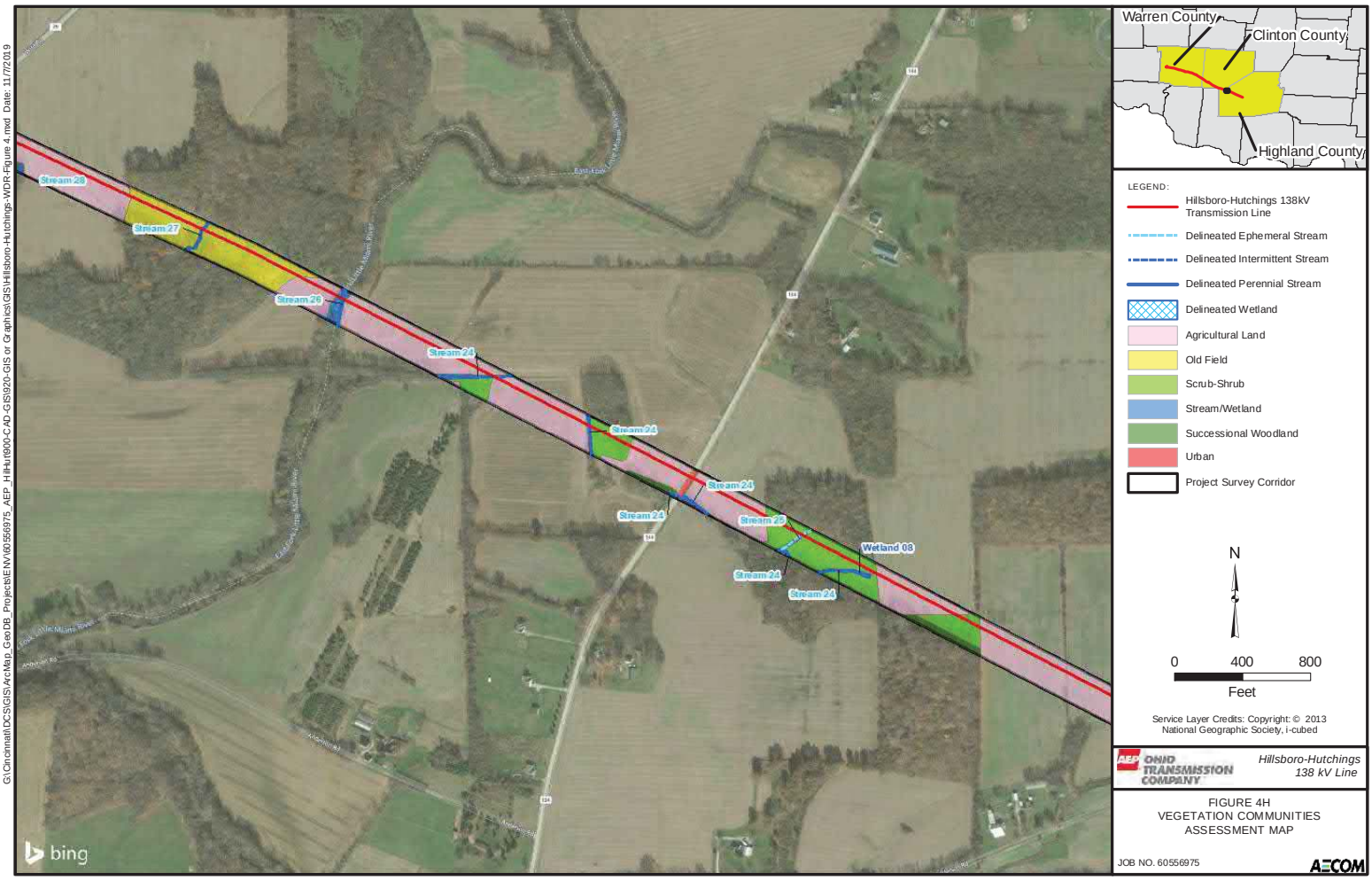

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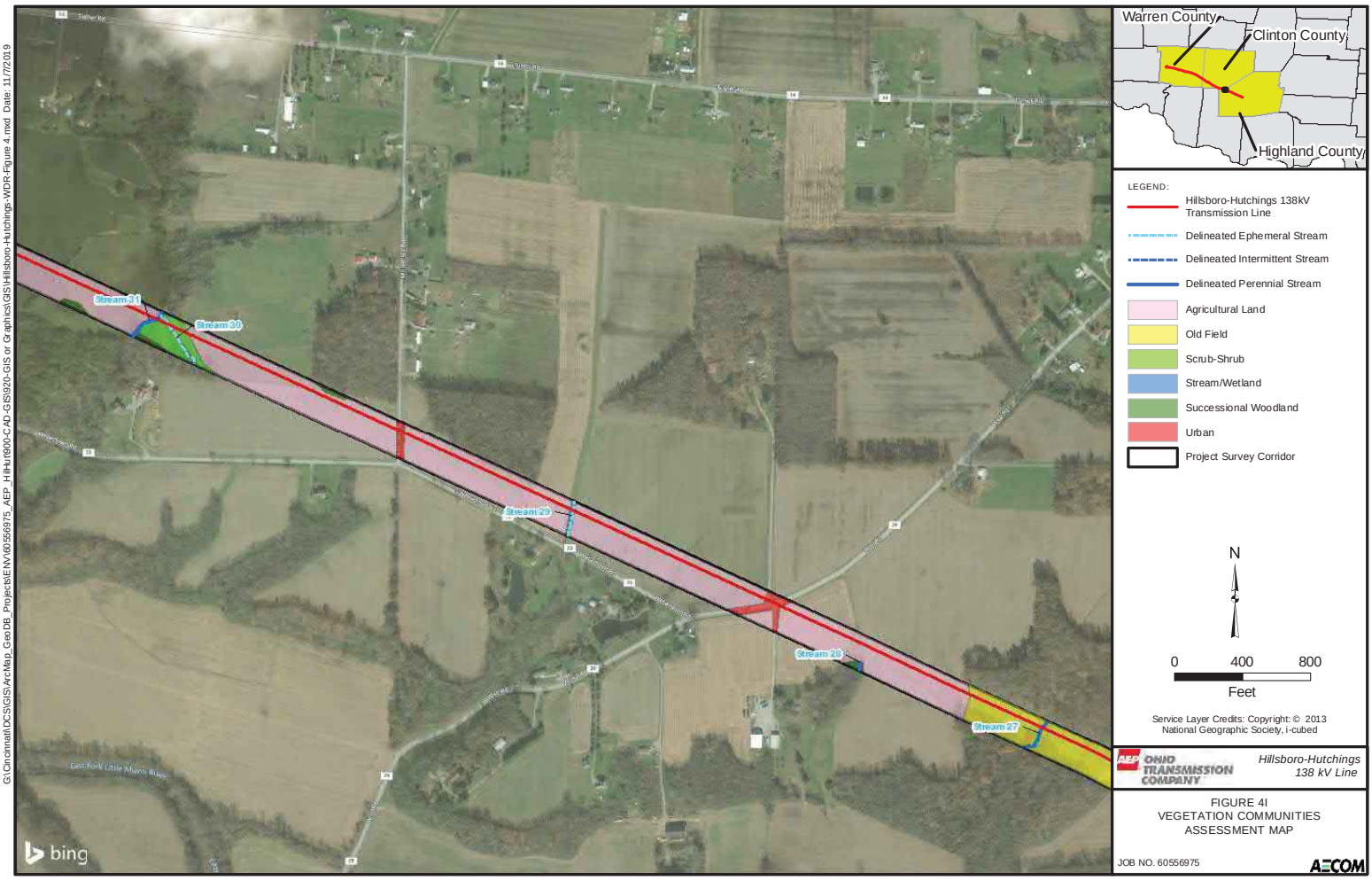

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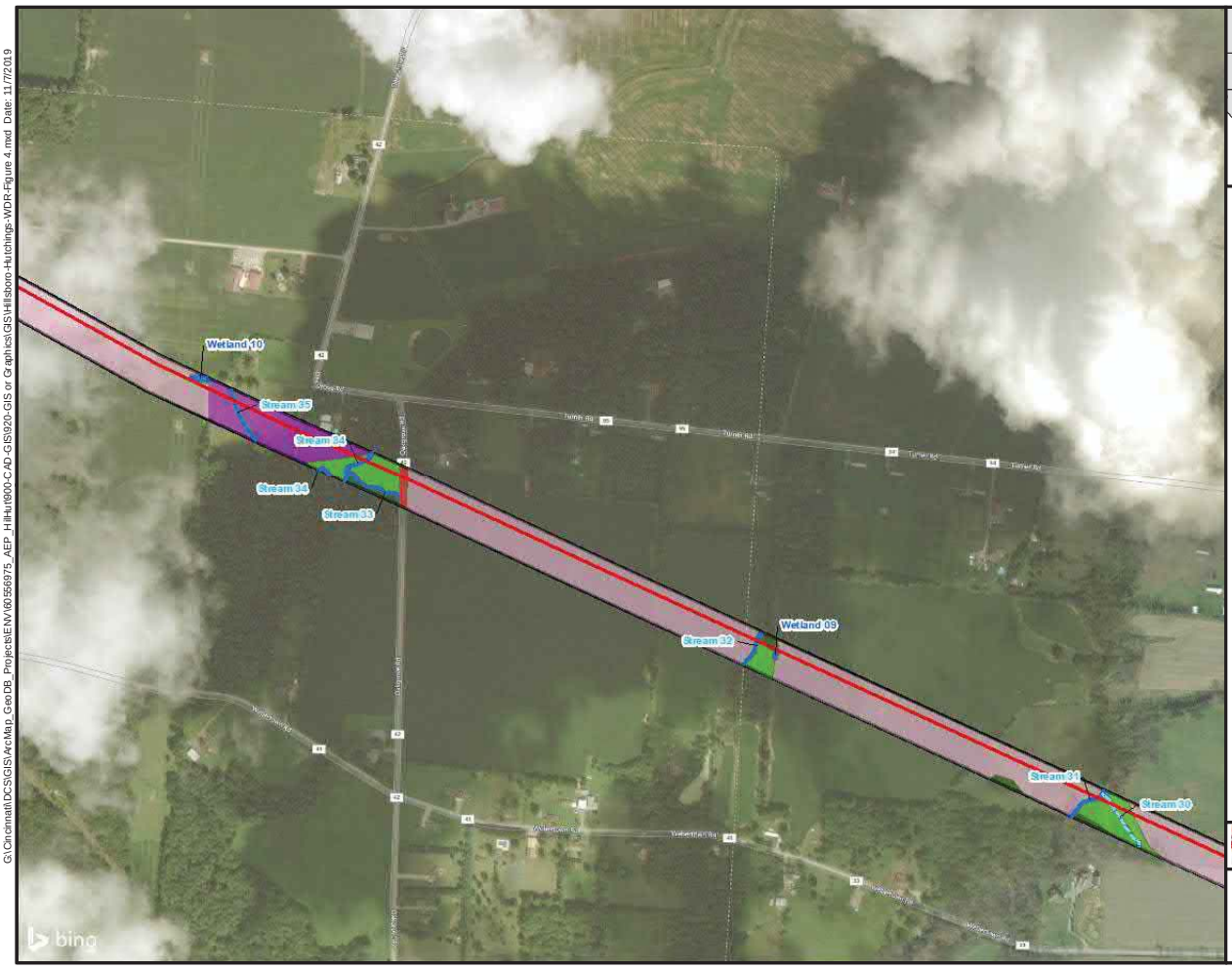

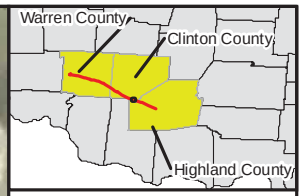

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4J
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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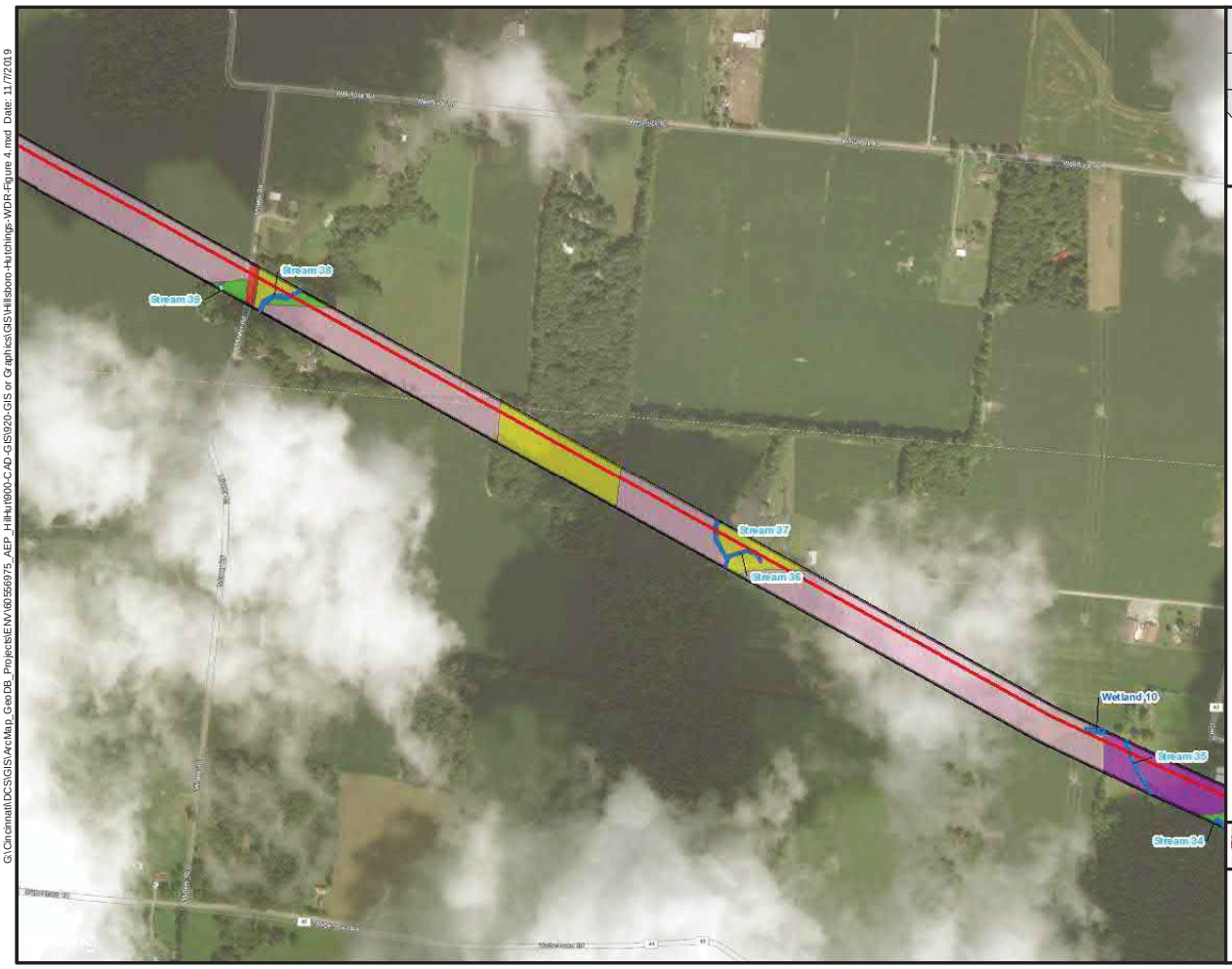

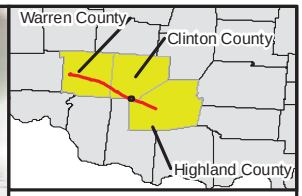

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4K
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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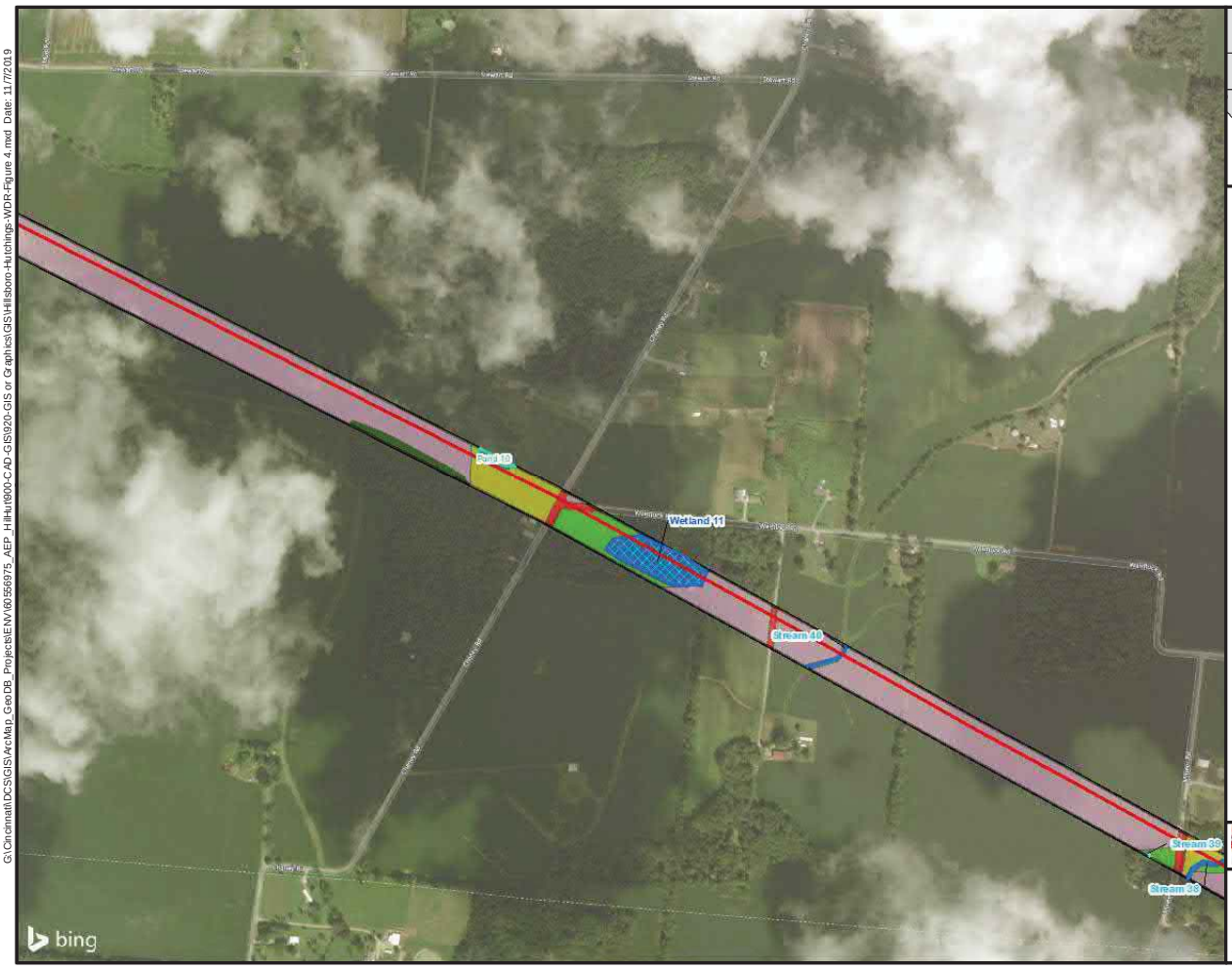

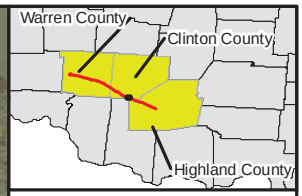

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4L
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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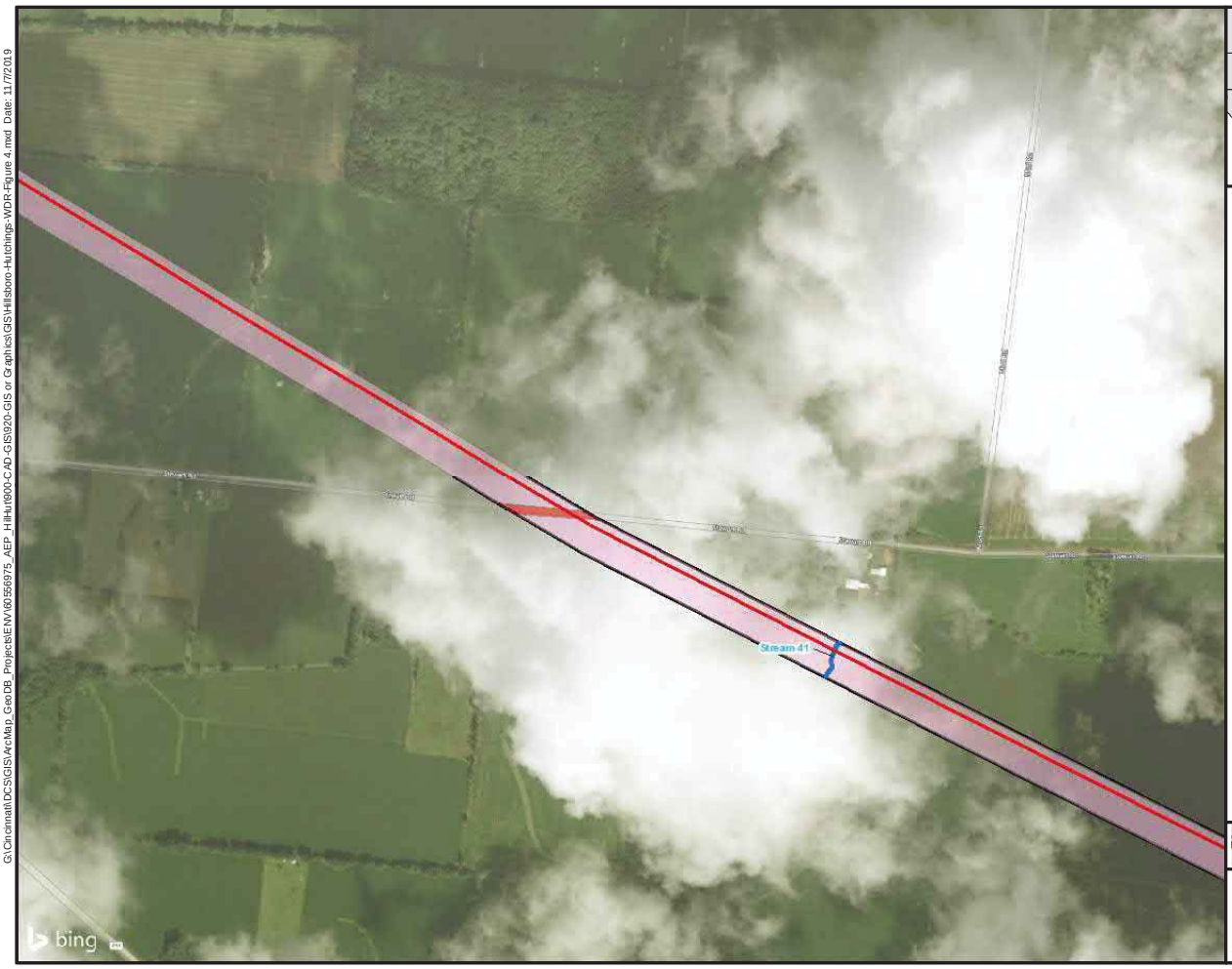

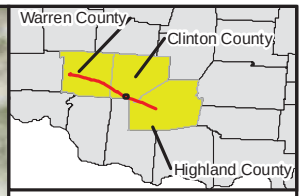

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Perennial Stream
- Agricultural Land
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4M
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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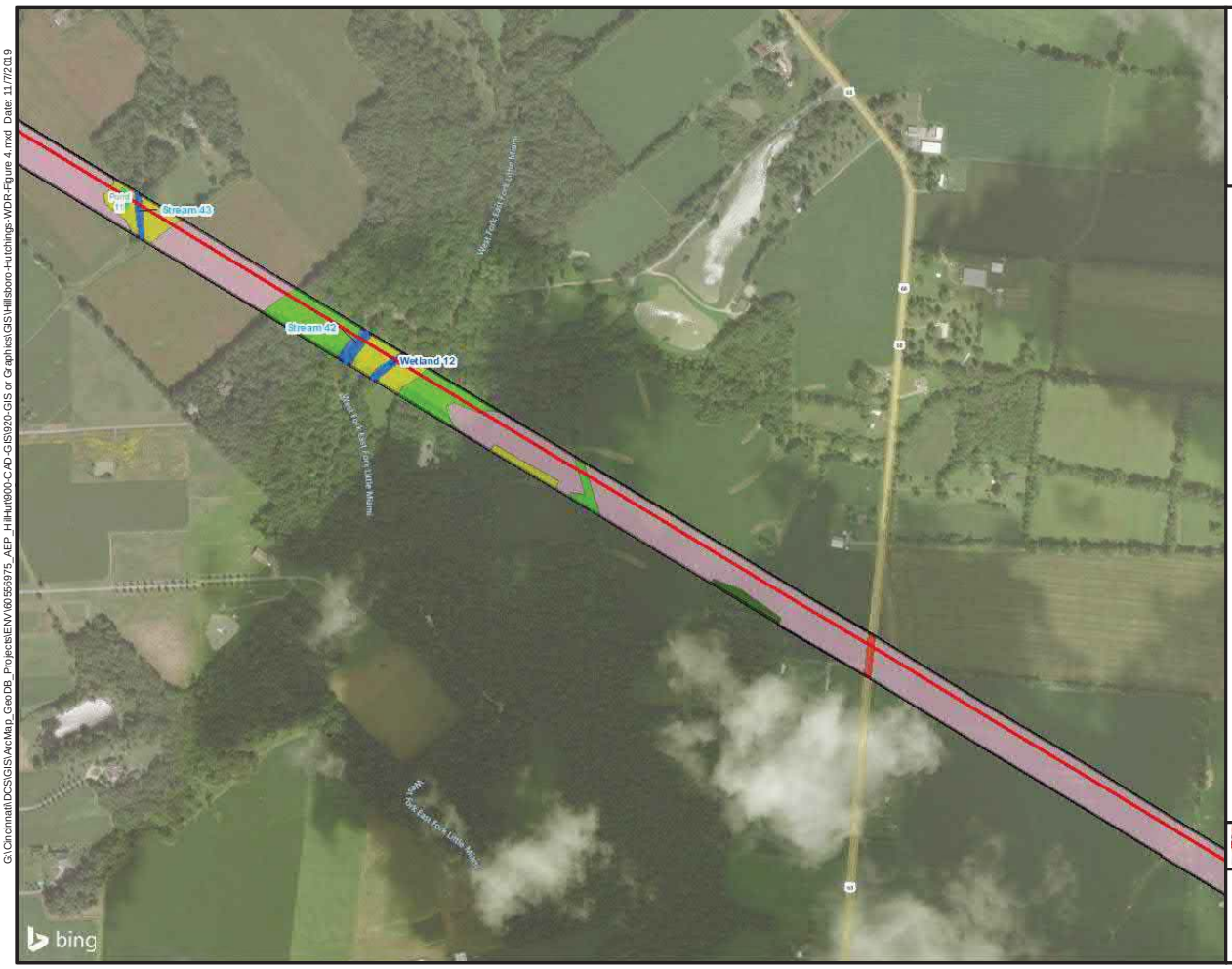

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4N
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4O
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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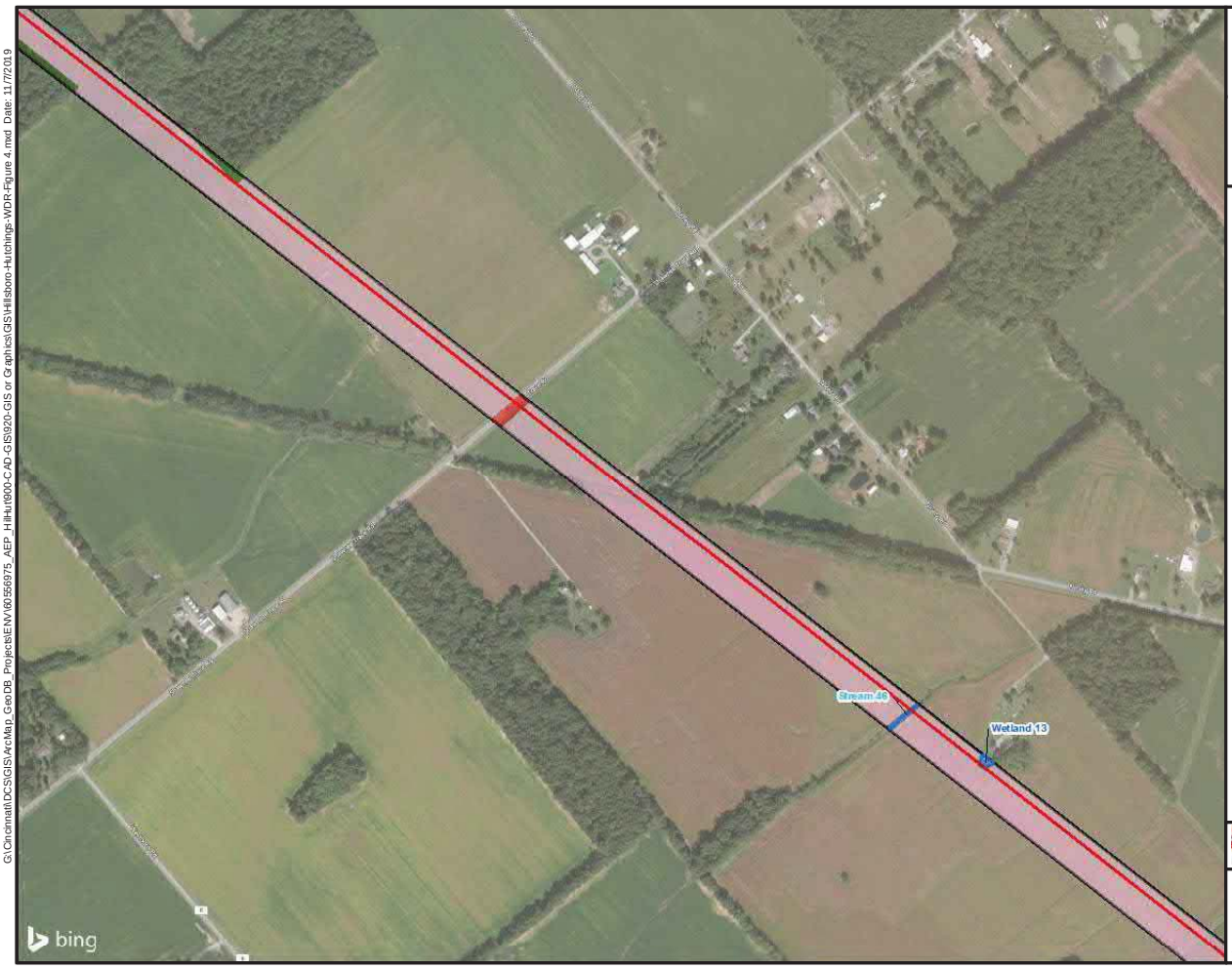

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Wetland
- Agricultural Land
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4P
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4Q
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Perennial Stream
- Agricultural Land
- Landscaped Area
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

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AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4R
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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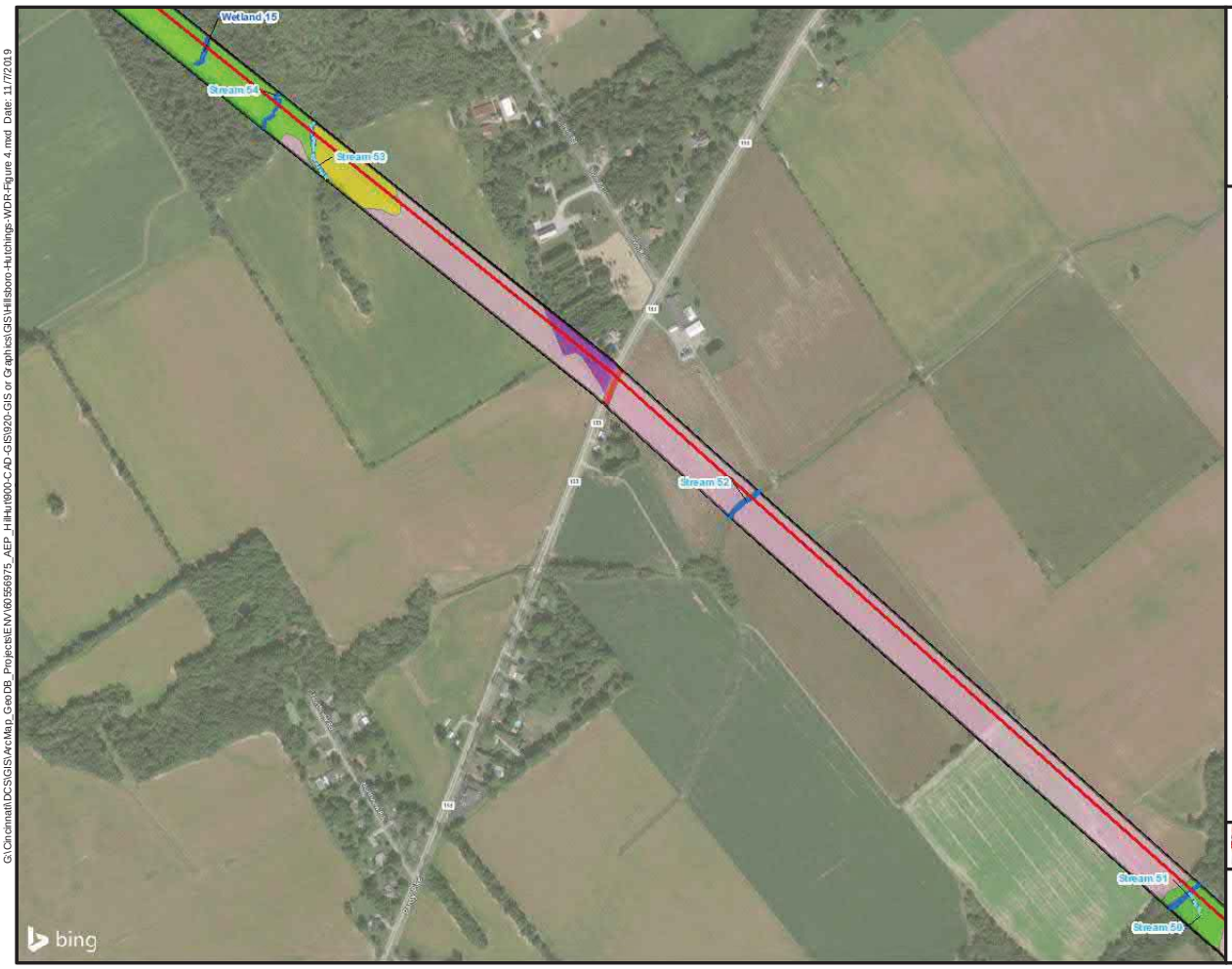

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4S
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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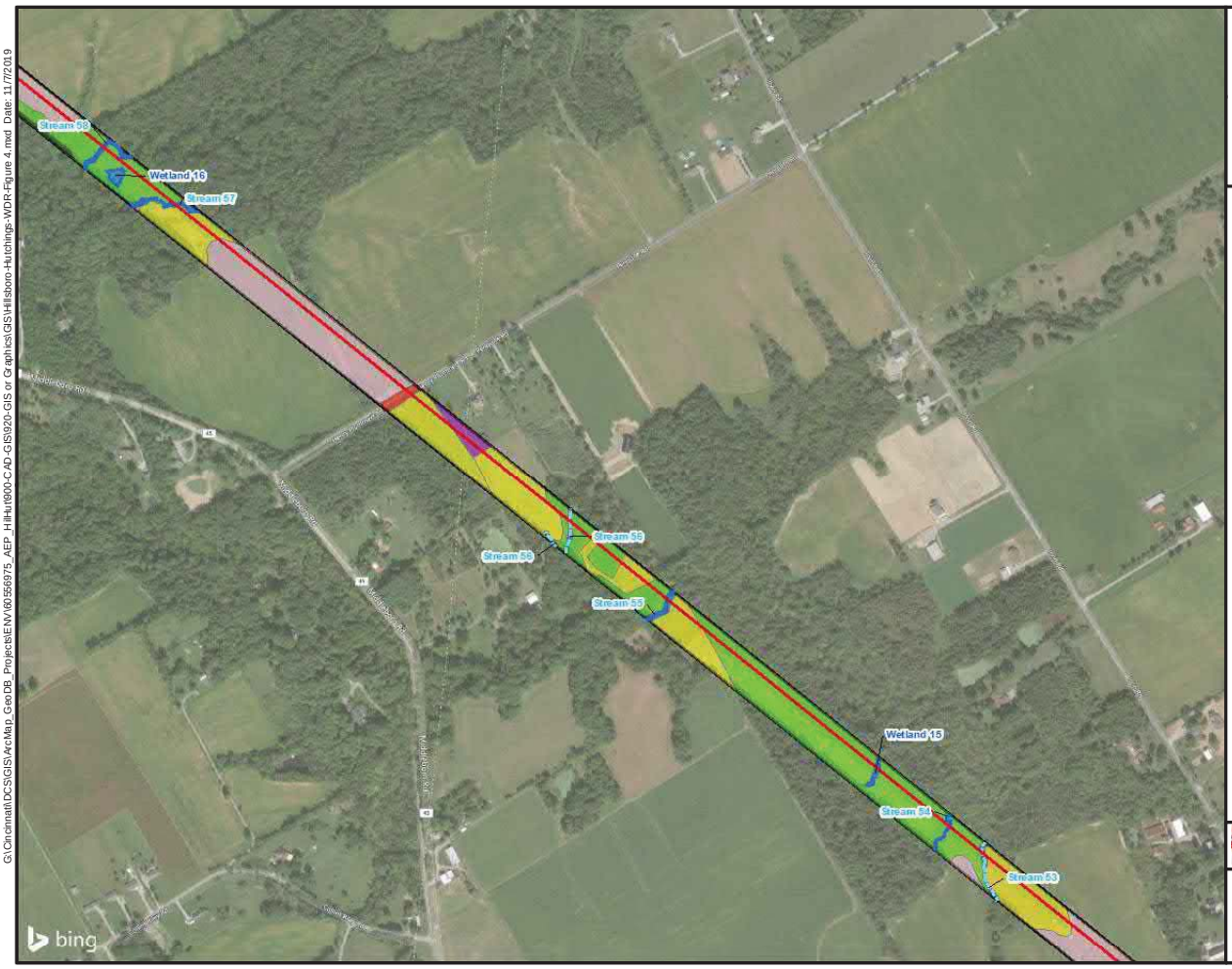

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4T
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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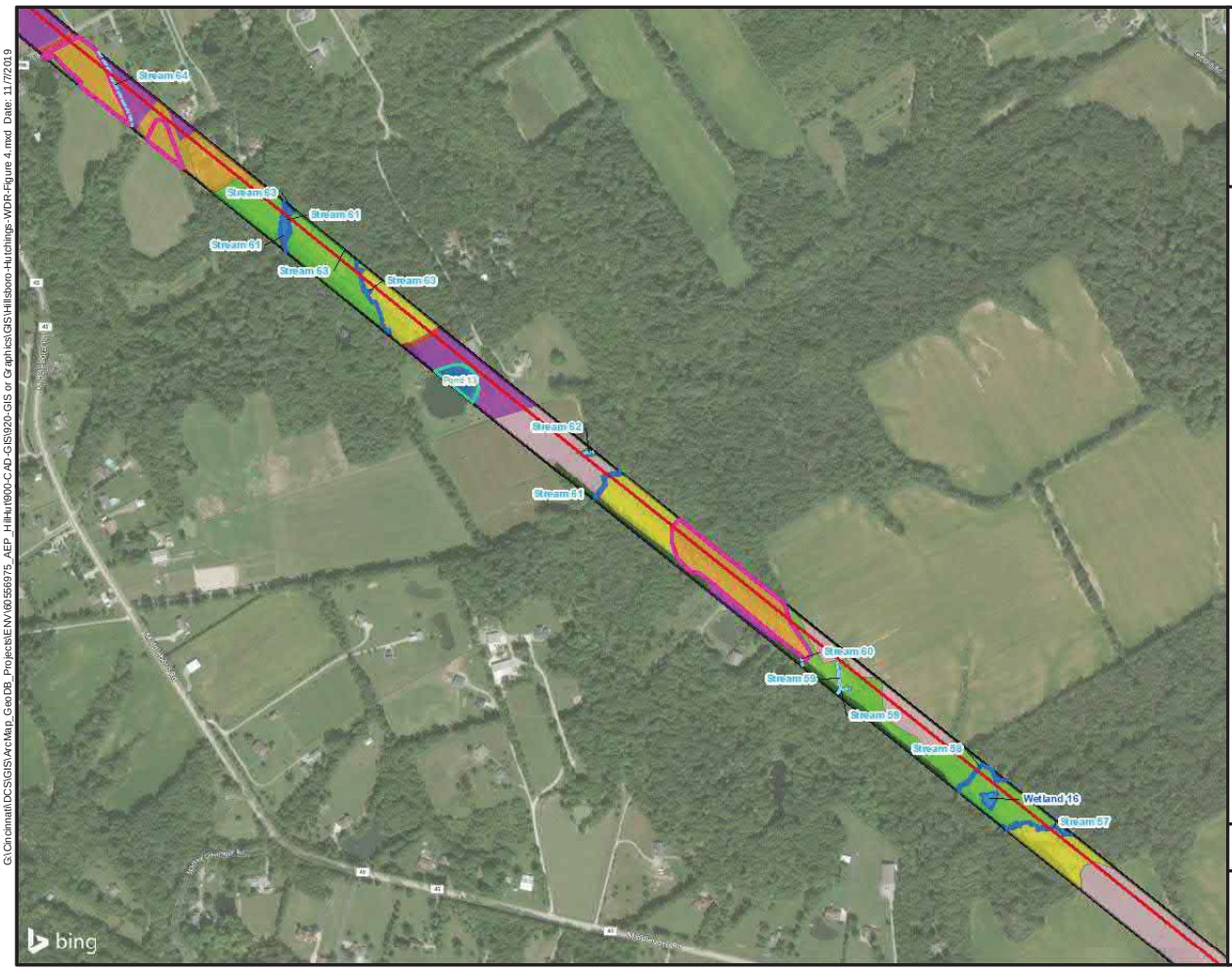

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4U
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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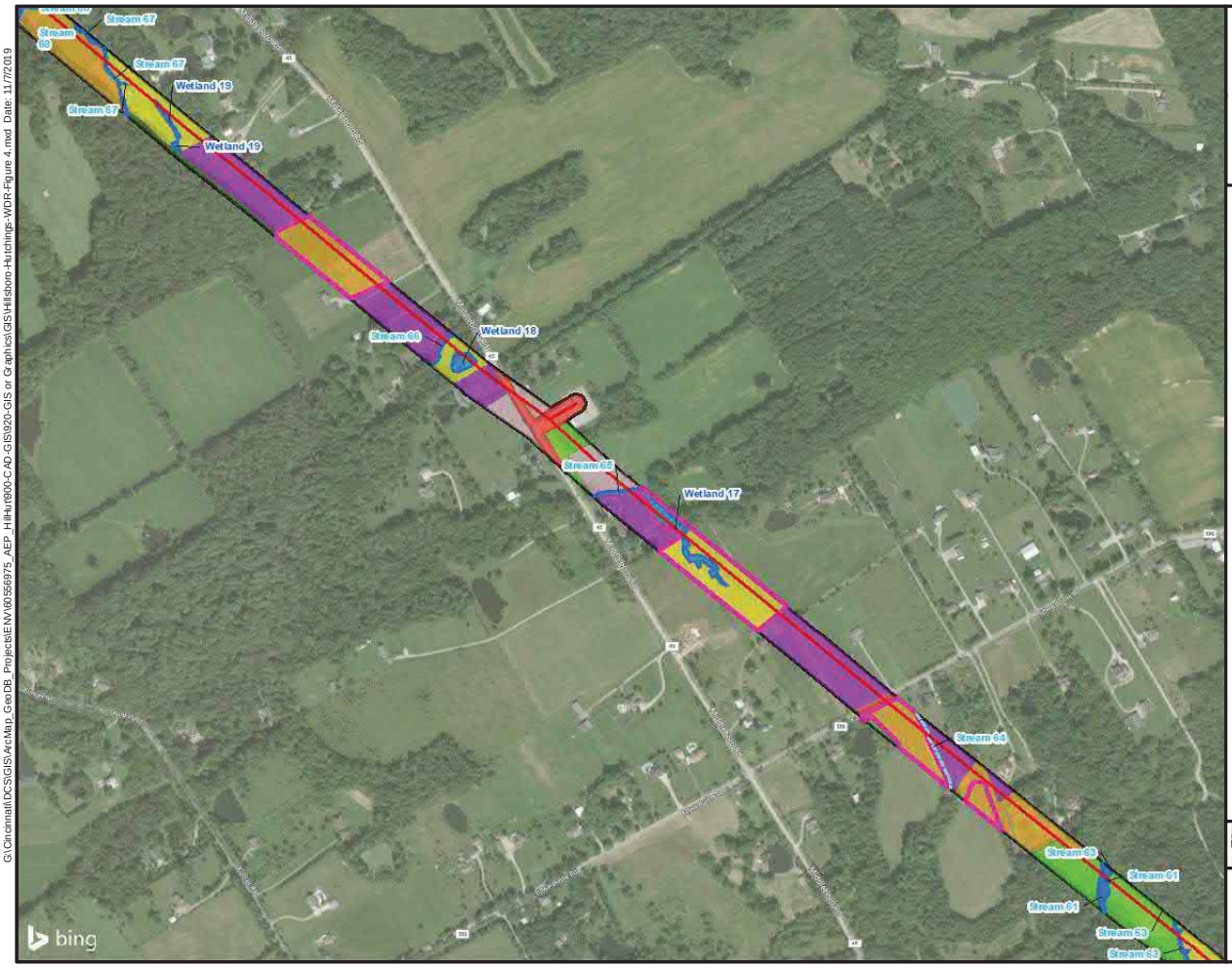

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800
Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4V
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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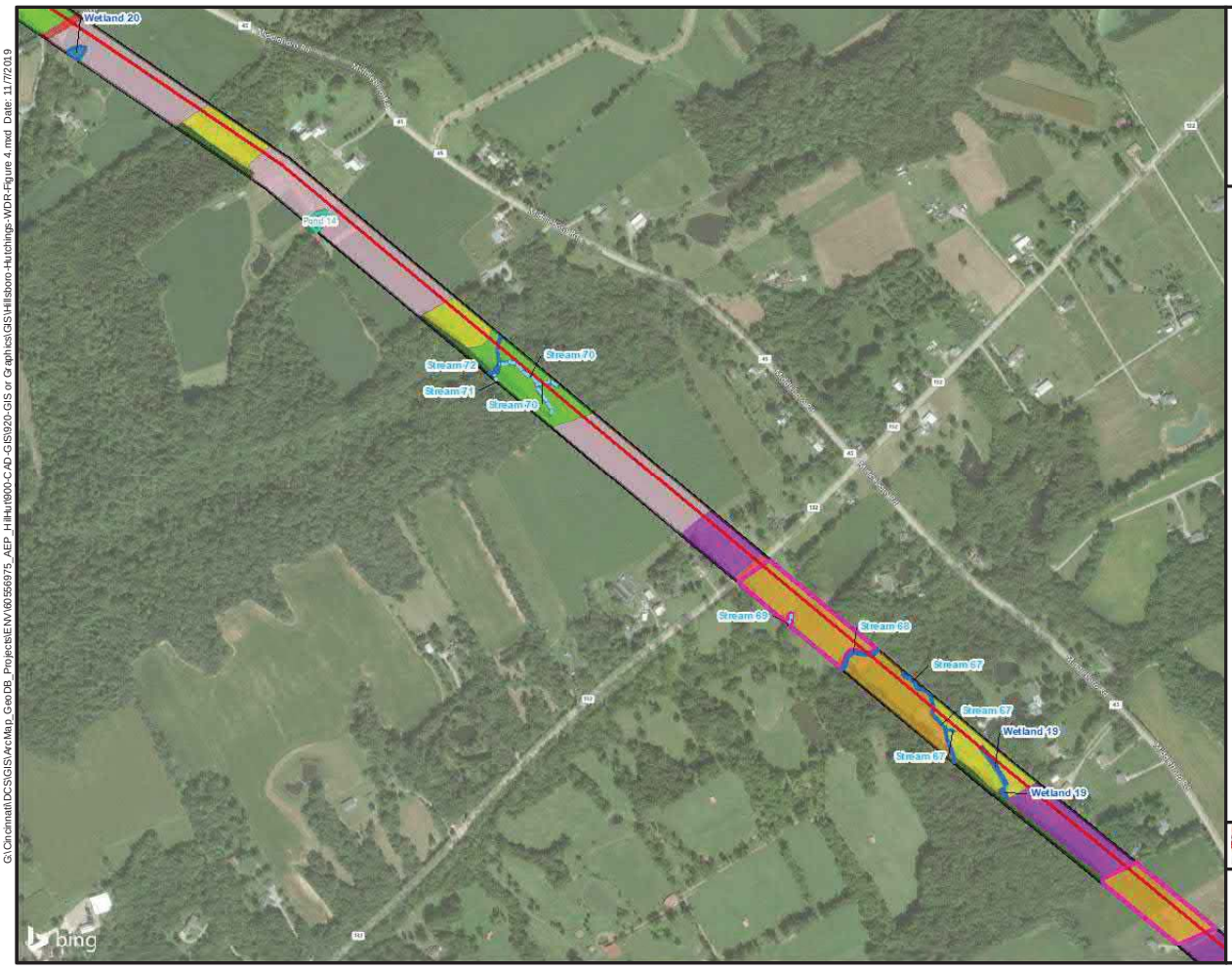

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800
Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4W
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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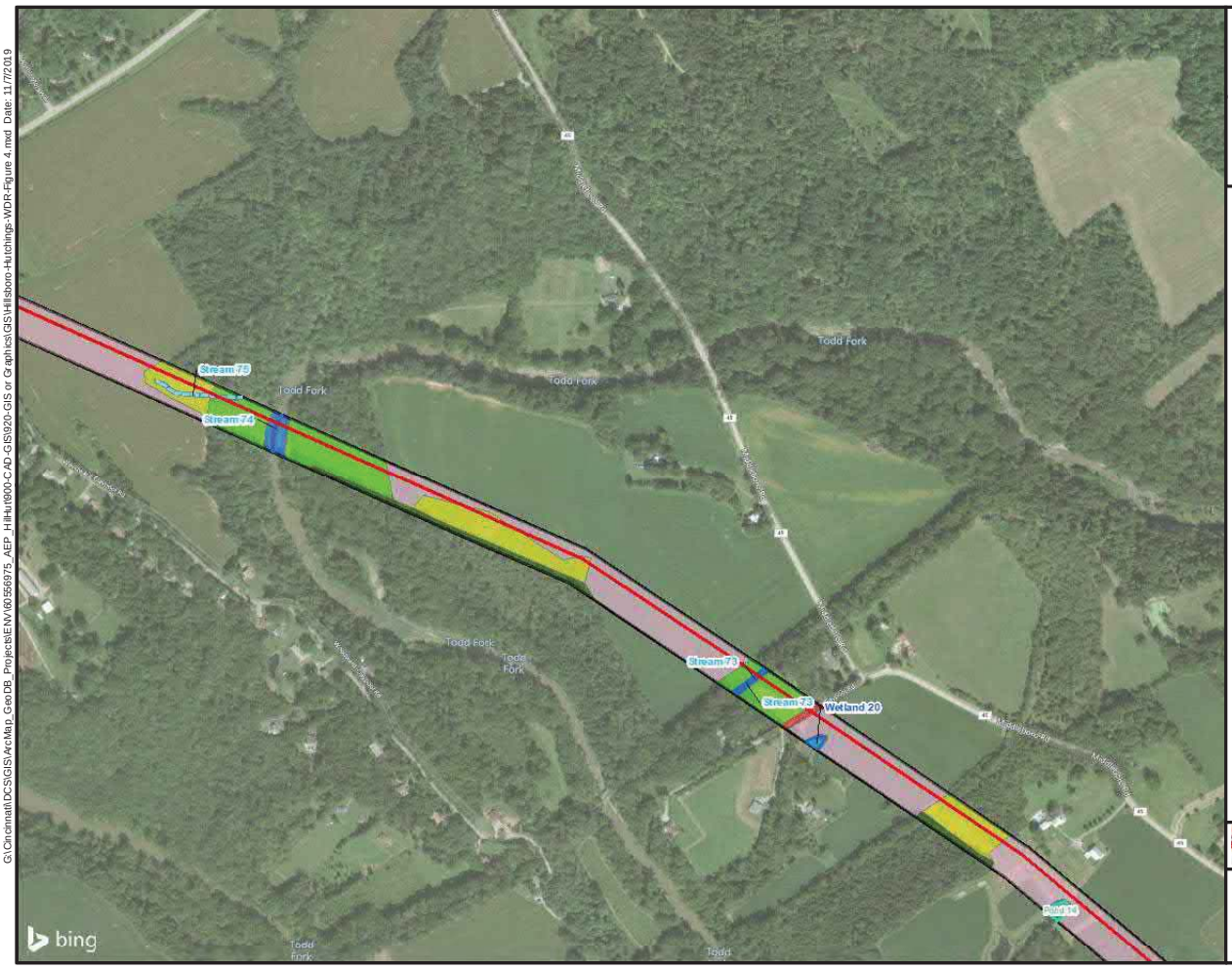


Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Old Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

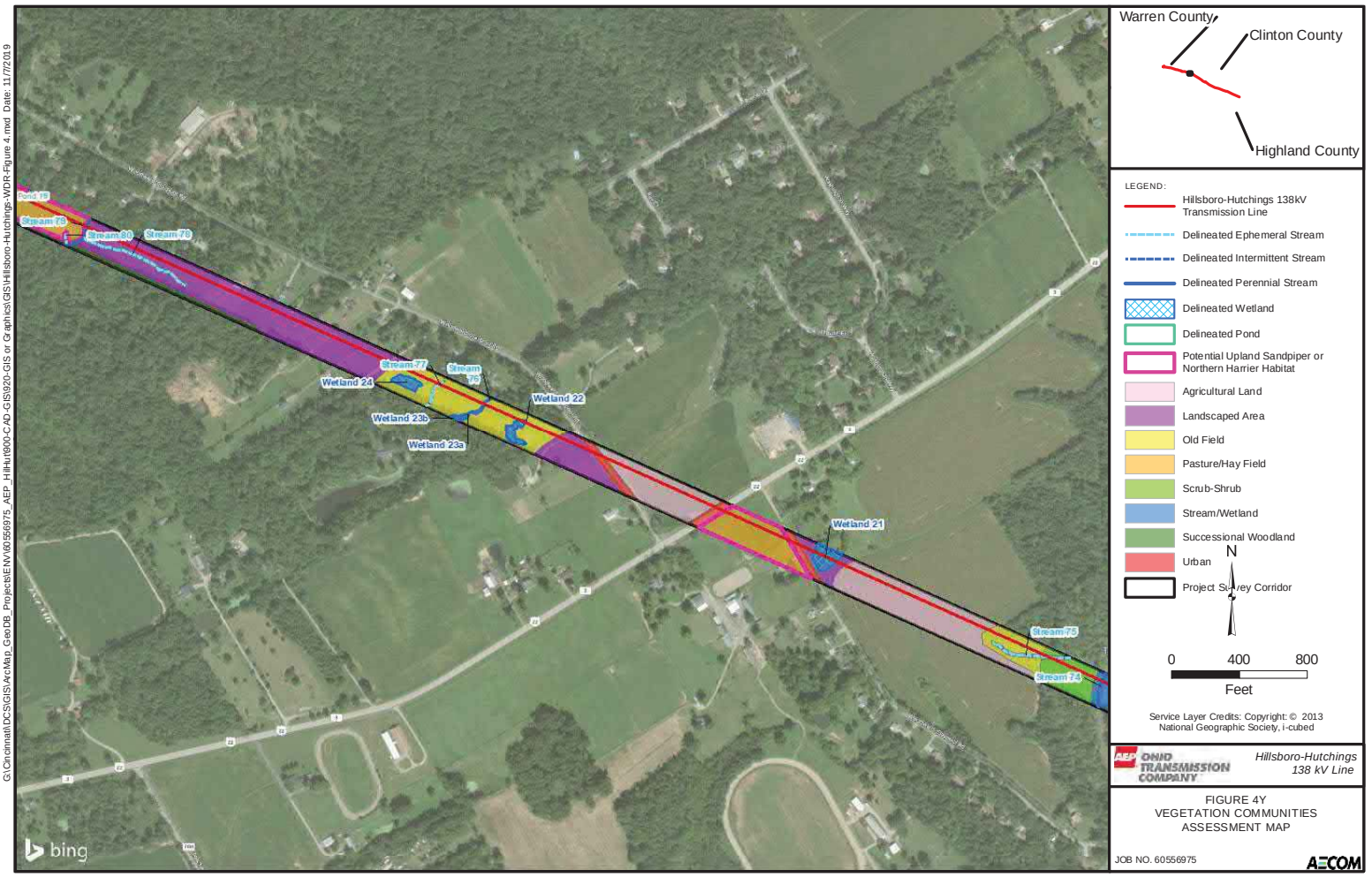
Hillsboro-Hutchings 138 kV Line

FIGURE 4X
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\60556975_AEP_HiHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 4.mxd Date: 11/7/2019



Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800
Feet

AEP OHIO TRANSMISSION COMPANY

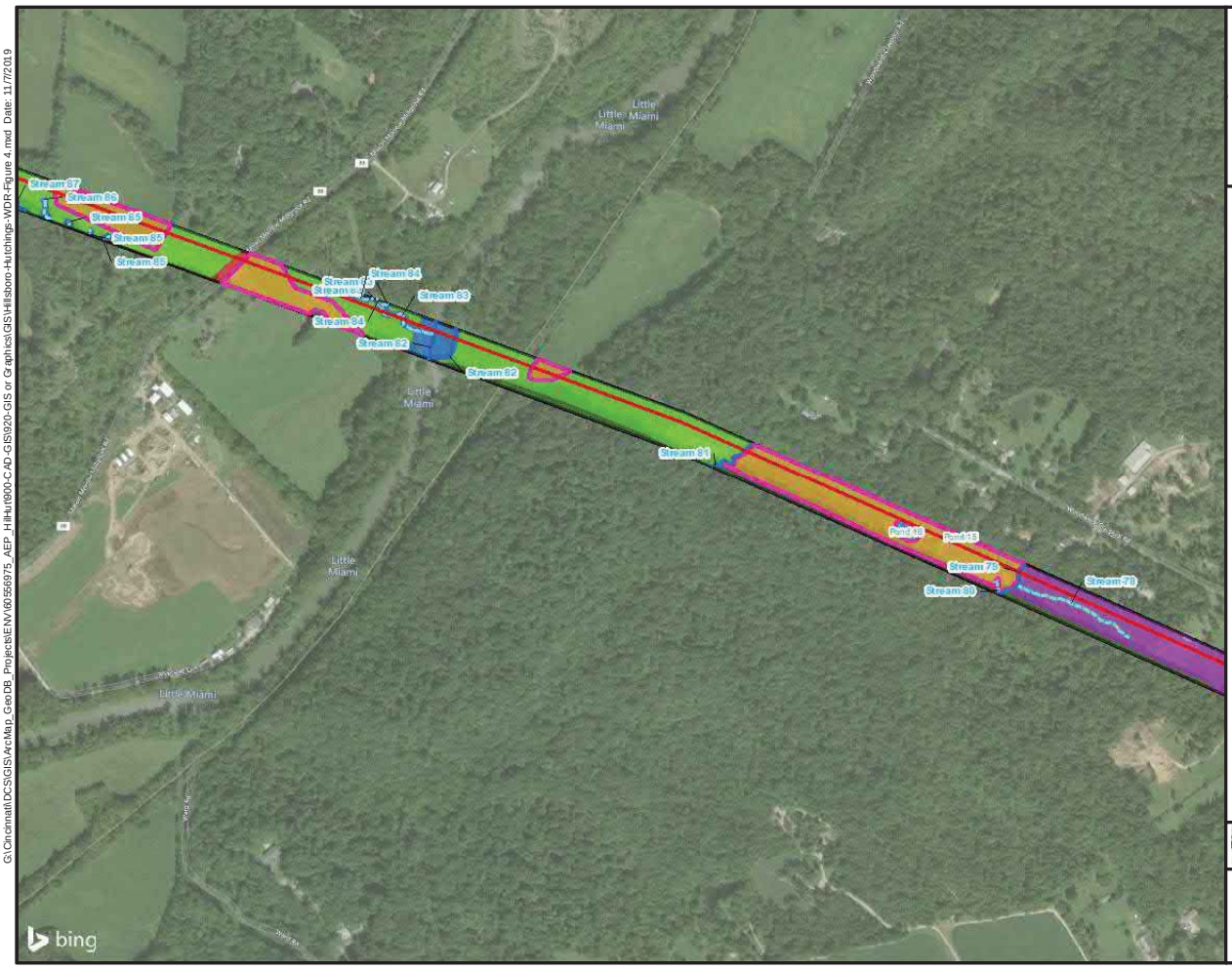
Hillsboro-Hutchings 138 kV Line

FIGURE 4Y
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\V\60556975_AEP_HillHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 4.mxd Date: 11/7/2019



Warren County

Clinton County

Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Landscaped Area
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4Z
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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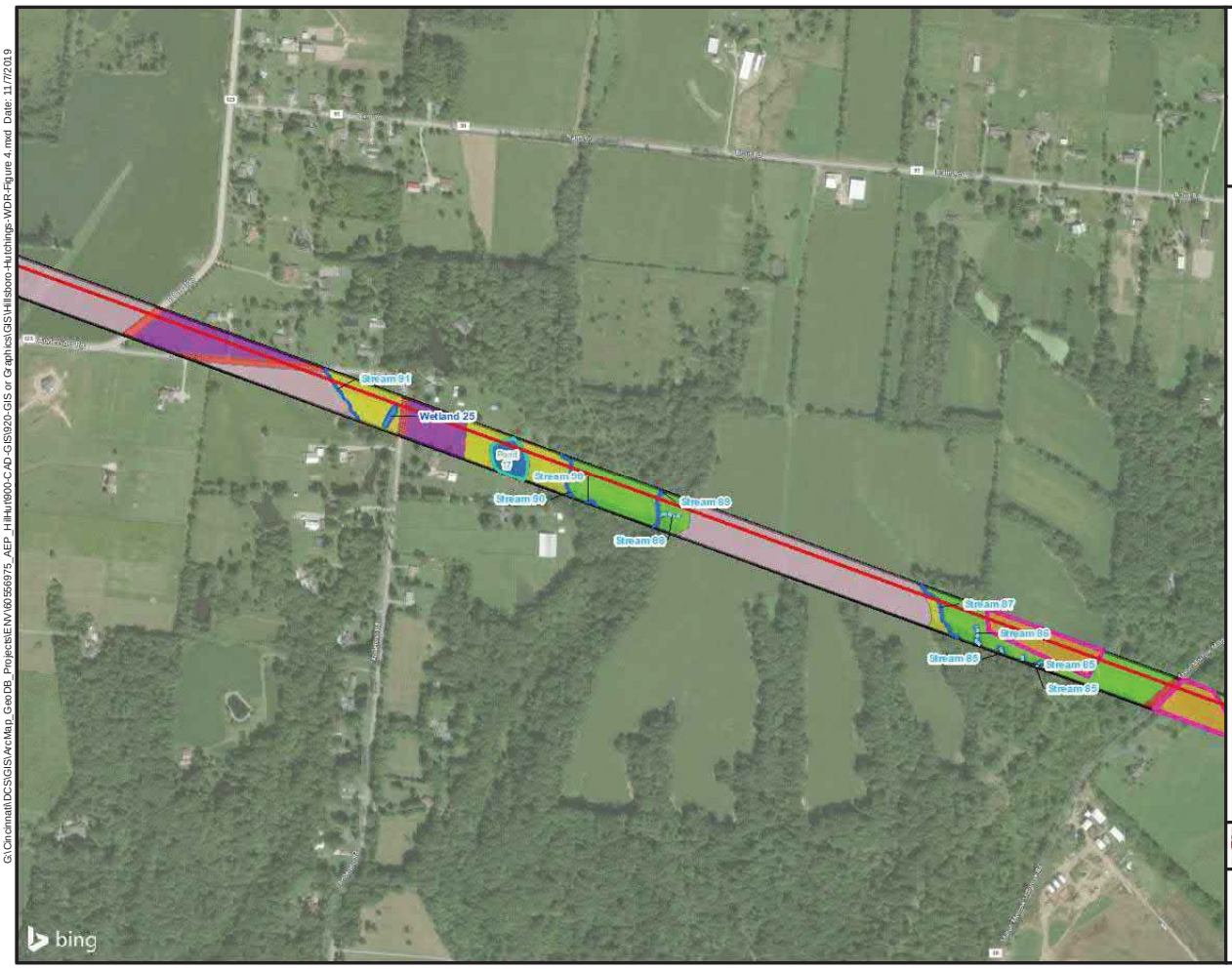

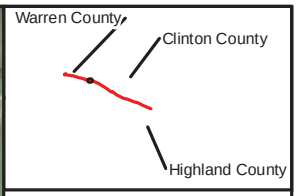

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4AA
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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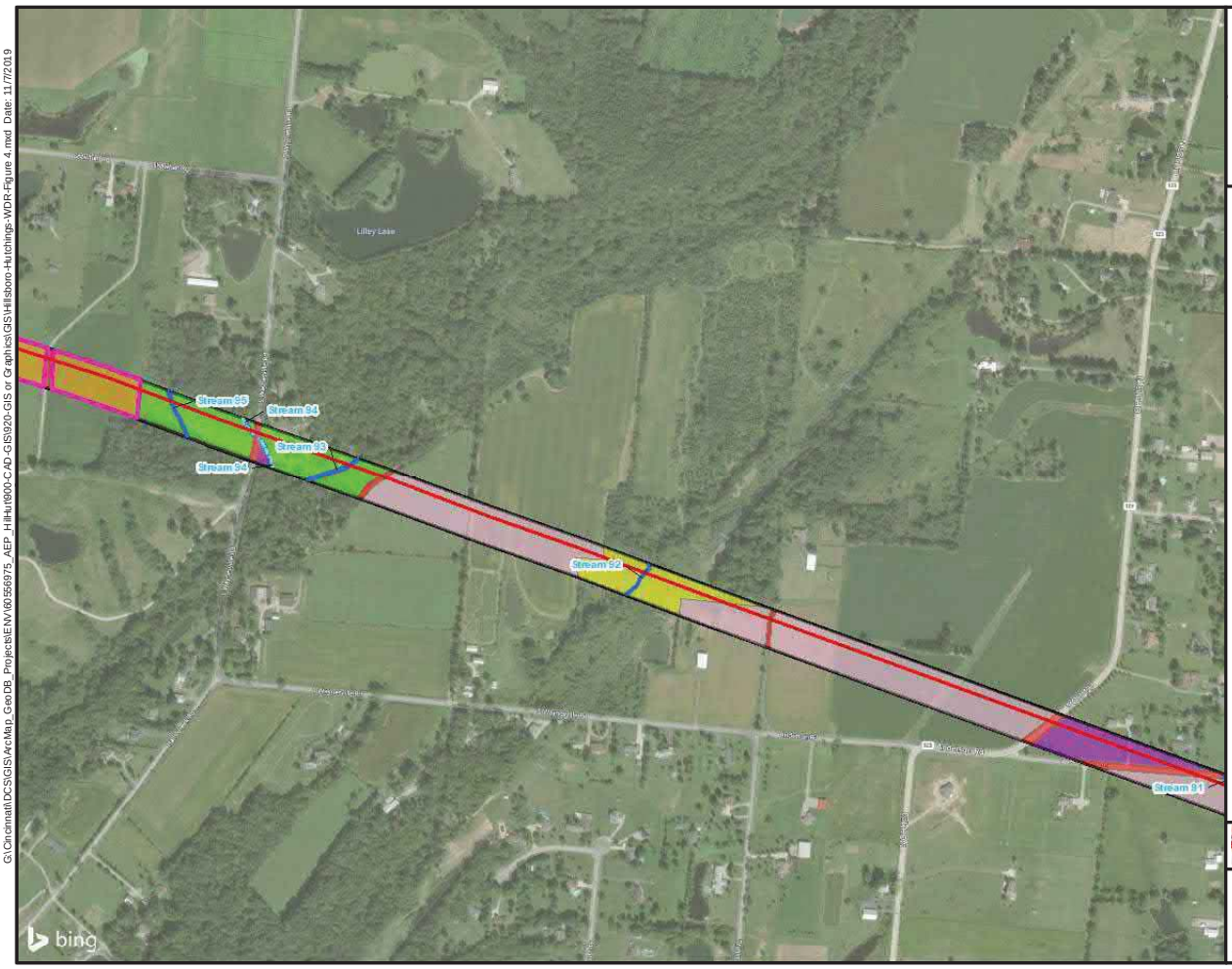

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4BB
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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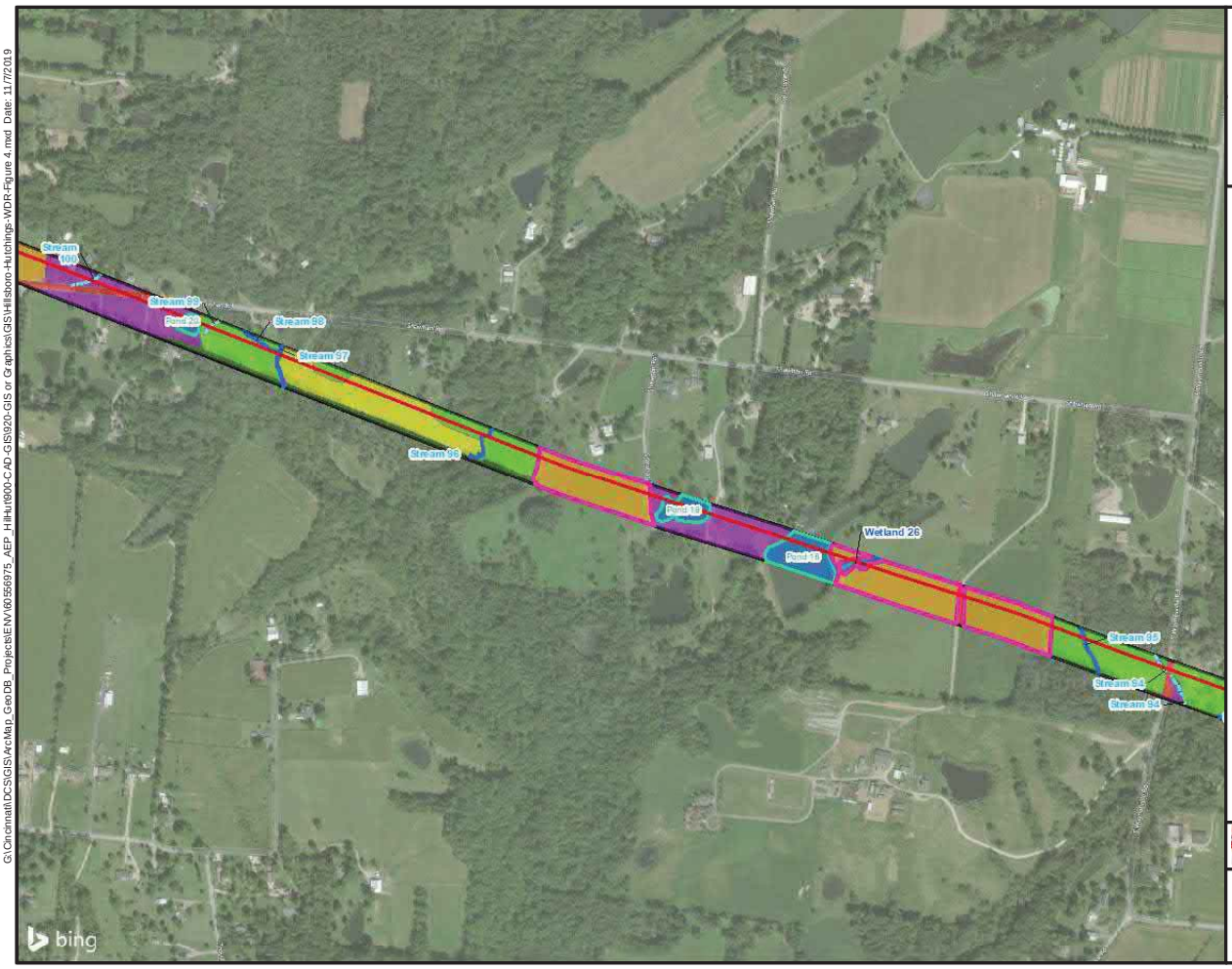
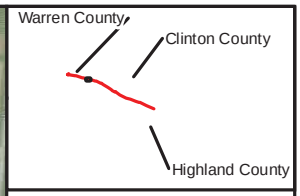




LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

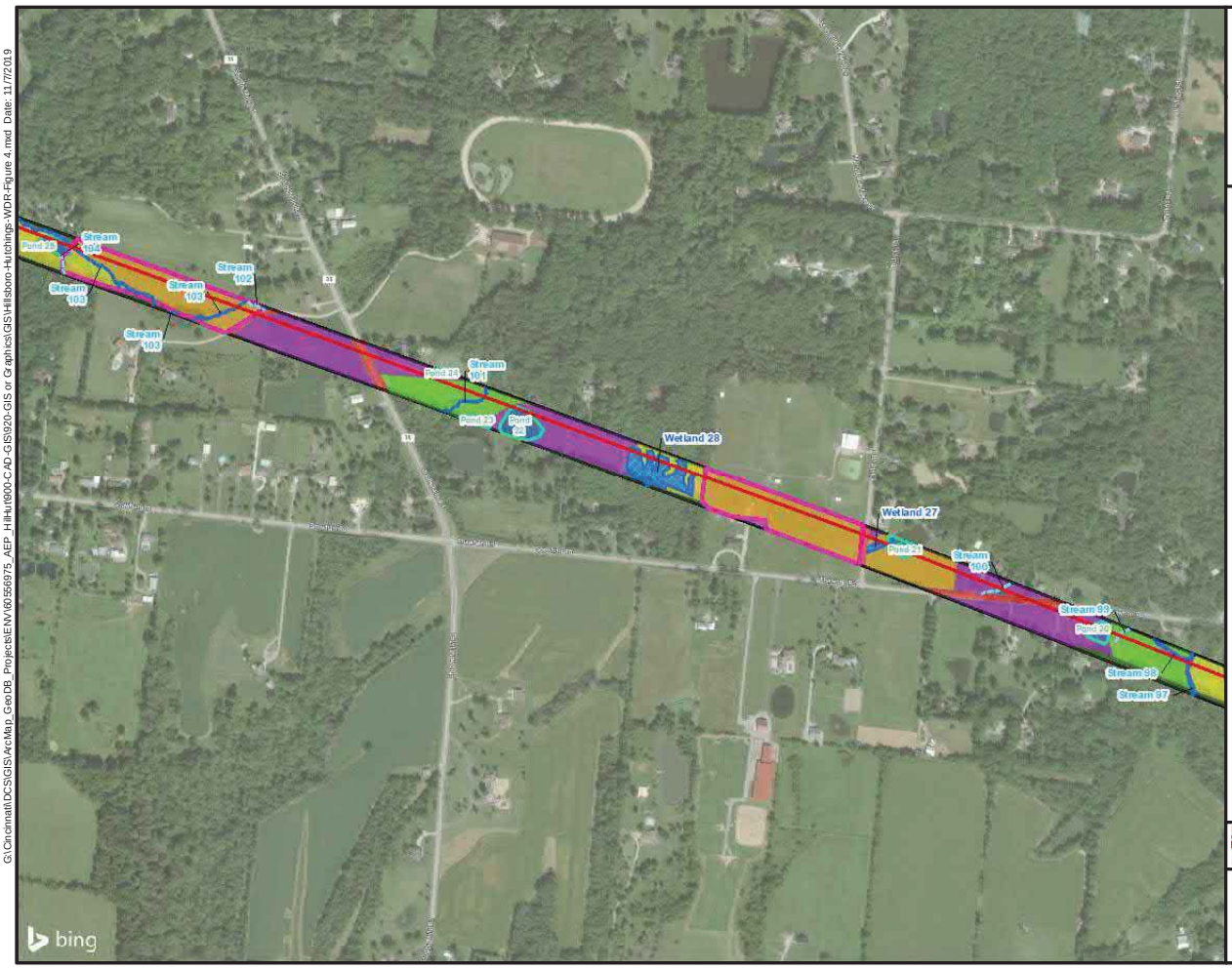
Hillsboro-Hutchings 138 kV Line

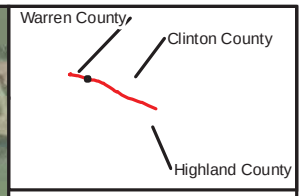
FIGURE 4CC
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\EN\60556975_AEP_HiHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 4.mxd Date: 11/7/2019





LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4DD
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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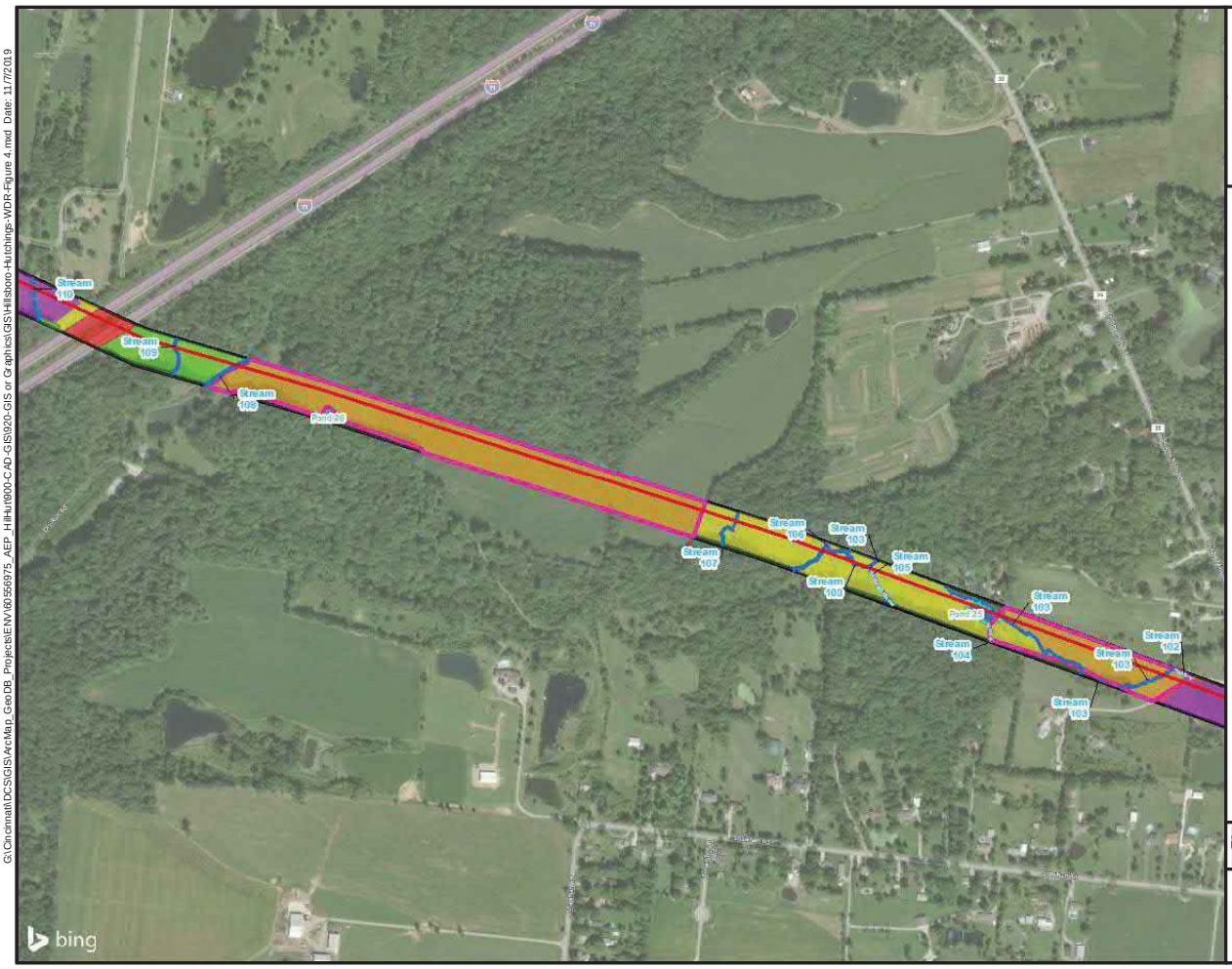

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4EE
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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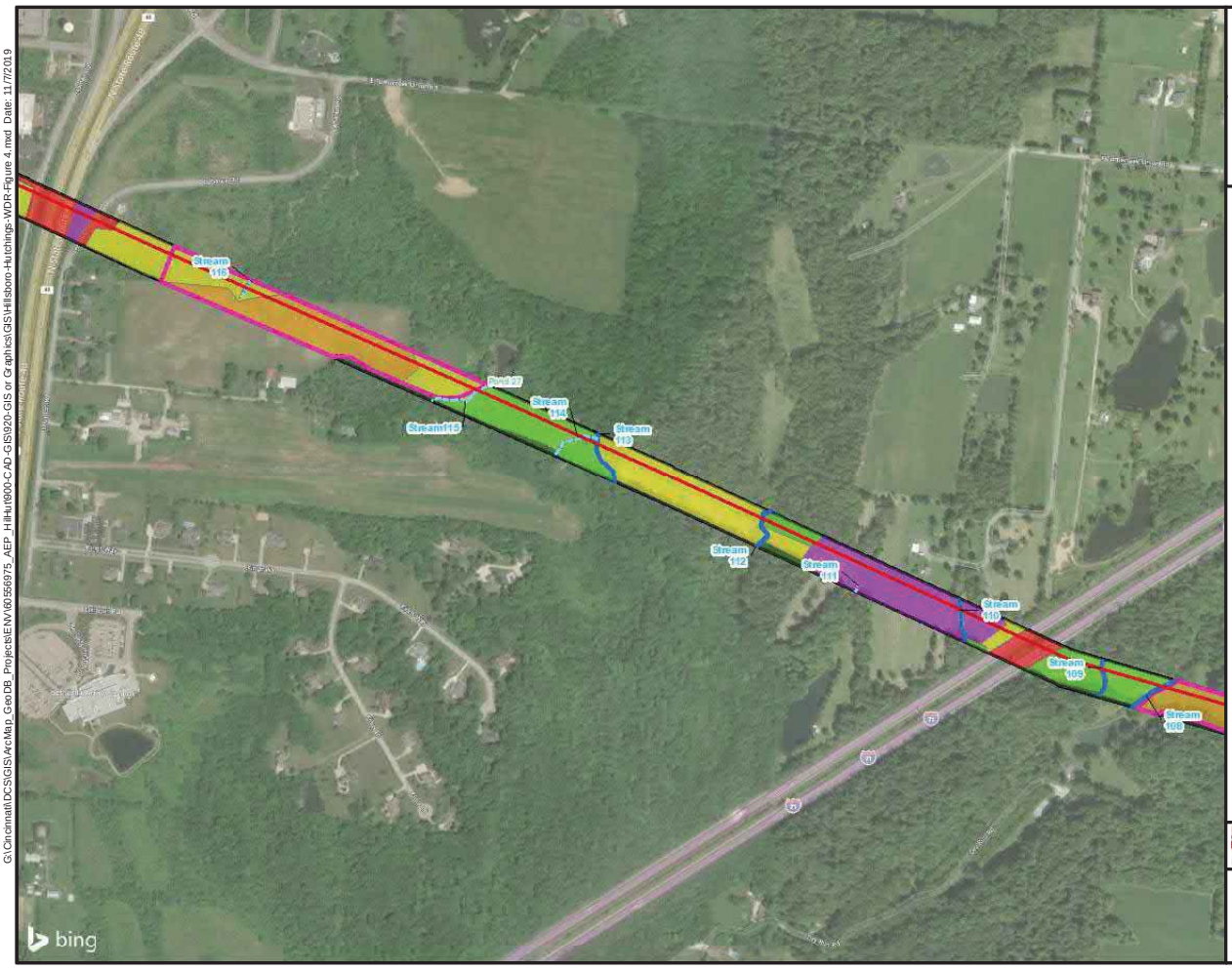

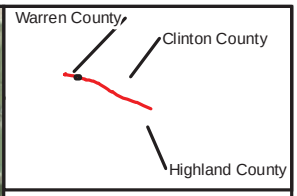

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4FF
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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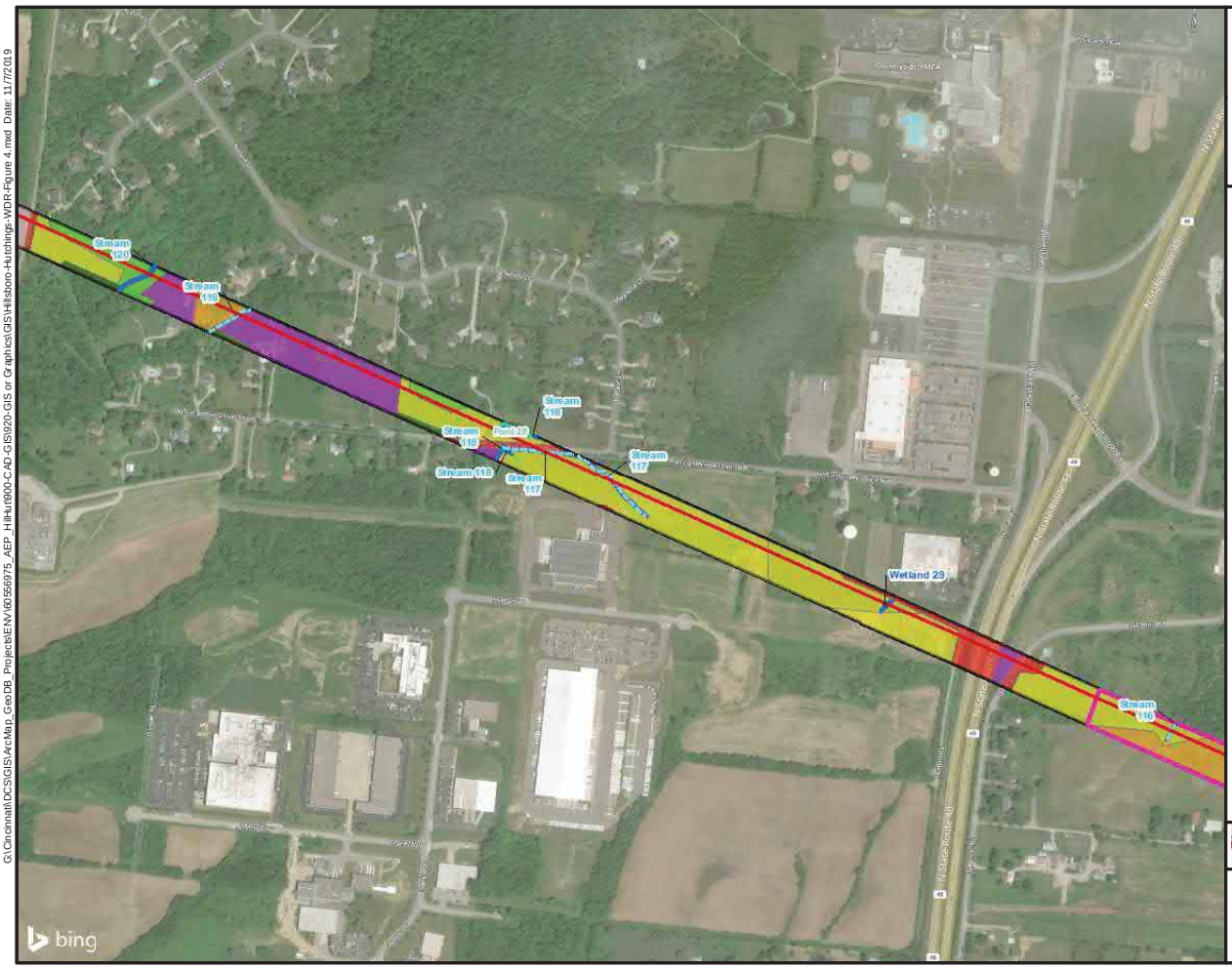

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800
Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4GG
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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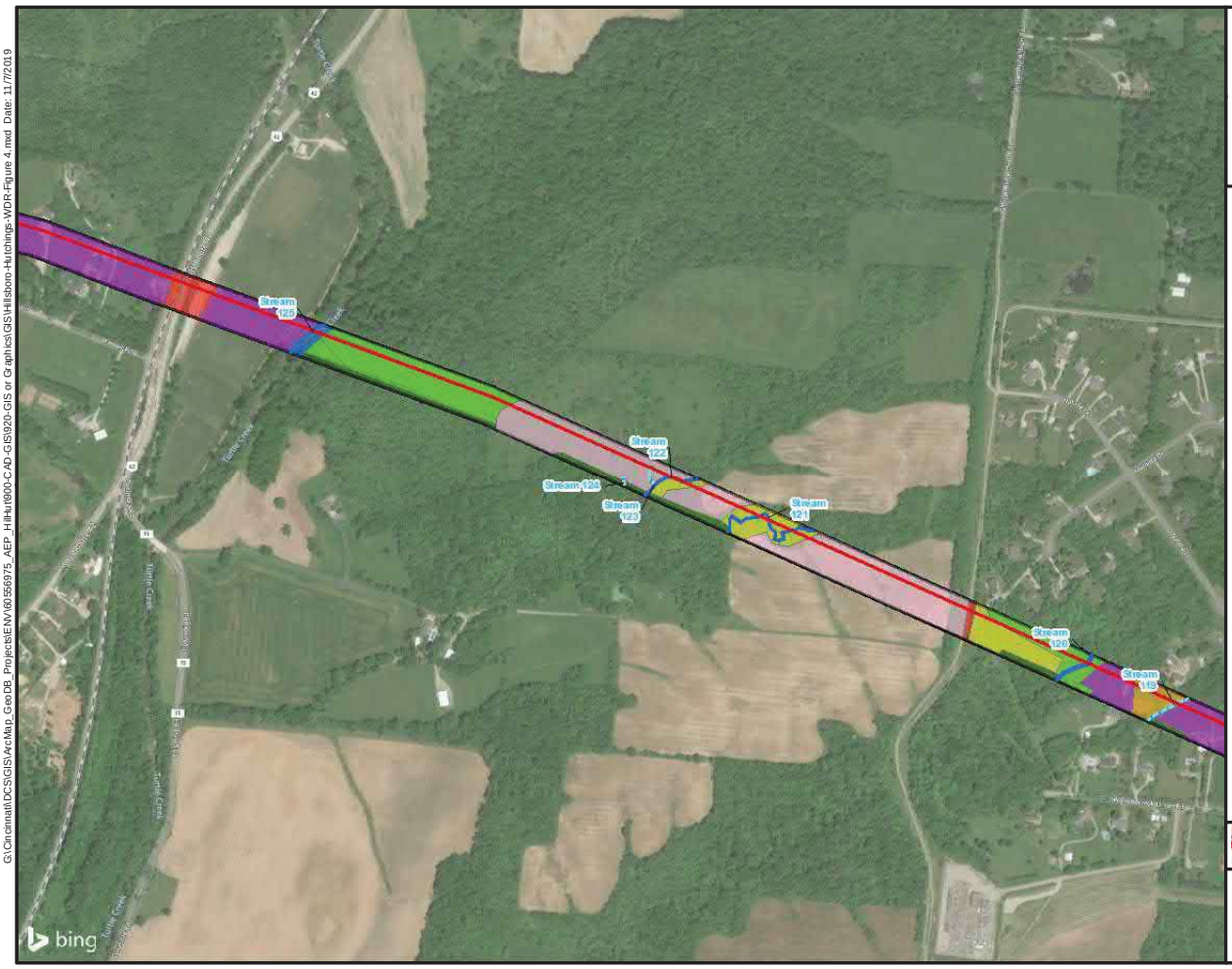

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Agricultural Land
- Landscaped Area
- Old Field
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4HH
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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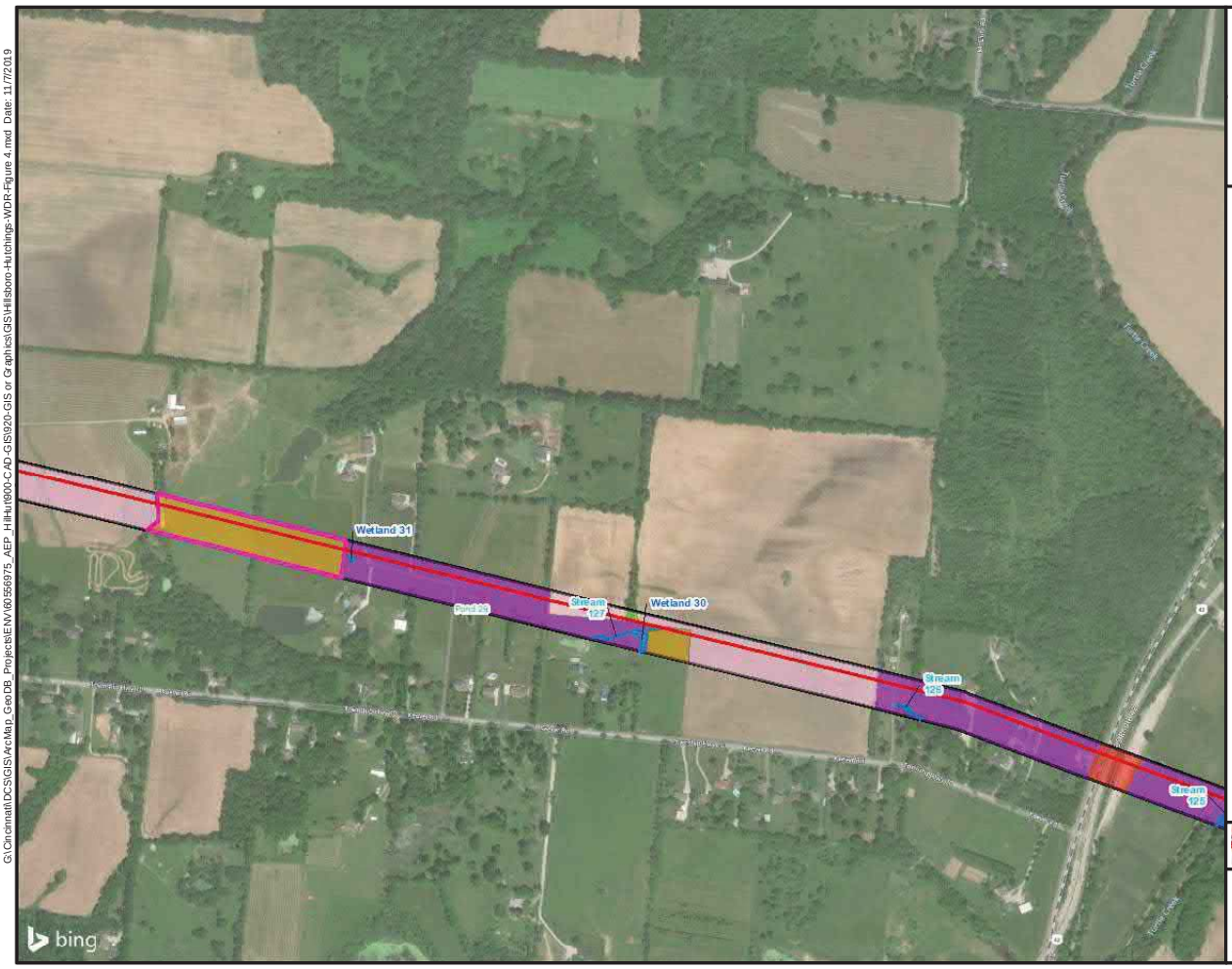

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Landscaped Area
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4II
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

G:\Cincinnati\DCS\GIS\ArcMap_GeoDB_Projects\E:\V\60\556975_AEP_HiHut\900-CAD-GIS\920-GIS or Graphics\GIS\Hillsboro-Hutchings-WDR-Figure 4.mxd Date: 11/7/2019

Warren County
Clinton County
Highland County

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Old Field
- Pasture/Hay Field
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4JJ
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

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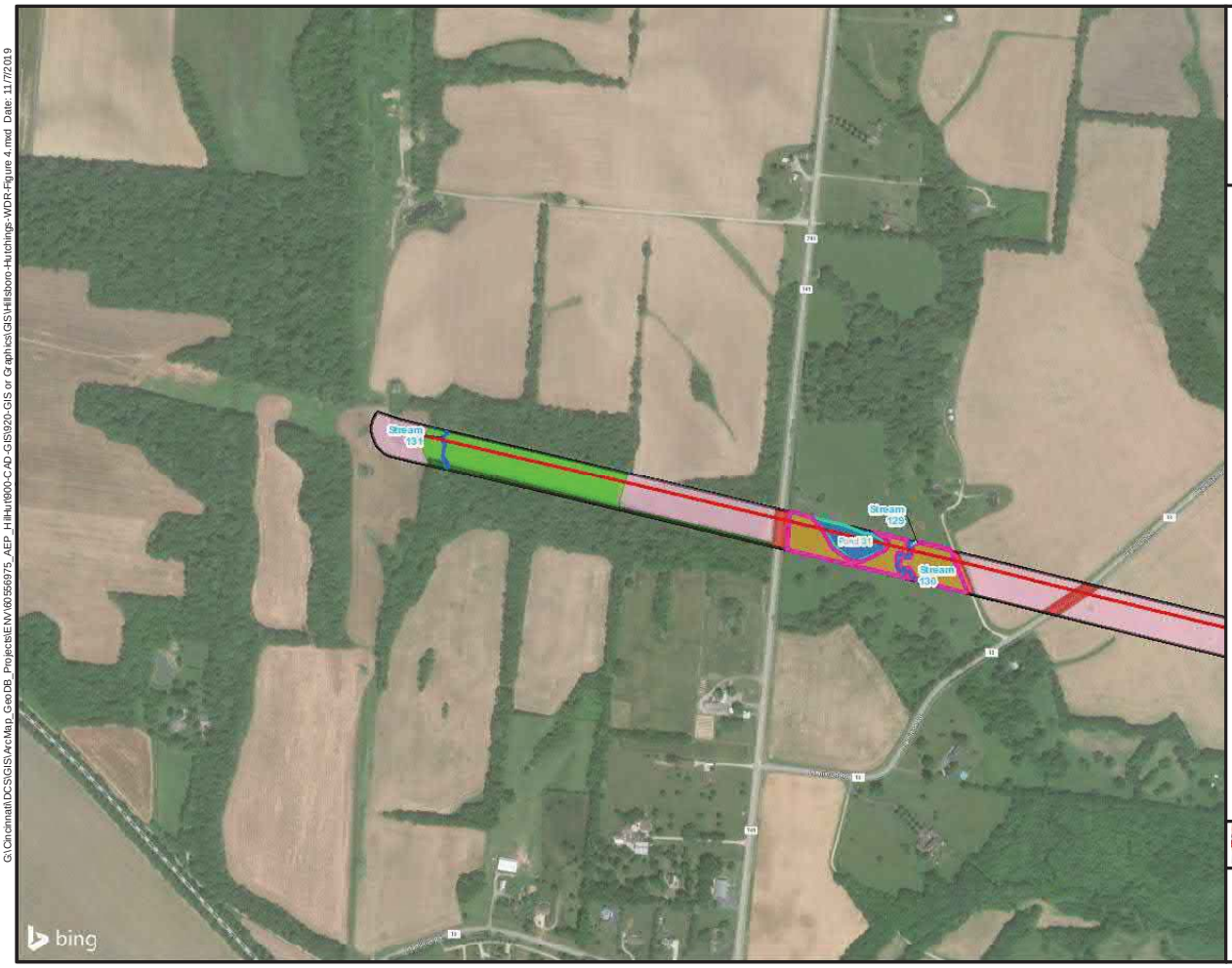

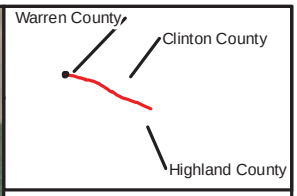

LEGEND:

- Hillsboro-Hutchings 138kV Transmission Line
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Pond
- Potential Upland Sandpiper or Northern Harrier Habitat
- Agricultural Land
- Pasture/Hay Field
- Scrub-Shrub
- Stream/Wetland
- Successional Woodland
- Urban
- Project Survey Corridor

N

0 400 800

Feet

AEP OHIO TRANSMISSION COMPANY

Hillsboro-Hutchings 138 kV Line

FIGURE 4KK
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60556975

AECOM

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS WETLAND & UPLAND FORMS

Wetland 01

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138 kV | City/County: Highland County | Sampling Date: 06-Dec-17

Applicant/Owner: AEP | State: | Sampling Point: **w-aeh-120617-02**

Investigator(s): JTT, AEH | Section, Township, Range: T R

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

Slope: 0.0% / 0.0 ° | Lat.: 39.18082534 | Long.: -83.69447343 | Datum: NAD 83

Soil Map Unit Nam: Clermont silt loam, 0 to 1 percent slopes, (Cle1A) | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of ye: 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 fringe wetland running along hh-aeh-120617-07

VEGETATION - Use scientific names of plants.

	Absolute	Dominant Species?	Rel.Strat	Indicator
Tree Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratu (Plot size:)				
1. Juncus effusus	15	☐	13.6%	OBL
2. Phalaris arundinacea	50	☑	45.5%	FACW
3. Cyperus esculentus	20	☑	18.2%	FACW
4. Scirpus atrovirens	20	☑	18.2%	OBL
5. Solidago canadensis	5	☐	4.5%	FACU
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	110	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test workshee

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 100.0% (A/B)

Prevalence Index workshee

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	110 (A)		195 (B)

Prevalence Index = B/A = 1.773

Hydrophytic Vegetation Indicato

- ☑ **1 - Rapid Test for Hydrophytic Vegetati**
- ☑ **2 - Dominance Test is > 50**
- ☑ **3 - Prevalence Index is ≤3.** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Expla**

[1] **Indicators of hydric soil and wetland hydrology must**

Hydrophytic Vegetation Yes ◉ No ○

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

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

SOIL

Sampling Point: **w-aeh-120617-02**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indic

Depth (inches	Matrix Color (moist		%	Redox Features Color (moist		%	Type [1]	Loc[2]	Texture	Remarks
0-12	10YR	4/4	85	2.5YR	4/8	15	C	M	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining.

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 Muck 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 (A1
- ☐ Dark Surface (S7
- ☐ Iron Manganese Masses (F1
- ☐ Very Shallow Dark Surface (TF1
- ☐ Other (Explain in Remark

[3] Indicators of hydrophytic vegetation and wetland hydrology must be

Restrictive Layer (if observed

Type: _____

Depth (inches): _____

Hydric Soil Present Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicator

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 requir

- ☐ 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): 1

Water Table Present? Yes ◉ No ○ Depth (inches): 12

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Presen Yes ◉ No ○

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

Remarks:

Wetland 02

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 06-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-120617-01**

Investigator(s): JTT, AEH | Section, Township, Range: T R

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

Slope: 0.0% / 0.0 ° | Lat.: 39.18168287 | Long.: -83.69694498 | Datum: NAD 83

Soil Map Unit Nam: Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of ye: 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 at end of hh-aeh-120617-05; cattail dominant

VEGETATION - Use scientific names of plants.

	Absolute	Dominant Species?	Rel.Strat	Indicator
Tree Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratu (Plot size:)				
1. Salix nigra	5	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	5	= Total Cover		
Herb Stratu (Plot size:)				
1. Typha angustifolia	60	☑	65.2%	OBL
2. Juncus effusus	20	☑	21.7%	OBL
3. Cyperus esculentus	10	☐	10.9%	FACW
4. Solidago canadensis	2	☐	2.2%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	92	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test workshee

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 100.0% (A/B)

Prevalence Index workshee

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	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	97 (A)		113 (B)

Prevalence Index = B/A = 1.165

Hydrophytic Vegetation Indicato

- ☑ **1 - Rapid Test for Hydrophytic Vegetati**
- ☑ **2 - Dominance Test is > 50**
- ☑ **3 - Prevalence Index is ≤3.** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Expla**

[1] **Indicators of hydric soil and wetland hydrology must**

Hydrophytic Vegetation Yes ◉ No ○

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

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

SOIL

Sampling Point: **w-aeh-120617-01**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indic

Depth (inches	Matrix Color (moist		%	Redox Features Color (moist		%	Type [1]	Loc [2]	Texture	Remarks
0-12	10YR	4/1	95	10YR	3/6	5	C	PL	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining.

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 Muck 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 (A1
- ☐ Dark Surface (S7
- ☐ Iron Manganese Masses (F1
- ☐ Very Shallow Dark Surface (TF1
- ☐ Other (Explain in Remark

[3] Indicators of hydrophytic vegetation and wetland hydrology must be

Restrictive Layer (if observed

Type: _____

Depth (inches): _____

Hydric Soil Present Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicator

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 requir

- ☐ 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): 2

Water Table Present? Yes ◉ No ○ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Presen Yes ◉ No ○

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

Remarks:

Wetland 03

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-120717-05**

Investigator(s): JTT, AEH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Footslope | Local relief (concave, convex, none): tussocks

Slope: 0.0% 0.0 ° | Lat.: 39.189912619 | Long.: -83.71537726 | Datum: NAD 83

Soil Map Unit Name: Pits, quarry (Pq) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Typha angustifolia	35	☑ 30.4%	OBL
2. Juncus tenuis	30	☑ 26.1%	FAC
3. Carex frankii	30	☑ 26.1%	OBL
4. Scirpus atrovirens	20	☐ 17.4%	OBL
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	115	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		175 (B)

Prevalence Index = B/A = 1.522

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.)

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

SOIL

Sampling Point: **w-aeh-120717-05**

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
0-2	10YR	2/2	100						Silt Loam	
2-10	10YR	6/8	80	5YR	5/8	20	C	M	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 2

Water Table Present? Yes ◉ No ○ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 04

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-120717-04**

Investigator(s): JTT, AEH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): flat

Slope: 0.0% 0.0 ° | Lat.: 39.1903665 | Long.: -83.7162713 | Datum: NAD 83

Soil Map Unit Name: Pits, quarry (Pg) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Typha angustifolia	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

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.)

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

SOIL

Sampling Point: **w-aeh-120717-04**

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
0-12	10YR	7/3	80	2.5YR	5/8	20	C	M	Silty Clay	
12-18	10B	7/	100						Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

Water Table Present? Yes ◉ No ○ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 05

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **W-aeh-120717-03**

Investigator(s): JTT, AEH | Section, Township, Range: S ____ T ____ R ____

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

Slope: 0.0% 0.0 ° | Lat.: 39.1918478 | Long.: -83.7200707 | Datum: NAD 83

Soil Map Unit Name: Pits, quarry (Pg) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
PEM

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	0
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Phragmites australis	35	☑ 30.4%	FACW
2. Andropogon gerardii	35	☑ 30.4%	FAC
3. Typha angustifolia	30	☑ 26.1%	OBL
4. Juncus torreyi	15	☐ 13.0%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	115	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	50	x 2 =	100
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	115 (A)		235 (B)

Prevalence Index = B/A = 2.043

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.)

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

SOIL

Sampling Point: **W-aeh-120717-03**

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
0-12	10YR	7/3	80	2.5YR	5/8	20	C	M	Silty Clay	
12-16	10B	7/	100						Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 10

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 06

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-120717-02**

Investigator(s): JTT, AEH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): flat

Slope: 0.0% 0.0 ° | Lat.: 39.191811475 | Long.: -83.7206699 | Datum: NAD 83

Soil Map Unit Name: Pits, quarry (Pg) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Phragmites australis	100	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= 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: 100.0% (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 = 2.000

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.)

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

SOIL

Sampling Point: **w-aeh-120717-02**

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
0-4	2.5Y	7/3	100						sand	
4-6	2.5Y	7/4	100						Sand	
6-15	10YR	5/1	100						Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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):	6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 07

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Highland County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-120717-01**

Investigator(s): JTT, AEH | Section, Township, Range: S ____ T ____ R ____

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

Slope: 0.0% 0.0 ° | Lat.: 39.19386113 | Long.: -83.72479033 | Datum: NAD 83

Soil Map Unit Name: Pits, quarry (Pg) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
PEM wetland adjacent to pond-aeh-120717-01; cattail dominant

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Cornus drummondii	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Typha angustifolia	100	☑ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	100	x 1 =	100
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		130 (B)

Prevalence Index = B/A = 1.182

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.)

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

SOIL

Sampling Point: **w-aeh-120717-01**

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
0-3	10YR	3/1	100						Silty Clay	
3-12	10YR	5/6	85	7.5YR	6/8	15	C	M	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 12

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 08

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hilsboro-Hutchingson City/County: Highland Sampling Date: 12-Dec-17

Applicant/Owner: aep State: OH Sampling Point: **w-aeh-20171212-01**

Investigator(s): aeh, pjr Section, Township, Range: S T R

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

Slope: 0.0% 0.0 ° Lat.: 39.224607475 Long.: -83.796303233 Datum: NAD 83

Soil Map Unit Name: Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1) NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Juncus effusus	25	☑	38.5%	OBL
2. Cyperus esculentus	20	☑	30.8%	FACW
3. Carex frankii	10	☐	15.4%	OBL
4. Solidago canadensis	10	☐	15.4%	FACU
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	65	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	35	x 1 =	35
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	65 (A)		115 (B)

Prevalence Index = B/A = 1.769

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.)

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

SOIL

Sampling Point: **w-aeh-20171212-01**

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
0-3	10YR	3/1	95	10YR	5/6	5	C	M	Silty Clay Loam	
3-18	10YR	4/1	85	10YR	5/6	15	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 10

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 09

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchingson | City/County: Clinton | Sampling Date: 12-Dec-17

Applicant/Owner: AEP | State: Oh | Sampling Point: **w-aeh-20171212-02**

Investigator(s): aeh, pjr | Section, Township, Range: S ____ T ____ R ____

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

Slope: 0.0% 0.0 ° | Lat.: 39.238328827 | Long.: -83.834448748 | Datum: NAD 83

Soil Map Unit Name: Clermont silt loam, 0 to 1 percent slopes (Cle1A) | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Typha angustifolia	50	☑ 55.6%	OBL
2. Juncus effusus	20	☑ 22.2%	OBL
3. Echinochloa crus-galli	15	☐ 16.7%	FACW
4. Xanthium strumarium	5	☐ 5.6%	FAC
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	90	= Total Cover	
Woody Vine Stratu (Plot size: ____)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	15	x 2 =	30
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		115 (B)

Prevalence Index = B/A = 1.278

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.)

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

SOIL

Sampling Point: **w-aeh-20171212-02**

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
0-15	10YR	4/1	85	10YR	5/6	15	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 10

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hilsboro-Hutchingson City/County: Highland Sampling Date: 13-Dec-17

Applicant/Owner: aep State: Oh Sampling Point: **w-aeh-20171213-01**

Investigator(s): aeh,pjr Section, Township, Range: S T R

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

Slope: 0.0% 0.0 ° Lat.: 39.24225304 Long.: -83.845337343 Datum: NAD 83

Soil Map Unit Name: Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1) NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Juncus effusus	25	☑	38.5%	OBL
2. Scirpus atrovirens	20	☑	30.8%	OBL
3. Typha angustifolia	20	☑	30.8%	OBL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	65	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

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.)

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

SOIL

Sampling Point: **w-aeh-20171213-01**

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
0-15	10YR	3/1	90	10YR	5/6	10	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 2

Water Table Present? Yes ◉ No ○ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 11

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hilsboro-Hutchingson City/County: Clinton Sampling Date: 13-Dec-17

Applicant/Owner: aep State: Oh Sampling Point: **w-aeh-20171213-02**

Investigator(s): aeh,pjr Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): flat

Slope: 0.0% 0.0 ° Lat.: 39.252811642 Long.: -83.871576836 Datum: NAD 83

Soil Map Unit Name: Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1) NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	0
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Juncus effusus	30	☑	46.2%	OBL
2. Phalaris arundinacea	15	☑	23.1%	FACW
3. Carex frankii	10	☐	15.4%	OBL
4. Lysimachia terrestris	10	☐	15.4%	OBL
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	65	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
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:	65 (A)		80 (B)

Prevalence Index = B/A = 1.231

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.)

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

SOIL

Sampling Point: **w-aeh-20171213-02**

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
0-15	10YR	3/1	95	10YR	5/4	5	C	M	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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:

Wetland 12

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hilsboro-Hutchingson City/County: Clinton Sampling Date: 13-Dec-17

Applicant/Owner: aep State: OH Sampling Point: **w-aeh-20171213-03**

Investigator(s): aeh,pjr Section, Township, Range: S T R

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

Slope: 0.0% 0.0 ° Lat.: 39.2697069 Long.: -83.9118315 Datum: NAD 83

Soil Map Unit Name: (SmA) NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1. Cornus alba	15	☑	100.0%	FACW
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	15	= Total Cover		
Herb Stratum (Plot size:)				
1. Phalaris arundinacea	85	☑	89.5%	FACW
2. Juncus effusus	10	☐	10.5%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	95	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
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:	110 (A)		210 (B)

Prevalence Index = B/A = 1.909

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.)

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

SOIL

Sampling Point: **w-aeh-20171213-03**

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
0-14	10YR	3/1	95	10YR	4/6	5	D	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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:

Wetland 13

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: AEP hillsboro-hutchingson City/County: Clinton Sampling Date: 13-Dec-17

Applicant/Owner: AEP State: OH Sampling Point: **w-aeh-20171213-04**

Investigator(s): aeh, pjr Section, Township, Range: S T R

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

Slope: 0.0% 0.0 ° Lat.: 39.2818366 Long.: -83.93383215 Datum: NAD 83

Soil Map Unit Name: Cle1A1 NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Typha angustifolia	100	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

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.)

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

SOIL

Sampling Point: **w-aeh-20171213-04**

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
0-8	10YR	4/1	90	10YR	5/8	10	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 7

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 14

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hilsboro-Hutchingson City/County: Clinton Sampling Date: 13-Dec-17

Applicant/Owner: aep State: Oh Sampling Point: **w-aeh-20171213-05**

Investigator(s): aeh,pjr Section, Township, Range: S T R

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

Slope: 0.0% 0.0 ° Lat.: 39.295799 Long.: -83.9581746 Datum: NAD 83

Soil Map Unit Name: (WsS1A1) NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Typha angustifolia	45	☑ 56.3%	OBL
2. Echinochloa crus-galli	35	☑ 43.8%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	80	= Total Cover	
Woody Vine Stratu (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		115 (B)

Prevalence Index = B/A = 1.438

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.)

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

SOIL

Sampling Point: **w-aeh-20171213-05**

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
0-15	10YR	4/1	90	10YR	5/8	10	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

Water Table Present? Yes ◉ No ○ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 15

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 14-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121417-02**

Investigator(s): JBL,JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.318823 | Long.: -83.992653 | Datum: NAD 83

Soil Map Unit Name: JoR1B1 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus tenuis	40	[x] 40.0%	FAC
2. Carex vulpinoidea	25	[x] 25.0%	FACW
3. Eupatorium perfoliatum	15	[ ] 15.0%	OBL
4. Dichanthelium clandestinum	20	[x] 20.0%	FACW
5.	0	[ ] 0.0%	
6.	0	[ ] 0.0%	
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	45	x 2 =	90
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		225 (B)

Prevalence Index = B/A = 2.250

Hydrophytic Vegetation Indicators:

- [ ] **1 - Rapid Test for Hydrophytic Vegetation**
- [x] **2 - Dominance Test is > 50%**
- [x] **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.)

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

SOIL

Sampling Point: **w-jbl-121417-02**

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
0-14	7.5YR	5/1	90	7.5YR	4/6	10	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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:

			Depth (inches):
Surface Water Present?	Yes ○	No ◉	
Water Table Present?	Yes ◉	No ○	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	5

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 16

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 14-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121417-01**

Investigator(s): JBL,JTT | Section, Township, Range: S 0 T 0 R 0

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 39.327232 | Long.: -84.007096 | Datum: NAD 83

Soil Map Unit Name: HiD2 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.		[ ] 0.0%	
2.		[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Scirpus atrovirens	5	[ ] 4.9%	OBL
2. Agrostis stolonifera	15	[ ] 14.6%	FACW
3. Apocynum cannabinum	5	[ ] 4.9%	FAC
4. Cyperus esculentus	10	[ ] 9.7%	FACW
5. Festuca arundinacea	20	[✓] 19.4%	FACU
6. Juncus effusus	8	[ ] 7.8%	OBL
7. Carex vulpinoidea	20	[✓] 19.4%	FACW
8. Dichanthelium clandestinum	20	[✓] 19.4%	FACW
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	103	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	13	x 1 =	13
FACW species	65	x 2 =	130
FAC species	5	x 3 =	15
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	103 (A)		238 (B)

Prevalence Index = B/A = 2.311

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.)

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

SOIL

Sampling Point: **w-jbl-121417-01**

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
0-3	10YR	4/3	95	10YR	4/6	5	C		Loam	
3-14	10YR	4/2	80	10YR	4/6	20	C		Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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:

			Depth (inches):
Surface Water Present?	Yes ○	No ◉	
Water Table Present?	Yes ◉	No ○	8
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 13-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121317-03**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.339985 | Long.: -84.027906 | Datum: NAD 83

Soil Map Unit Name: JoR1B2, RpC2 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Juncus effusus	25	[x] 23.1%	OBL
2. Cyperus esculentus	12	[ ] 11.1%	FACW
3. Agrostis stolonifera	18	[x] 16.7%	FACW
4. Symphyotrichum novae-angliae	10	[ ] 9.3%	FACW
5. Agrimonia parviflora	15	[x] 13.9%	FACW
6. Asclepias incarnata	7	[ ] 6.5%	OBL
7. Symphyotrichum ericoides	10	[ ] 9.3%	FACU
8. Carex vulpinoidea	11	[ ] 10.2%	FACW
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	108	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	32	x 1 =	32
FACW species	66	x 2 =	132
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	108 (A)		204 (B)

Prevalence Index = B/A = 1.889

Hydrophytic Vegetation Indicators:

- [x] **1 - Rapid Test for Hydrophytic Vegetation**
- [x] **2 - Dominance Test is > 50%**
- [x] **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.)

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

SOIL

Sampling Point: **w-ibl-121317-03**

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
0-4	10YR	4/3	95	10YR	4/6	5	C	M	Silty Clay Loam	
4-13	10YR	5/2	85	10YR	4/6	15			Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 5

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 18

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 13-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121317-01**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.343067 | Long.: -84.032802 | Datum: NAD 83

Soil Map Unit Name: JoR1B2 | NWI classification: PUBGh

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 old pond

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	[ ]	0.0%	
2.	0	[ ]	0.0%	
3.	0	[ ]	0.0%	
4.	0	[ ]	0.0%	
5.	0	[ ]	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.		[ ]	0.0%	
2.	0	[ ]	0.0%	
3.	0	[ ]	0.0%	
4.	0	[ ]	0.0%	
5.	0	[ ]	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Typha angustifolia	90	[✓]	90.0%	OBL
2. Leersia oryzoides	10	[ ]	10.0%	OBL
3.		[ ]	0.0%	
4.		[ ]	0.0%	
5.		[ ]	0.0%	
6.		[ ]	0.0%	
7.	0	[ ]	0.0%	
8.	0	[ ]	0.0%	
9.	0	[ ]	0.0%	
10.	0	[ ]	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	[ ]	0.0%	
2.	0	[ ]	0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

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.)

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

SOIL

Sampling Point: **w-jbl-121317-01**

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
0-14	10YR	5/2	90	10YR	5/6	10	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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):	10
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 13-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121317-02**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.346221 | Long.: -84.038149 | Datum: NAD 83

Soil Map Unit Name: WsS1B1 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (•) No ( )	**Is the Sampled Area within a Wetland?** Yes (•) No ( )
Hydric Soil Present?	Yes (•) No ( )	
Wetland Hydrology Present?	Yes (•) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Onoclea sensibilis	15	[ ] 14.6%	FACW
2. Phalaris arundinacea	25	[x] 24.3%	FACW
3. Leersia oryzoides	20	[x] 19.4%	OBL
4. Carex vulpinoidea	20	[x] 19.4%	FACW
5. Vernonia gigantea	5	[ ] 4.9%	FAC
6. Juncus effusus	8	[ ] 7.8%	OBL
7. Solidago gigantea	5	[ ] 4.9%	FACW
8. Eupatorium perfoliatum	5	[ ] 4.9%	OBL
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	103	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	33	x 1 =	33
FACW species	65	x 2 =	130
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	103 (A)		178 (B)

Prevalence Index = B/A = 1.728

Hydrophytic Vegetation Indicators:

- [x] **1 - Rapid Test for Hydrophytic Vegetation**
- [x] **2 - Dominance Test is > 50%**
- [x] **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.)

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

SOIL

Sampling Point: **w-jbl-121317-02**

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
0-12	10YR 4/1	90	10YR 4/6	10			Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 2

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 20

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 12-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121217-02**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.356645 | Long.: -84.055894 | Datum: NAD 83

Soil Map Unit Name: Cle1A | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Typha angustifolia	45	☑	42.9%	OBL
2. Epilobium coloratum	25	☑	23.8%	OBL
3. Setaria faberi	15	☐	14.3%	FACU
4. Solidago gigantea	10	☐	9.5%	FACW
5. Eupatorium perfoliatum	10	☐	9.5%	OBL
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	105	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	105 (A)		160 (B)

Prevalence Index = B/A = 1.524

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.)

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

SOIL

Sampling Point: **w-ibl-121217-02**

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
0-13	10YR	4/2	98	10YR	4/4	3			Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

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:

Wetland 21

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 11-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121117-02**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% / 0.0 ° | Lat.: 39.362935 | Long.: -84.072008 | Datum: NAD 83

Soil Map Unit Name: JoR1B2 | NWI classification: PUBGh

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:
old pond

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1. Salix nigra	10	☑	100.0%	OBL
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	10	= Total Cover		
Herb Stratum (Plot size:)				
1. Typha latifolia	90	☑	94.7%	OBL
2. Leersia oryzoides	5	☐	5.3%	OBL
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	95	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = 1.000

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.)

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

SOIL

Sampling Point: **w-ibl-121117-02**

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
0-13	5G	2.5/1	80	10YR	4/2	20	RM		Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

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:

Wetland 22

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings City/County: Warren Sampling Date: 11-Dec-17

Applicant/Owner: AEP State: OH Sampling Point: **w-jbl-121217-01**

Investigator(s): JBL, JTT Section, Township, Range: S T R

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° Lat.: 39.364964 Long.: -84.078452 Datum: NAD 83

Soil Map Unit Name: WsS1A1 NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
Pem in ROW

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Festuca arundinacea	20	☑	19.4%	FACU
2. Juncus effusus	25	☑	24.3%	OBL
3. Carex vulpinoidea	25	☑	24.3%	FACW
4. Apocynum cannabinum	8	☐	7.8%	FAC
5. Agrimonia parviflora	10	☐	9.7%	FACW
6. Symphyotrichum ericoides	10	☐	9.7%	FACU
7. Persicaria pensylvanica	5	☐	4.9%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	103	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	40	x 2 =	80
FAC species	8	x 3 =	24
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	103 (A)		249 (B)

Prevalence Index = B/A = 2.417

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.)

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

SOIL

Sampling Point: **w-ibl-121217-01**

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
0-13	10YR	4/1	90	10YR	4/4	10			Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 23a, b

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings 138kV | City/County: Warren County | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121117-04a,b**

Investigator(s): JTT,JBL | Section, Township, Range: S 0 T 0 R 0

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

Slope: 0.0% 0.0 ° | Lat.: 39.365216 | Long.: -84.079471 | Datum: NAD 83

Soil Map Unit Name: RpC2 | NWI classification: PFO1A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
swale adjacent to hh11. 4a is pem. 4b is pfo

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Acer saccharinum	40	☑ 100.0%	FACW
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 30)			
1. Carex vulpinoidea	40	☑ 43.0%	FACW
2. Cinna arundinacea	30	☑ 32.3%	FACW
3. Juncus effusus	8	☐ 8.6%	OBL
4. Persicaria pensylvanica	10	☐ 10.8%	FACW
5. Epilobium coloratum	5	☐ 5.4%	OBL
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	93	= Total Cover	
Woody Vine Stratu (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	13	x 1 =	13
FACW species	120	x 2 =	240
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	133 (A)		253 (B)

Prevalence Index = B/A = 1.902

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.)

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

SOIL

Sampling Point: **w-ibl-121117-04a.b**

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
0-10	10YR	4/1	90	10YR	4/6	10			Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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):	0.5
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 24

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 11-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-121117-03**

Investigator(s): JBL, JTT | Section, Township, Range: S 0 T 0 R 0

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 39.365750 | Long.: -84.080556 | Datum: NAD 83

Soil Map Unit Name: Cle1A | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Juncus effusus	70	☑	65.4%	OBL
2. Carex vulpinoidea	8	☐	7.5%	FACW
3. Agrostis stolonifera	5	☐	4.7%	FACW
4. Apocynum cannabinum	5	☐	4.7%	FAC
5. Persicaria pensylvanica	10	☐	9.3%	FACW
6. Festuca arundinacea	4	☐	3.7%	FACU
7. Scirpus atrovirens	5	☐	4.7%	OBL
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	107	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	23	x 2 =	46
FAC species	5	x 3 =	15
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column Totals:	107 (A)		152 (B)

Prevalence Index = B/A = 1.421

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.)

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

SOIL

Sampling Point: **w-ibl-121117-03**

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
0-12	10YR	5/2	85	10YR	4/6	15	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 25

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings City/County: Warren Sampling Date: 11-Dec-17

Applicant/Owner: AEP State: OH Sampling Point: **w-jbl-121117-01**

Investigator(s): JBL, JTT Section, Township, Range: S 2 T 5E R 3N

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

Slope: 0.0% / 0.0 ° Lat.: 39.376287 Long.: -84.116880 Datum: NAD 83`

Soil Map Unit Name: JoR1B2 NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Juncus tenuis	35	☑	35.0%	FAC
2. Carex annectens	20	☑	20.0%	FACW
3. Typha angustifolia	20	☑	20.0%	OBL
4. Cyperus esculentus	15	☐	15.0%	FACW
5. Rosa multiflora	5	☐	5.0%	FACU
6. Festuca arundinacea	5	☐	5.0%	FACU
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	100	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	35	x 2 =	70
FAC species	35	x 3 =	105
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	100 (A)		235 (B)

Prevalence Index = B/A = 2.350

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.)

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

SOIL

Sampling Point: **w-ibl-121117-01**

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
0-13	10YR	4/1	90	7.5YR	4/6	10	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 0.5

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:

Wetland 26

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 07-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-120717-01**

Investigator(s): JBL, PJR | Section, Township, Range: S 14 T 5E R 3N

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

Slope: 0.0% / 0.0 ° | Lat.: 39.383214 | Long.: -84.142189 | Datum: NAD 83

Soil Map Unit Name: JoR1B2 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
swale extending tonpond

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.		[ ] 0.0%	
2.		[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Scirpus atrovirens	40	[✓] 38.1%	OBL
2. Agrostis stolonifera	15	[ ] 14.3%	FACW
3. Apocynum cannabinum	5	[ ] 4.8%	FAC
4. Cyperus esculentus	10	[ ] 9.5%	FACW
5. Festuca arundinacea	25	[✓] 23.8%	FACU
6. Juncus effusus	10	[ ] 9.5%	OBL
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	25	x 2 =	50
FAC species	5	x 3 =	15
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	105 (A)		215 (B)

Prevalence Index = B/A = 2.048

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.)

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

SOIL

Sampling Point: **w-ibl-120717-01**

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
0-3	10YR	5/1	95	10YR	4/6	5	C		Clay Loam	
3-14	10YR	5/1	80	7.5YR	4/6	20	C		Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 0.5

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:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 06-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-120617-02**

Investigator(s): JBL, PJR | Section, Township, Range: S 21 T 5E R 3N

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

Slope: 0.0% / 0.0 ° | Lat.: 39.387672 | Long.: -84.159135 | Datum: NAD 83

Soil Map Unit Name: HrC2 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. Poa palustris	80	[✓] 80.0%	FACW
2. Cyperus esculentus	10	[ ] 10.0%	FACW
3. Lysimachia nummularia	10	[ ] 10.0%	FACW
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
6.	0	[ ] 0.0%	
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= 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: 100.0% (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 = 2.000

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.)

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

SOIL

Sampling Point: **w-jbl-120617-02**

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
0-12	10YR	5/1	85	7.5YR	4/6	15		M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 0.5

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:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 06-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-120617-03**

Investigator(s): JBL, PJR | Section, Township, Range: S 21 T 5E R 3N

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

Slope: 0.0% / 0.0 ° | Lat.: 39.388497 | Long.: -84.162911 | Datum: NAD 83

Soil Map Unit Name: WsS1A1 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
pem in row hommocky due to ĉlearing

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Acer saccharinum	5	[✓] 50.0%	FACW
2. Cornus amomum	5	[✓] 50.0%	FACW
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Echinochloa crus-galli	20	[✓] 19.6%	FACW
2. Juncus effusus	20	[✓] 19.6%	OBL
3. Eupatorium perfoliatum	10	[ ] 9.8%	OBL
4. Ludwigia alternifolia	8	[ ] 7.8%	OBL
5. Agrostis stolonifera	12	[✓] 11.8%	FACW
6. Setaria faberi	12	[✓] 11.8%	FACU
7. Vernonia gigantea	8	[ ] 7.8%	FAC
8. Carex vulpinoidea	7	[ ] 6.9%	FACW
9. Bidens frondosa	5	[ ] 4.9%	FACW
10.	0	[ ] 0.0%	
	102	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	38	x 1 =	38
FACW species	54	x 2 =	108
FAC species	8	x 3 =	24
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	112 (A)		218 (B)

Prevalence Index = B/A = 1.946

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.)

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

SOIL

Sampling Point: **w-ibl-120617-03**

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
0-15	10YR 5/1	80	10YR 4/6	20	C	M	Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

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:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 06-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-120617-01**

Investigator(s): JBL, PJR | Section, Township, Range: S 3 T 4E R 3N

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): flat

Slope: 0.0% / 0.0 ° | Lat.: 39.402549 | Long.: -84.211750 | Datum: NAD 83

Soil Map Unit Name: FhA | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Cornus amomum	5	[✓] 100.0%	FACW
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	5	= Total Cover	
Herb Stratum (Plot size:)			
1. Phalaris arundinacea	20	[✓] 19.0%	FACW
2. Scirpus cyperinus	10	[ ] 9.5%	OBL
3. Typha angustifolia	25	[✓] 23.8%	OBL
4. Leersia oryzoides	15	[✓] 14.3%	OBL
5. Epilobium coloratum	15	[✓] 14.3%	OBL
6. Euthamia graminifolia	10	[ ] 9.5%	FACW
7. Juncus tenuis	10	[ ] 9.5%	FAC
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= 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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		165 (B)

Prevalence Index = B/A = 1.500

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.)

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

SOIL

Sampling Point: **w-ibl-120617-01**

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
0-11	10YR 5/1	95	10YR 4/6	5	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Wetland 30

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hillsboro-Hutchings | City/County: Warren | Sampling Date: 05-Dec-17

Applicant/Owner: AEP | State: OH | Sampling Point: **w-jbl-120517-03**

Investigator(s): JBL, PJR | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): ____

Slope: 0.0% / 0.0 ° | Lat.: 39.413989 | Long.: -84.251541 | Datum: NAD 83

Soil Map Unit Name: MrC2 | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ], Soil [ ], or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
pasture and vacantvlot wetland

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: ____)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Cornus amomum	10	[✓] 100.0%	FACW
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Typha angustifolia	90	[✓] 94.7%	OBL
2. Poa palustris	5	[ ] 5.3%	FACW
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
6.	0	[ ] 0.0%	
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	95	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
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:	105 (A)		120 (B)

Prevalence Index = B/A = 1.143

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.)

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

SOIL

Sampling Point: **w-jbl-120517-03**

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
0-11	10YR 5/1	85	7.5YR 4/6	15	C			

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

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): 1

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:

This foregoing document was electronically filed with the Public Utilities

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in

Case No(s). 19-1987-EL-BLN

Summary: Letter of Notification Letter of Notification for the Clinton County (Duke)- Hillsboro 138 kV Line Project- SET 1 electronically filed by Tanner Wolffram on behalf of AEP Ohio Transmission Company, Inc.