

Case No. 22-1027-EL-BLN

Part 1 of 2

# Construction Notice for the Ohio Central – Fostoria Central 345 kV Transmission Line Adjustment Project



An **AEP** Company

*BOUNDLESS ENERGY™*

PUCO Case No. 22-1027-EL-BNR

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

Submitted by:  
Ohio Power Company

November 4, 2022

CONSTRUCTION NOTICE FOR OHIO CENTRAL – FOSTORIA CENTRAL 345 KV TRANSMISSION LINE  
ADJUSTMENT PROJECT

CONSTRUCTION NOTICE

Ohio Power Company

Ohio Central – Fostoria Central 345 kV Transmission Line Adjustment Project

4906-6-05 Accelerated Application Requirements

The Ohio Power Company (the Company) provides the following information to the Ohio Power Siting Board (OPSB) in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

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

The Company is proposing the Ohio Central – Fostoria Central 345 kV Transmission Line Adjustment Project (the Project), in Washington Township, Hancock County, Ohio and Loudon Township, Seneca County, Ohio. The purpose of the Project is to replace an existing structure and adjust approximately 0.5 mile of the existing Ohio Central – Fostoria Central 345 kV transmission line to accommodate the proposed Iron Triangle Switch – Loudon 138 kV Transmission Line Project (Case No. 22-0919-EL-BLN). The proposed Project is located entirely within existing ROW and will use existing easement rights. The location of the Project is shown on Figure 1 and 2 in Appendix A.

The Project meets the requirements for a Construction Notice (CN) as defined by Item 2 (a) of Appendix A to Ohio Administrative Code Section 4906-1-01, 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:

(a) Two miles or less.

The Project has been assigned Case No. 22-1027-EL-BNR.

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## B(2) Statement of Need

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

Buckeye Power Inc., on behalf of North Central Electric Co-op, requested the Company to provide a new 138kV delivery point off the Howard-Fostoria 138 kV Transmission Line to a new non-jurisdictional substation (the Iron Triangle Switch – Loudon 138 kV Transmission Line Project), see Case No. Case No. 22-0919-EL-BLN. The delivery point will serve a North Central Electric Co-op retail customer with an anticipated load of 6.2 MVA. The Company requires raising the existing Ohio Central – Fostoria Central 345 kV line, the subject of this filing, for construction of the Iron Triangle Switch – Loudon 138 kV Transmission Line Project (Case No. 22-0919-EL-BLN).

Failure to move forward with the proposed Project will result in the inability to serve the customer's load expectations.

The need and solution for the entire customer project was presented and reviewed with stakeholders at the October 2021 and April 2022 PJM SRRTEP meetings. The project was subsequently assigned PJM project number s2782. The Project was not included in the Company's Long Term Forecast Report, at that time a specific solution had not been identified to serve this interconnection.

## B(3) Project Location

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

The location of the Project relative to existing transmission lines and the proposed Iron Triangle Switch – Loudon 138 kV Transmission Line project (currently under review by OPSB) is shown on Figure 1, in Appendix A. Figure 2, in Appendix A, identifies the Project components on a 2021 aerial photograph.

## 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.

Approximately 0.5 mile of the existing Ohio Central – Fostoria Central 345 kV transmission line will be adjusted based on the need to replace one structure. The proposed structure will be installed within the existing Ohio Central – Fostoria Central 345 kV ROW and is required to meet clearances for the new Iron Triangle Switch-Loudon 138 kV transmission line. The Project represents the most suitable and least impactful alternative as it is located entirely within existing ROW and uses existing easement

## CONSTRUCTION NOTICE FOR OHIO CENTRAL – FOSTORIA CENTRAL 345 KV TRANSMISSION LINE ADJUSTMENT PROJECT

rights, minimizing potential impacts to affected landowners. Therefore, no other alternatives were considered. 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.

The Company maintains a website (<http://aeprtransmission.com/ohio/>) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project. In addition, the Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey this information to 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 February 2023 with an anticipated in-service date of March 2023.

### B(7) Area Map

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

Figure 1, in Appendix A, identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map. Appendix A, Figure 2 shows the Project area on a 2021 aerial photograph.

To visit the Project from downtown Columbus, Ohio, take I-71 N towards Cleveland for approximately 23 miles to the US-36 E/State Route 37 exit. Turn left off the exit to proceed along US-36 E for approximately 8 miles, then take a slight right onto E Central Avenue (State Route 37). Then, turn right onto US-23 toward Marion and continue for approximately 45 miles, proceeding northwest onto State Route 15. Turn Right onto County Road 95/Township Highway 95 and continue north for 1.2 miles, then turn left onto State Route 568 and continue northwest for 3.5 miles. Turn right onto County Road 330 and continue north for approximately 5 miles, then turn right onto US-224 E and continue northeast for two miles. Turn left onto County Road 23 and continue north for 3.3 miles, then turn right onto Township Road 217 and continue east for 0.7 mile. The proposed Project is located approximately 0.3 mile to the south of Township Road 217.

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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 located in both Hancock County (Parcel No. 510001010084) and Seneca County (Parcel Nos. 134000542880000 and 134000545800000) and located entirely within existing ROW. Additionally, the proposed transmission line adjustment work will use existing easement rights. No other property easements, options, or land use agreements are necessary to construct the Project or operate the transmission line.

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 adjustment is anticipated to include the following:

Voltage: 345kV  
Conductors: (3) 954 kCM RAILACSR (45/7)  
Static Wire: (1) 7#8 Alumoweld  
Insulators: Polymer  
ROW Width: 100 feet  
Structure Type: (1) single circuit, H-Frame, V-String structure with direct embedded foundation

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

Not applicable. No occupied residences or institutions are located within 100 feet of the Project.

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

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

Not applicable. No occupied residences or institutions are located within 100 feet of the Project.

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B(9)(b)(ii)(c) Project Cost

The estimated capital cost of the project.

The capital costs estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately \$1.2 million using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the Ohio Power Company's FERC formula rate (Attachment H-14 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Economic Impacts

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

B(10)(a) Operating Characteristics

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

The Project is located approximately 0.7 mile southeast of Hancock County Road 23 and Washington Township 217. Land use surrounding the Project area generally consists of agricultural or residential land, as classified by the Hancock and Seneca County auditors. No schools, residences, or commercial buildings are located within 1,000 feet of the Project. No parks, churches, cemeteries, wildlife management areas, or nature preserve lands are located within 1,000 feet of the centerline of the Project.

B(10)(b) Agricultural Land Information

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

The Project ROW occupies approximately 6 acres, which has historically been used for cultivated cropland. One property registered as agricultural district land are crossed by the Project (0.6 acre), based on email coordination with the Seneca County Auditor's Office on September 16, 2022. The Project crosses no properties registered as agricultural district land within Hancock County, based on initial email coordination with the Hancock County Auditor's Office on August 24, 2022. The Company is currently coordinating with Hancock County to obtain updated agricultural district data for properties in Washington Township.

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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.

In September 2022, the Company’s consultant completed Phase I Archaeological and Phase I History/Architectural surveys, which involved literature review, subsurface testing, and visual inspection. No previously identified archaeological sites are located within the Project area and no new archaeological sites were identified during the survey. Additionally, no historic structures eligible for the National Register of Historic Places (NRHP) were identified in the Project area.

The Company’s consultant coordinated with the State Historic Preservation Office (SHPO), recommending that the Project would have no adverse effect on historic properties and no further cultural resource work would be necessary. In their October 17, 2022 response, SHPO agreed with the recommendations (see Appendix C).

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

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

A Notice of Intent will be filed with the Ohio Environmental Protection Agency (OEPA) for authorization of construction stormwater discharge under NPDES General Permit for Discharges of Storm Water Associated with Construction Activity OHC000005. The Company will also submit a Storm Water Pollution Prevention Plan (SWPPP) to Hancock and Seneca counties that adhere to their permit requirements. The Company will implement and maintain best management practices as outlined in the Project-specific SWPPP to minimize erosion sediment to Project surface waters during storm events.

The proposed mid-span structure is not located within any Federal Emergency Management Agency’s (“FEMA”) 100-year floodplain areas. Therefore, no floodplain permitting is expected to be required for the Project.

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



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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.

On July 27, 2022, the Company's consultant submitted coordination letters to the United State Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review of the Project area for potential impacts to state and/or federally protected species. ODNR and USFWS provided responses on August 15, 2022 and August 5, 2022, respectively. Copies of the agencies' responses are presented in Appendix C.

ODNR reviewed the ONHP database for historic records of state or federally-listed species for a one-mile radius of the Project. In their response, ODNR indicate that no ONHP records were returned for a one-mile radius of the Project. The ODNR DOW indicated that the Project is located within the range of the following protected bat species: the state endangered and federally endangered Indiana bat (*Myotis sodalis*), the state endangered and federally threatened northern long-eared bat (*Myotis septentrionalis*), the state endangered little brown bat (*Myotis lucifugus*), and the state endangered tricolored bat (*Perimyotis subflavus*). The DOW recommends seasonal tree cutting for trees  $\geq 3$  inches diameter at breast height (dbh) between October 1 and March 31 to avoid adverse impacts to these species. No tree clearing is required for the Project. Additionally, a desktop assessment conducted prior to the field survey identified no potential hibernacula within a 0.5-mile radius of the Project; therefore, adverse impacts to these species are not anticipated.

The ODNR DOW also indicated that the Project lies within the range of the following freshwater aquatic species: the state and federal endangered clubshell (*Pleurobema clava*), the state and federal endangered rayed bean (*Villosa fabalis*), the state endangered purple lilliput (*Toxolasma lividum*), the state threatened pondhorn (*Unio merus tetralasmus*), the state threatened salamander mussel (*Simpsonia ambigua*), and the western banded killifish (*Fundulus diaphanus menona*). Potentially suitable habitat was not identified in the Project area and no in-water work is proposed for the Project; therefore, ODNR indicates that no impacts to the above-listed freshwater mussel and fish species are likely.

The ODNR DOW also indicated the Project lies within the range of the state threatened least bittern (*Ixobrychus exilis*) and the state endangered northern harrier (*Circus hudsonis*). The least bittern is a secretive marsh species that prefers large dense emergent wetlands with thick stands of cattails, sedges, sawgrass, or other semiaquatic vegetation interspersed with woody vegetation and open water. Northern harriers occasionally breed in large marshes and grasslands, nest in loose colonies on top of mounds on the ground, and hunt over grasslands. The Project does not present potentially suitable habitat for the above-listed bird species and therefore no adverse impacts are anticipated for the species.

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The USFWS coordination letter indicated that no federal wildlife refuges, wilderness areas, or critical habitat is located within the Project. Additionally, USFWS indicated that the Project is within the range of the Indiana bat and northern long-eared bat. The USFWS recommends seasonal tree clearing (October 1 through March 31) if no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided. If implementation of seasonal tree cutting is not feasible for the Project, the USFWS recommends a summer presence/absence survey be conducted between June 1 and August 15 in coordination with the Ohio Field Office. The USFWS indicated that due to the project type, size, and location, no other adverse effects to any other federally protected species or designated critical habitat are anticipated. No tree clearing is required for the Project. Additionally, a desktop assessment conducted prior to the field survey identified no potential hibernacula within a 0.5-mile radius of the Project.

Based on the nature of the proposed Project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated.

B(10)(f) Areas of Ecological Concern

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

On July 25 and September 14, 2022, wetland and stream delineation surveys were completed by the Company's consultant for an approximately 53-acre Environmental Survey Corridor (ESC), which encompasses the Project (see Appendix D). Within the ESC, two streams (Stream IT 001 and Stream IT 002) were delineated, which cross the Project area.

No in-water work or tree clearing is required for the Project. No other areas of ecological concern were identified within the Project area. Based on a review of the Protected Areas Database of the United States as well as the Conservation Easement Database, no state or national parks, forests, wildlife areas or mapped conservation easements are in the vicinity of the Project.

FEMA Flood Insurance Rate Map (FIRM) panels (39063C0120E and 39063C0275E) were reviewed to identify floodplains/flood hazard areas within the Project area. Based on this mapping, no FEMA 100-year floodplain is located within the Project; therefore, no floodplain permitting is anticipated.

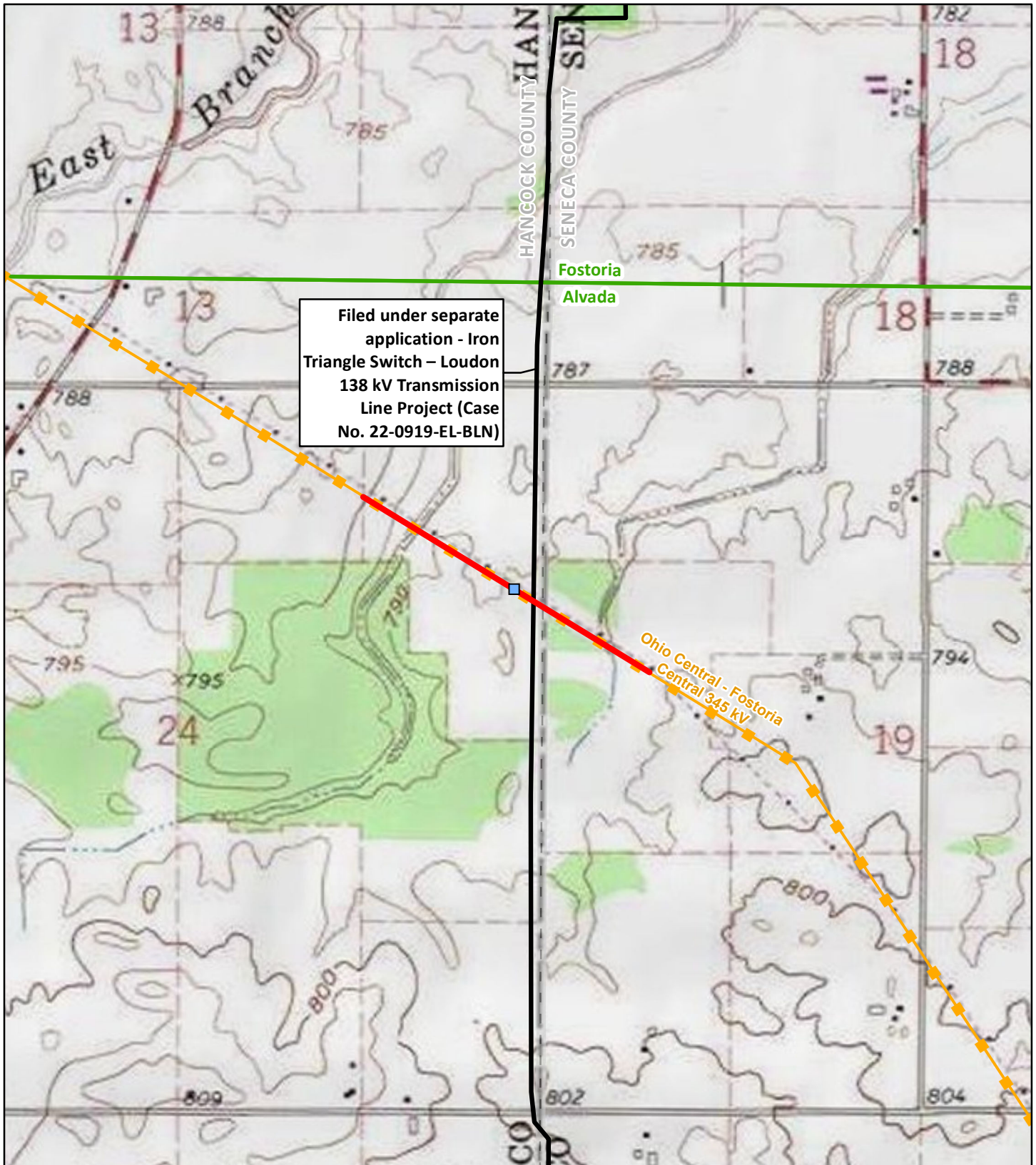
CONSTRUCTION NOTICE FOR OHIO CENTRAL – FOSTORIA CENTRAL 345 KV TRANSMISSION LINE  
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B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps



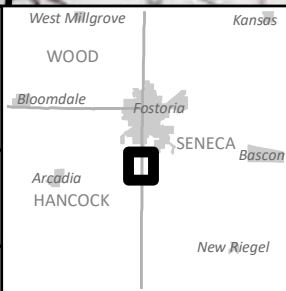
Filed under separate application - Iron Triangle Switch - Loudon 138 kV Transmission Line Project (Case No. 22-0919-EL-BLN)

- Proposed Structure
- Proposed Route Adjustment
- Proposed Iron Triangle - Loudon 138 kV (Case No. 22-0919-EL -BLN)
- - - Existing 345 kV Transmission Line
- USGS 7.5' Topographic Quad Boundary
- County Boundary


Sources:  
 Topo Quads (USGS 2013)  
 Hydrology (USGS 2021)  
 Transportation (ODOT 2021)

State Plane  
 Ohio North  
 NAD 83

  
 November 04, 2022



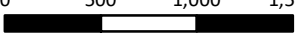
**Figure 1  
Project Area**



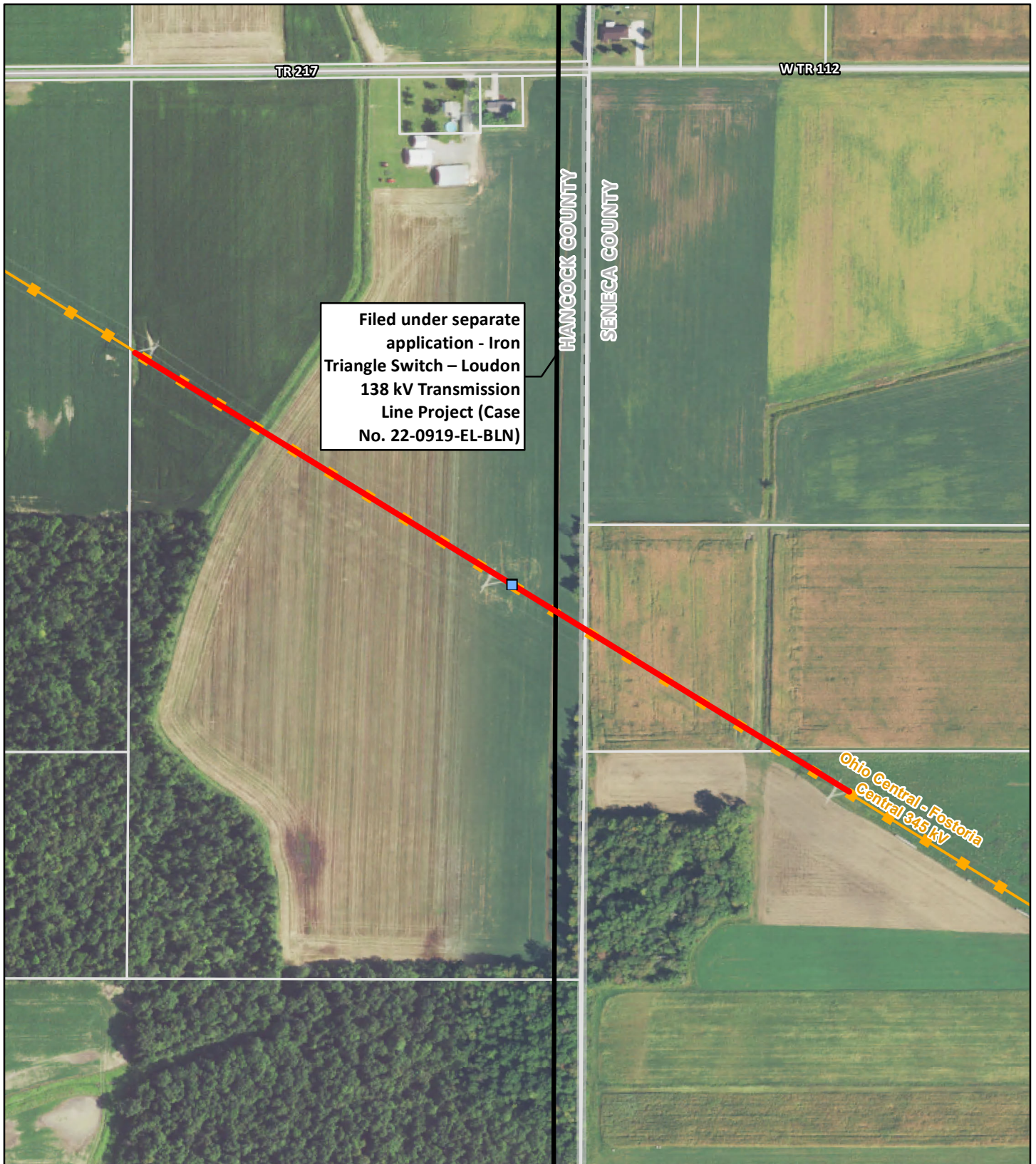
**AEP OHIO  
TRANSMISSION  
COMPANY**  
an AEP Company  
BOUNDLESS ENERGY

**Ohio Central-Fostoria Central  
345 kV Transmission Line  
Raise Project**

0    500    1,000    1,500



Feet



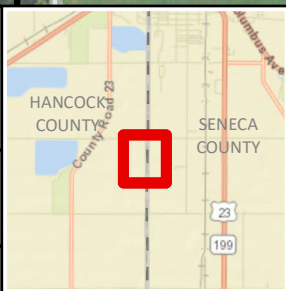
Filed under separate application - Iron Triangle Switch – Loudon 138 kV Transmission Line Project (Case No. 22-0919-EL-BLN)

- Proposed Structure
- Proposed Route Adjustment
- Proposed Iron Triangle - Loudon 138 kV (Case No. 22-0919-EL -BLN)
- Existing 345 kV Transmission Line
- Parcel Boundary

Sources:  
 Imagery (NAIP 2021)  
 Hydrology (USGS 2021)  
 Transportation (ODOT 2021)

State Plane  
 Ohio North  
 NAD 83

November 04, 2022



**Figure 2  
Aerial Map**

**AEP OHIO TRANSMISSION COMPANY**  
an AEP Company  
 BOUNDLESS ENERGY

**Ohio Central-Fostoria Central  
345 kV Transmission Line  
Raise Project**

0      200      400      600  
Feet

## Appendix B PJM Solution



# AEP Transmission Zone M-3 Process Fostoria, Ohio

**Need Number:** AEP-2021-OH054

**Process Stage:** Solution Meeting 4/22/2022

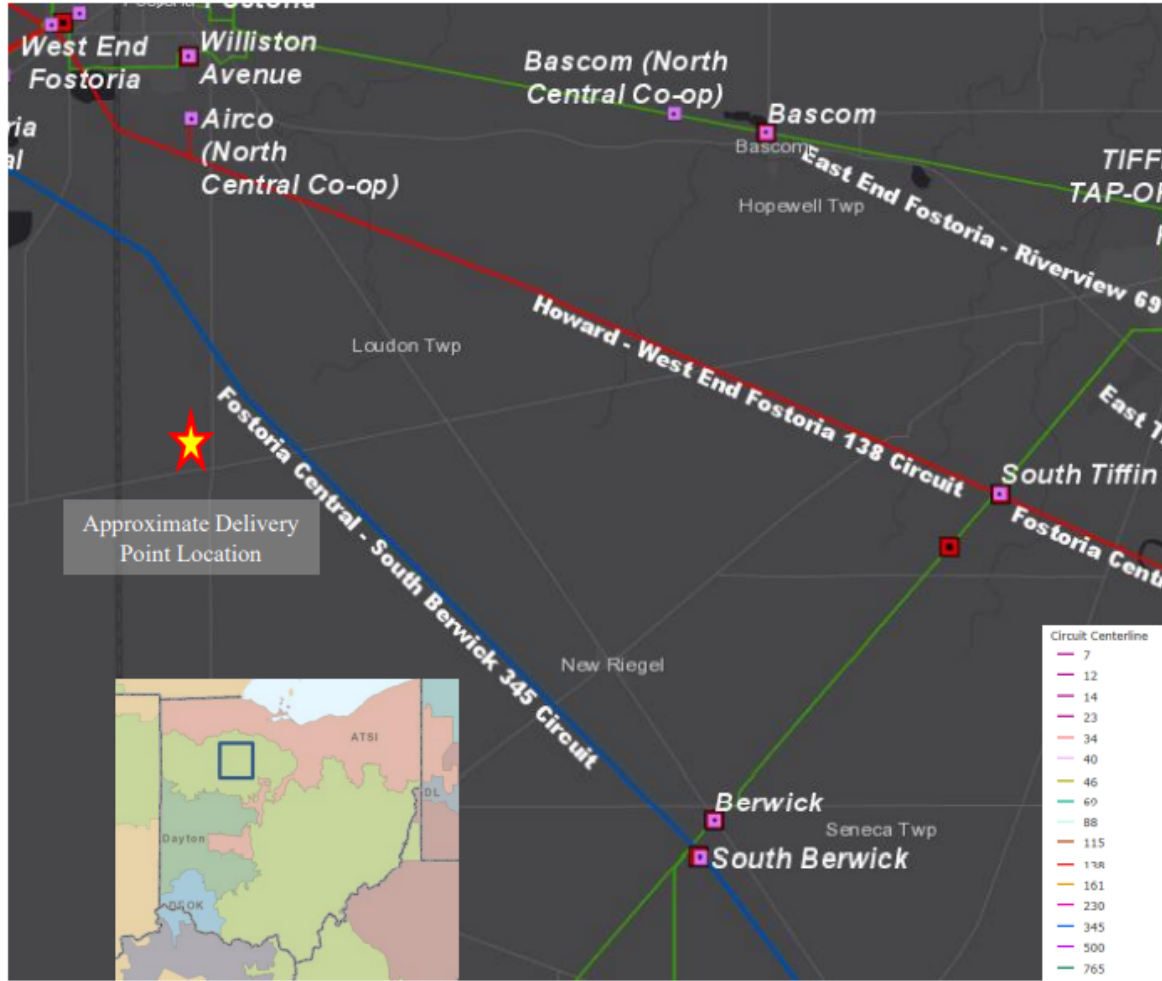
**Previously Presented:** Need Meeting 10/15/2021

**Supplemental Project Driver:**  
Customer Service

**Specific Assumption Reference:**  
AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions slide 12)

**Problem Statement:**

- Buckeye is requesting on behalf of North Central Electric Co-op a new 138kV delivery point tapped off of the Fostoria Central – Melmore 138kV Circuit by August 2022. Anticipated load is about 6.2 MVA.







## AEP Transmission Zone M-3 Process Iron Triangle 138kV Project

**Need Number:** AEP-2021-OH054

**Process Stage:** Solutions Meeting 04/22/2022

### Proposed Solution:

- **Iron Triangle Switch 138kV:** Establish a new three way POP switch on the Fostoria Central – Melmore circuit to serve new North Central delivery point. The through-path will include auto-sectionalizing switches. **Estimated Cost \$0.866M**
- **Iron Triangle – Loudon 138kV.** Construct ~3.85 miles of single circuit 138 kV line utilizing 795 ACSR conductor between the proposed Iron Triangle Switch and the new NCEC Loudon delivery point **Estimated Cost \$8.586M**
- **West End Fostoria – Melmore 138kV:** Cut in work will be required on the Fostoria – Melmore Circuit for the Iron Triangle Switch. **Estimated Cost \$0.627M**
- **Ohio Central – Fostoria Central 345kV.** Modify Fostoria Central – South Berwick 345kV for the Iron Triangle – Loudon 138kV line crossing. **Estimated Cost \$1.338M**

**Total Estimated Cost: \$11.432M**

### Alternatives:

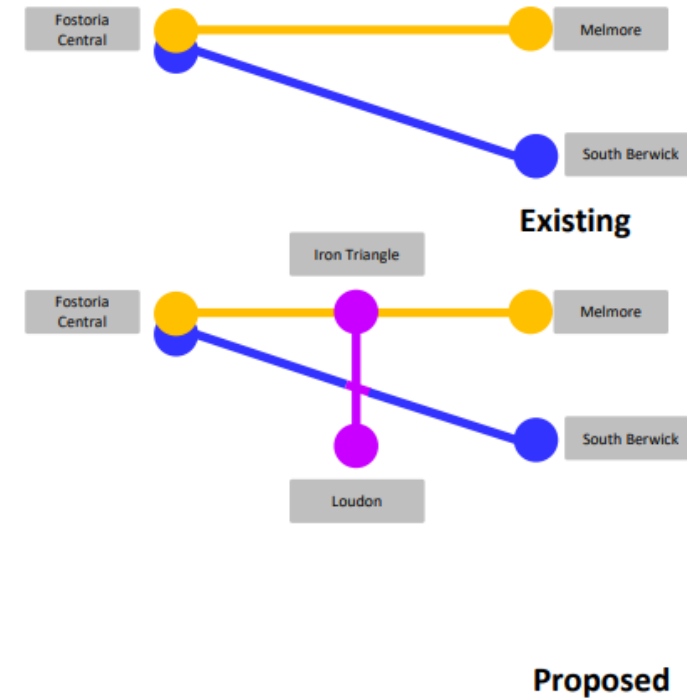
Considering the location and timing of the customer request, no other viable alternatives were considered.

**Projected In-Service:** 7/1/2023

**Project Status:** Scoping

**Model:** 2026 RTEP

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



## Appendix C SHPO Response



In reply, refer to  
2022-HAN-55966

October 17, 2022

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

**RE: Iron Triangle-Loudon 138kV Greenfield Transmission Line Project, Loudon Township, Seneca County, and Washington Township, Hancock County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received September 20, 2022 regarding the proposed Iron Triangle-Loudon 138kV Greenfield Transmission Line Project, Loudon Township, Seneca County, and Washington Township, Hancock County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the 4 km (2.5 mi) Iron Triangle-Loudon 138kV Greenfield Transmission Line Project in Loudon Township, Seneca County and Washington Township, Hancock County, Ohio* by Ryan J. Weller (Weller & Associates, Inc. 2022).

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

The following comments pertain to the *History/Architecture Investigations Iron Triangle-Loudon 138kV Greenfield Transmission Line Project in Loudon Township, Seneca County, and Washington Township, Hancock County, Ohio* by Scott McIntosh (Weller & Associates, Inc. 2022).

A literature review and field survey were completed as part of the investigations. A total of nineteen (19) properties fifty years of age or older were identified within the Area of Potential Effects (APE). Weller recommends these properties are not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendations of eligibility.

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

Sincerely,

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

Krista Horrocks, Project Reviews Manager  
Resource Protection and Review

RPR Serial No: 1095085, 1095086

## Appendix D Protected Species Agency Responses



# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

**Office of Real Estate**  
*John Kessler, Chief*  
2045 Morse Road – Bldg. E-2  
Columbus, OH 43229  
Phone: (614) 265-6621  
Fax: (614) 267-4764

August 15, 2022

Brad Rolfes  
WSP USA  
Suite 2500  
312 Elm Street  
Cincinnati, OH 45202

**Re:** 22-0760; AEP Iron Triangle 138 kV Transmission Line Project

**Project:** The project proposes to rebuild approximately 3.3 miles of the Iron Triangle 138 kV transmission line.

**Location:** The proposed project is located in Washington Township, Hancock County, Ohio.

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

**Natural Heritage Database:** A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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

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

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

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

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

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

Federally Endangered

clubshell (*Pleurobema clava*)

rayed bean (*Villosa fabalis*)

State Endangered

purple lilliput (*Toxolasma lividum*)

State Threatened

pondhorn (*Unio merus tetralasmus*)

Salamander Mussel (*Simpsonaias ambigua*)

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

The project is within the range of the western banded killifish (*Fundulus diaphanus menona*), a state endangered fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 through July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

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

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

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

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew  
Environmental Services Administrator

Rolfes, Brad

---

From: Ohio, FW3 <ohio@fws.gov>  
Sent: Friday, August 5, 2022 9:13 AM  
To: Rolfes, Brad  
Cc: nathan.reardon@dnr.state.oh.us; Eileen.Wyza@dnr.ohio.gov  
Subject: AEP Iron Triangle 138 kV Transmission Line Project, Hancock and Seneca Counties, Ohio

Follow Up Flag: Flag for follow up  
Flag Status: Flagged



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



Project Code: 2022-0064649

Dear Mr. Rolfes,

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

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

**Seasonal Tree Clearing for Federally Listed Bat Species:** The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$  inches dbh only occur between November 15 and March 15. Seasonal clearing is recommended to avoid



adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <https://ecos.fws.gov/ecp/species/9045>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are known or assumed present. Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.

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

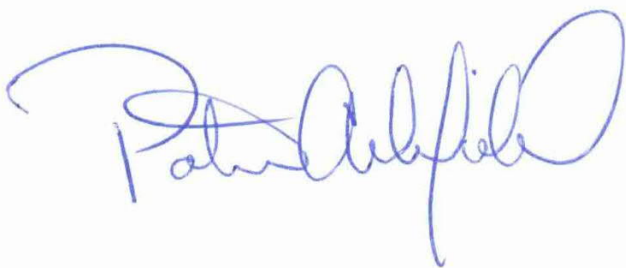
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio ([https://epa.ohio.gov/portals/47/facts/ohio\\_wetlands.pdf](https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf)).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

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

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

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

Sincerely,



Patrice Ashfield  
Field Office Supervisor

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

Case No. 22-1027-EL-BLN

Part 2 of 2

Appendix E Wetland Delineation Report



# IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT ECOLOGICAL SURVEY REPORT



PROJECT NO.: 31300107.077

DATE: OCTOBER 2022

AEP Transmission  
8500 Smith's Mill Road  
New Albany, OH 43054



An AEP Company

BOUNDLESS ENERGY™

WSP USA  
312 ELM STREET, SUITE 2500  
CINCINNATI, OH 45202



WSP.COM



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# 1 INTRODUCTION

On behalf of American Electric Power (AEP) Ohio Transmission Company, Inc. (AEP Ohio Transco), WSP USA (WSP) conducted environmental surveys for the approximately 4.1-mile-long Iron Triangle 138 kV Transmission Line Project (“Project”), located in Washington Township, in Hancock County, and Loudon Township, in Seneca County, Ohio. The environmental survey included a wetland and water resource delineation and characterization of potential habitat for state and federally listed species. The wetland delineation was performed to determine whether wetlands and streams are present within the vicinity of the Project that would meet the definition of Waters of the United States (WoUS) or be subject to regulations implemented by the Ohio Environmental Protection Agency (OEPA), and to document their extents and current conditions if present. The wetland delineation was performed by individuals trained in the three-parameter methodology (hydrophytic vegetation, wetland hydrology, and hydric soils) adopted by the U.S. Army Corps of Engineers (USACE) as outlined in the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010) and in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987).

The report presents the results of the ecological considerations and review of the site’s existing and reasonably foreseeable site conditions at the time of the environmental surveys. The results cannot apply to site changes occurring after the survey which WSP has not had the opportunity to review. During the course of any survey, site conditions may change over time due to human and/or natural causes; as such, the results presented in this report may be invalidated, either wholly or in part, by changes beyond the control of WSP.





## 2 BACKGROUND INFORMATION

### 2.1 PROJECT AREA

The approximately 4.1-mile Project (Proposed and Alternate Routes) is located within Washington Township, in Hancock County, and Loudon Township, in Seneca County, Ohio. The Environmental Survey Corridor (ESC) (approximately 100 feet wide) and originates at the proposed Iron Triangle Switch (approximate coordinate: 41.1346°, -83.4193°) and extends generally south to the proposed Loudon Substation (approximate coordinate: (41.0937°, -83.4216°) (Figure 1, Appendix A). The approximately 53-acre ESC also includes proposed access roads, pull pads and potential laydown yards, in addition to the proposed preferred and alternate route options. The ESC is located within the Alvada and Fostoria, Ohio U.S. Geological Survey (USGS) 7.5-minute topographic map quadrangle boundaries. Table 2-1 provides an overview of the project location.

**TABLE 2-1: GENERAL PROJECT INFORMATION**

<b>COUNTY:</b>	Hancock and Seneca
<b>TOWNSHIP:</b>	Loudon and Washington
<b>END POINT COORDINATES:</b>	Proposed Iron Triangle Switch: 41.1346°, -83.4193° Proposed Loudon Substation: 41.0937°, -83.4216°
<b>USGS QUADRANGLE:</b>	Alvada and Fostoria
<b>ENVIRONMENTAL SURVEY CORRIDOR LENGTH (mi.):</b>	4.1
<b>ENVIRONMENTAL SURVEY CORRIDOR WIDTH (ft.):</b>	100
<b>ENVIRONMENTAL SURVEY CORRIDOR SIZE (ac.):</b>	53
<b>ELEVATION RANGE (ft. above sea level):</b>	872 – 816
<b>8-DIGIT HYDROLOGIC UNIT CODE:</b>	04100010 04100011
<b>12-DIGIT HYDROLOGIC UNIT CODE(S) :</b>	04100010-02-02 04100011-10-04
<b>DATE(S) OF SURVEY :</b>	July 25, September 14, and October 27, 2022

#### 2.1.1 DRAINAGE BASINS

All streams in the vicinity of the ESC drain to East Branch Portage River or the Sandusky River, which are traditionally navigable waterways (TNWs). The ESC is located within the Cedar-Portage (Hydrologic Unit Code [HUC] 04100010) and the Sandusky (HUC 04100011) drainage basin. The ESC lies within two 12-digit sub watersheds, as outlined in Table 2-2 (USDA, 2019).

The OEPA 401 Water Quality Certification for the Nationwide Permits Web Mapping Application indicates that field-assessed streams within both of the 12-digit sub-watersheds are denoted as “Eligible”. Watersheds denoted as



“Eligible” require an individual 401 Water Quality Certification (WQC) for all stream impacts, if Ohio general and special limitations and conditions for the nationwide permits are not met (OEPA, 2020).

**TABLE 2-2: 12-DIGIT HUC’S CROSSED BY THE PROJECT**

8-DIGIT HUC CODE <sup>1</sup>	8-DIGIT HUC CODE NAME <sup>1</sup>	12-DIGIT HUC CODE <sup>1</sup>	12-DIGIT HUC NAME <sup>1</sup>	OHIO EPA SECTION 401 ELIGIBILITY <sup>2</sup>
04100010	Cedar-Portage	04100010-02-02	East Branch Portage River	Eligible
04100011	Sandusky	04100011-10-04	Plum Run-Wolf Creek	Eligible

<sup>1</sup>Source: USDA, 2019

<sup>2</sup>Source: OEPA, 2020



## 3 METHODOLOGY

On July 25, September 14, and October 26, 2022 a WSP ecologist traversed the approximately 4.1-miles long ESC (approximately 53-acres) to conduct a wetland and waters delineation. The physical boundaries of aquatic resources were recorded using a Trimble Global Positioning System (GPS) unit rated for sub-decimeter accuracy. The GPS data was then geo-corrected using Trimble GPS Pathfinder Office software (version 5.60) and reviewed for quality control.

Prior to conducting field surveys, the WSP ecologist completed a desktop review by analyzing several federal and state documents for the presence of wetland and streams. This review included Natural Resources Conservation Service (NRCS) soil survey data, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps of Ohio, USGS 7.5-minute topographic maps, and USGS National Hydrography Dataset (NHD) stream and river data as an exercise to identify the occurrence and location of potential wetlands and streams.

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### 3.1 WETLAND AND STREAM DELINEATION

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#### 3.1.1 WETLAND DELINEATION

The USACE and the U.S. Environmental Protection Agency (USEPA) define wetlands as areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR, Part 328.3).

Wetlands were delineated according to Section 404 of the Clean Water Act, Technical Report Y-87-1 *Corps of Engineers Wetlands Delineation Manual ('87 Manual)* (Environmental Laboratory, 1987), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest, (Version 2.0) (Regional Supplement)* (USACE, 2010). Representative data points were collected for wetlands and corresponding, adjacent upland areas. Wetland data was recorded on the USACE *Regional Supplement Wetland Determination Data Forms*.

Wetland vegetation communities were classified according to the *Classification of Wetlands and Deepwater Habitats of the United States*, commonly referred to as the Cowardin Classification System (Cowardin et al., 1979). Wetlands within the ESC were assessed using the OEPA *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM) to determine the ecological quality and level of disturbance (Mack, 2001).

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#### 3.1.2 STREAM DELINEATION AND ASSESSMENT

Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). The OHWM is defined in the USACE *Regulatory Guidance Letter No. 05-05* (USACE, 2005). Generally, the OHWM is identified by a clearly defined, natural line along the stream bank created by fluctuations and flow of water; this may include changes in contours, substrate, vegetation, and debris (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 *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 3* (Davic, 2012).



# 4 RESULTS

A WSP ecologist surveyed the Project on July 25, September 14, and October 26, 2022 by walking the approximately 53-acre ESC and evaluating for wetlands and other WoUS. The WSP ecologist identified four wetlands and two streams, within the ESC. Additionally, multiple non-jurisdictional drainages were also identified within the ESC. The identified water resources are depicted on the Delineated Features Map (Figure 3, Appendix A).

## 4.1 DESKTOP REVIEW

### 4.1.1 SOILS EVALUATION

According to the NRCS Soil Data for Hancock and Seneca Counties, Ohio, there are 9 soil map units identified within the ESC, as presented in Table 4-1. The soils observed by the WSP ecologist during the reconnaissance of the ESC were consistent with the NRCS soil survey mapping.

TABLE 4-1: SOIL UNITS MAPPED WITHIN THE ESC

SOIL UNIT SYMBOL	SOIL UNIT NAME	PERCENT HYDRIC	HYDRIC RATING <sup>1</sup>	AREA WITHIN ESC (ac.)
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	9	Predominately Non-Hydric	32.3
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	9	Predominately Non-Hydric	1.3
BrA	Blount-Houcktown complex, 0 to 3 percent slopes	5	Predominately Non-Hydric	0.6
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	6	Predominately Non-Hydric	<0.01
HkB	Haskins loam, 2 to 6 percent slopes	3	Predominately Non-Hydric	0.1
HnB	Houcktown loam, 2 to 6 percent slopes	9	Predominately Non-Hydric	0.8
Le	Lenawee silty clay loam	100	All Hydric	0.4
Pa	Pandora silt loam	92	Predominately Hydric	3.5
Pm*	Pewamo silty clay loam, 0 to 1 percent slopes	91	Predominately Hydric	14.1
<b>Total Area of Predominately Non-Hydric Soils</b>				<b>35.1</b>
<b>Total Area of Predominately Hydric Soils</b>				<b>17.6</b>
<b>Total Area of All Hydric Soils</b>				<b>0.40</b>

<sup>1</sup>Non-Hydric = 0% hydric soil component; Predominately Non-Hydric = 1-32%; Partially Hydric =33-65%; Predominantly Hydric = 66-99%; and All Hydric = 100%.

\*Soils unit symbols with an asterisk denote map units which had a map unit in both Hancock County and Seneca County; therefore each map unit has a unique symbol.

Source: Soil Survey Staff, NRCS. Web Soil Survey.

### 4.1.2 NATIONAL WETLAND INVENTORY REVIEW

According to the NWI maps of the Alvada and Fostoria, Ohio quadrangle boundaries, there are two mapped NWI features within the ESC. The documented NWI features within the ESC and associated identified resources are presented in Table 4-2. The location of the NWI mapped wetlands are shown on Figure 2 (Appendix A).



TABLE 4-2: NWI FEATURES MAPPED WITHIN THE ESC

NWI CODE	NWI DESCRIPTION	MAP PAGE	ASSOCIATED DELINEATED RESOURCE
R4SBC	Riverine, Intermittent, Stream Bed, Seasonally Flooded	Pages 3 – 5 of 12	Stream IT 001 (Intermittent)
R4SBC	Riverine, Intermittent, Stream Bed, Seasonally Flooded	Page 6 of 12	Stream IT 002 (Intermittent)
R4SBC	Riverine, Intermittent, Stream Bed, Seasonally Flooded	Page 9 of 12	No Identified Resource

Source: USFWS National Wetlands Inventory Map.

### 4.1.3 FEMA FLOODPLAIN REVIEW

According to Federal Emergency Management Agency (FEMA) National Flood Hazard Layer, the Project ESC does not lie within any 100-year floodplains or regulated floodways. The location of the documented 100-year floodplain boundaries in relation to the ESC is depicted on Figure 2 (Appendix A).

## 4.2 DELINEATED WETLANDS

During environmental surveys of the ESC, the WSP ecologist identified four wetlands totaling 0.51 acres, containing a mix of wet-mesic species, dominated by herbaceous plants including *Carex sp.*, *Juncus sp.*, and *Impatiens sp.* among others, which were less prevalent. The identified wetlands ranged in size from 0.03 acres to 0.33 acres within the ESC. Two of the delineated wetlands were identified to be palustrine forested (PFO) wetlands, one wetland was identified as palustrine emergent (PEM) wetlands, and the remaining wetland identified as a wetland complex, containing mosaics of PEM and PFO wetland communities. Three of the four identified wetlands were determined to be Category Two, and the remaining wetland was determined to be Category One. No Category Three wetlands were identified within the ESC. All four of the identified wetlands appear to lack a hydrological connection to surface waters and are likely to be considered hydrologically isolated. However, it should be noted that final determination of wetland jurisdiction will be made by the USACE. The identified wetlands in relation to the ESC are shown on Figure 3, Appendix A.

Table 4-3 provides specific wetland habitat types, acreages within the ESC, ORAM category, as well as information regarding jurisdictional status. USACE wetland determination forms are provided in Appendix B. ORAM forms are included in Appendix C. Representative photographs of the wetland as well as the upland verification data point were taken and are provided in Appendix E.



**TABLE 4-3: WETLANDS DELINEATED WITHIN THE ESC**

WETLAND ID	LOCATION		COWARDIN CLASS. <sup>1</sup>	DELINEATED AREA <sup>2</sup> (acres)	ORAM		HYDROLOGIC CONNECTION	PROXIMAL WATERBODY
	LAT.	LON.			SCORE	CATEGORY		
Wetland IT 001	41.1024	-83.4207	PFO	0.03	33	Category 2	Isolated	N/A
Wetland IT 002	41.1148	-83.4216	PFO	0.11	32	Category 2	Isolated	N/A
Wetland IT 003	41.1156	-83.4215	PFO/PEM	0.33	35	Category 2	Isolated	N/A
Wetland IT 008	41.1319	-83.4191	PEM	0.04	17	Category 1	Isolated	N/A
Sum of PEM Wetland Areas				0.10				
Sum of PFO Wetland Areas				0.41				
<b>Total Wetland Area</b>				<b>0.51</b>				

<sup>1</sup>PEM = palustrine emergent, PSS = palustrine scrub/shrub. PFO = palustrine forested;

<sup>2</sup>Acresages reflect the area delineated within the ESC and are approximate based on GPS data and are rounded to the nearest 0.01-acre.

### 4.3 STREAMS AND RIVERS

During the environmental survey, the WSP ecologist identified two streams totaling 447 linear feet within the ESC. The delineated streams were identified as intermittent and were assessed using the HHEI methodology. No perennial or ephemeral streams were identified within the ESC. The identified streams were determined to be unnamed tributaries to East Branch Portage River. The identified streams drain to East Branch Portage River which flows into the Portage River, a traditionally navigable waterway (TNW.) It should be noted that the USACE will make the final determination of jurisdictional status. The identified streams had defined bed and bank, with substrates containing cobble, gravel, silt, clay, and leaf pack, and had a drainage basin of ranging from 0.60 mi<sup>2</sup> to 0.77 mi<sup>2</sup>.

The location of the identified streams within the ESC are shown in Figure 3 (Appendix A). Table 4-4 provides waterbody name, flow regime, stream length within the ESC, field evaluation data and Ohio EPA Section 401 eligibility. OEPA Stream Data Forms are included in Appendix D. Representative photographs were taken of the identified streams during the field survey and are provided in Appendix E.

In addition to the jurisdictional stream identified, all swales, ditches, erosional features, and other surface drainages within the ESC were also evaluated for consideration as jurisdictional Waters of the U.S. with respect to the Clean Water Act. Jurisdictional ditches must meet the definition of tributary, have an OHWM, and flow directly or indirectly through another water to a TNW. Multiple erosional features, roadside ditches, and vegetated swales were observed throughout the ESC, however, none of the identified ditches or drainages would be considered jurisdictional within the ESC. These features were excavated in upland soils to convey upland drainage and had no defined bed and bank or flow regime to constitute a Waters of the U.S. designation. Locations of identified non-jurisdictional drainages identified within the ESC are shown in Figure 3, Appendix A.





**TABLE 4-4: STREAMS DELINEATED WITHIN THE ESC**

STREAM ID	LOCATION		STREAM NAME	STREAM TYPE	DELINEATED LENGTH (FEET)	BANKFULL WIDTH (FEET)	OHWM WIDTH (FEET)	FIELD EVALUATION			OHIO EPA 401 ELIGIBILITY
	LAT	LONG						METHOD	SCORE	CLASS	
Stream IT 001	41.1202	-83.4245	UNT to East Branch Portage River	Intermittent	351	6	4	HHEI	53	Modified Small Drainage Warmwater Stream	Eligible
Stream IT 002	41.1202	-83.4245	UNT to East Branch Portage River	Intermittent	96	5	2	HHEI	37	Modified Small Drainage Warmwater Stream	Eligible

**Total Stream Length in ESC 447**

Notes: UNT = unnamed tributary, WWH = Warmwater Habitat, EWH = Exceptional Warmwater Habitat  
 Lengths are approximate based on GPS data and are rounded to the nearest foot.

## 4.4 PONDS AND OPEN WATER

During the July 25, September 14, and October 26, 2022 field surveys, no open water features were identified within the ESC. Representative photographs of the ESC are provided in Appendix E.

## 4.5 VEGETATIVE COMMUNITIES

The WSP ecologist conducted a general habitat survey in conjunction with the stream and wetland field surveys. A variety of woody and herbaceous habitats, as described below in Table 4-5, are present within the ESC. A breakdown of vegetated land cover is provided, overlain on aerial photography in Figure 4 (Appendix A). Representative photographs of the Project ESC are included in Appendix E.



**TABLE 4-5: VEGETATIVE COMMUNITIES WITHIN THE ESC**

VEGETATIVE COMMUNITY	DESCRIPTION	ACREAGE WITHIN THE ESC	PERCENTAGE OF ESC
Cultivated Cropland	Agricultural land primarily consisting of soybean fields were present within the ESC.	37.0	69.8%
Developed, High Intensity	These areas consist of developed residential, industrial, and commercial land uses, including roads, buildings, and parking lots. These areas are generally devoid of significant vegetation.	0.3	0.5%
Developed, Medium Intensity	Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for the majority of the total cover. These areas most commonly include single-family housing.	0.7	1.4%
Developed, Open Space	Developed areas, including residential and commercial properties, were observed within the ESC. These landscaped areas are frequently mowed or maintained grasses and forbs.	0.21	3.8%
Old Field	Old Field habitats represent the successional stage between Developed, Open Space and Scrub/Shrub habitat. Often times these areas are previously developed areas that have been left fallow, which area maintained (mowed) once or twice a year.	6.0	11.4%
Scrub Shrub	Areas dominated primarily by shrubs (native or disturbance tolerant non-native and/or invasive species); less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, and young trees in an early successional stage.	0.1	0.2%
Successional Hardwood Woodland	Upland forested areas dominated primarily by native deciduous hardwood species, including red maple ( <i>Acer rubrum</i> ), American beech ( <i>Fagus grandifolia</i> ), and American Sycamore ( <i>Platanus occidentalis</i> ) among others.	6.3	11.9%
Wetlands and Waterbodies	Wetlands, Streams, and Open Water features delineated within the ESC boundaries.	0.5	1.1%
<b>Total</b>		<b>53.0</b>	<b>100%</b>

## 4.6 THREATENED AND ENDANGERED SPECIES COORDINATION

The first phase of the evaluation involved a review of online lists of federal and state species of concern. In addition to the review of available literature and a request for Environmental Review was submitted to the Ohio Department of Natural Resources (ODNR). A coordination letter was also submitted to the USFWS soliciting comments on the Project. Detailed descriptions of the agency coordination are provided in proceeding sections. Correspondence from the USFWS and ODNR is included as Appendix F.

### 4.6.1 USFWS COORDINATION

A request for review was submitted to the USFWS on July 27, 2022. In an email dated August 5, 2022 the USFWS provided comments on the Project with regard to federally-listed threatened and endangered species 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. Comments from USFWS regarding protected species are provided in Table 4-6. The USFWS review comments have been included in Appendix F.

#### 4.6.2 ODNR COORDINATION

A request for Environmental Review was submitted to the ODNR on July 27, 2022. The ODNR Environmental Review response dated August 15, 2022 included comments from the Ohio Natural Heritage Database Program, Division of Wildlife (DOW), and Division of Water Resources. A review of the Natural Heritage Database did not identify any records of state-listed species, high-quality native communities, or protected natural areas within the one-mile of the Project. However, the ranges of multiple species were identified within a one-mile radius of the ESC. Using this as guidance, WSP has provided observations of threatened and endangered species habitat within the vicinity of the ESC in Table 4-6. The ODNR Environmental Review has been included in Appendix F.

**TABLE 4-6: LISTED SPECIES COMMENTED ON BY ODNR AND USFWS**

COMMON NAME (SCIENTIFIC NAME)	STATE STATUS	FEDERAL STATUS	HABITAT DESCRIPTION	POTENTIAL HABITAT OBSERVED IN ESC	AGENCY COMMENT	WSP IMPACT ASSESSMENT
Mammals						
Indiana bat ( <i>Myotis sodalis</i> )	Endangered	Endangered	Winter hibernacula are provided by caves and mines. Summer roost habitat typically includes live or dead trees with exfoliating bark, crevices, or cavities that can be used for roosting. Open sub-canopy areas and flight corridors are important to allow maneuvering during foraging. Proximity to water sources provides a greater density of insect prey.	Yes (Summer)	USFWS and ODNR comments indicated the Project is within the range of the four bat species and recommended seasonal tree clearing dates (October 1 through March 31) to avoid impacts protected bat species.  ODNR also recommended a desktop habitat assessment for potential hibernacula within a 0.25-mile radius of the ESC.	Potentially suitable summer habitat may be provided by forested areas within the ESC.
northern long-eared bat ( <i>Myotis septentrionalis</i> )	Threatened	Threatened				No potential hibernacula were identified within 0.25-miles of the ESC and no potential hibernacula were identified within the ESC during the July 25, 2022 surveys.
tri-colored bat ( <i>Perimyotis subflavus</i> )	Endangered	Not Listed				All tree clearing/trimming should occur within the recommended seasonal clearing window (October 1 – March 31).
little brown bat ( <i>Myotis lucifugus</i> )	Endangered	Not Listed				



**TABLE 4-6: LISTED SPECIES COMMENTED ON BY ODNR AND USFWS**

COMMON NAME (SCIENTIFIC NAME)	STATE STATUS	FEDERAL STATUS	HABITAT DESCRIPTION	POTENTIAL HABITAT OBSERVED IN ESC	AGENCY COMMENT	WSP IMPACT ASSESSMENT
<b>Reptiles</b>						
Kirtland's snake ( <i>Clonophis kirtlandii</i> )	Threatened	Not Listed	This secretive species prefers wet meadows and other wetlands.	No	ODNR indicated that due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.	No impact to this species or its habitat is anticipated to occur.
<b>Mussels</b>						
clubshell ( <i>Pleurobema clava</i> )	Endangered	Endangered	This species is found in small to medium streams with gravel/sand substrate and relatively little silt.	No	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.	Potentially suitable habitat was not identified within the ESC and no in-water work is anticipated to occur. Therefore, no impacts to these species or their habitat are anticipated to occur.
rayed bean ( <i>Villosa fabalis</i> )	Endangered	Endangered	This species is generally lives in smaller, headwater creeks, but they are sometimes found in large rivers.	No		
purple lilliput ( <i>Toxolasma lividum</i> )	Endangered	Not Listed	This species occurs in lakes and small to medium streams in gravel substrates.	No		
pondhorn ( <i>Uniomorus tetralasmus</i> )	Threatened	Not Listed	This species inhabits ponds, small creeks, and the headwaters of larger streams in mud or sand	No		
Salamander Mussel ( <i>Simpsonaias ambigua</i> )	Threatened	Not Listed	This species requires very habitat specific, living only under flat rocks or under ledges of rock walls.	No		



**TABLE 4-6: LISTED SPECIES COMMENTED ON BY ODNR AND USFWS**

COMMON NAME (SCIENTIFIC NAME)	STATE STATUS	FEDERAL STATUS	HABITAT DESCRIPTION	POTENTIAL HABITAT OBSERVED IN ESC	AGENCY COMMENT	WSP IMPACT ASSESSMENT
<b>Fish</b>						
western banded killifish ( <i>Fundulus diaphanus menona</i> )	Endangered	Not Listed	This species is most often found in the shallow and quiet areas of clear lakes, ponds, rivers, and estuaries with sandy gravel or muddy bottoms and with abundant aquatic vegetation.	No	The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.	Potentially suitable habitat was not identified within the ESC and no in-water work is anticipated to occur. Therefore no impacts to these species or its habitat are anticipated to occur.
<b>Birds</b>						
least bittern ( <i>Ixobrychus exilis</i> )	Threatened	Not Listed	This secretive marsh species prefers large dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water.	No	If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 through July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.	No potentially suitable habitat was identified within the ESC. Therefore, impacts to this species or its habitat are not anticipated to occur.
northern harrier ( <i>Circus hudsonis</i> )	Endangered	Not Listed	Nests are rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands.	No	If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.	No potentially suitable habitat was identified within the ESC. Therefore, impacts to this species or its habitat are not anticipated to occur.



## 5 SUMMARY

WSP conducted environmental surveys of the proposed approximately 4.1-mile long Iron Triangle 138 kV Transmission Line Project on July 25, September 14, and October 26, 2022. Four wetlands and two streams were delineated by the WSP ecologist within the approximately 53-acre ESC. No potential hibernacula were identified within 0.25-miles of the ESC and no potential hibernacula were identified within the ESC during the field survey.

The WSP Ecologist delineated four wetlands totaling 0.51 acres, within the ESC. The identified wetlands ranged in size from 0.03 acres to 0.33 acres within the ESC. Two of the delineated wetlands were identified to be PFO wetlands, one was identified as a PEM wetland, and the remaining wetland was identified as a wetland complex, containing mosaics of PEM and PFO communities. Three of the four identified wetlands were determined to be Category Two, and the remaining wetland was determined to be Category One. No Category Three wetlands were identified within the ESC. All four of the identified wetlands lack a hydrological connection to surface waters and are likely to be considered hydrologically isolated.

Two intermittent streams totaling 447 linear feet were identified within the ESC. The delineated streams were assessed using the HHEI methodology. The identified streams drains to East Branch Portage River which flows into the Portage River, which is a TNW. No open water features were identified within the ESC. The results discussed in this report are confined to the ESC limits described in earlier sections and depicted on Figure 3 (Appendix A).

Based on observations within the ESC during environmental surveys, USFWS comments, and ODNR comments, potential impacts to the Indiana bat and northern long-eared bat are not anticipated if the recommended seasonal clearing dates are utilized. Forested areas that would typically provide potential summer roost habitat for bat species, were located within the ESC.

WSP performed a desktop review for potential hibernacula within the vicinity of the Project as a result of comments from ODNR relating to state- and federally-listed bat species. Topographic maps did not depict caves, cliffs/ledges, or karst topography within a three-mile radius of the ESC. A review of aerial imagery also did not provide evidence of these habitat types. No abandoned underground mines (AUMs) or potential hibernacula were identified within 0.25-miles of the ESC and no potential hibernacula were identified within the ESC during the field survey. It is recommended that all tree clearing will occur within the clearing window (October 1<sup>st</sup> – March 31<sup>st</sup>), to avoid any impacts to these species or their habitat. If any tree clearing will occur outside the recommended clearing window appropriate coordination with USFWS and ODNR will occur to seek permission for out of season tree clearing. Additional information pertaining to the state- and federally-listed bat species is provided in Table 4-6.

It is anticipated that in-stream work is not necessary, therefore no mussel surveys are necessary related to protected mussel species. Additionally, no construction timing windows are required to protect any state- and/or federally-listed fish species.

No potentially suitable habitat was identified within the ESC for either of the two state-listed bird species (northern harrier [*Circus hudsonis*] and least bittern [*Ixobrychus exilis*]). The ESC predominately consists of Cultivated Cropland (37.0 acres), Old Field habitat (6.0 acres), and Successional Hardwood Forest (6.3 acres), among others which were less prevalent. The identified bird species require grassland habitat and large dense marshes with open water, respectively. No grassland habitat was identified within the ESC; therefore, northern harrier habitat was not observed within the ESC. Identified wetland areas that mimic the prefer habitat for the least bittern lack the size (< 1



acre) and quality requirements for this species. Therefore, no impacts to state-listed bird species or their habitat are anticipated to occur as a result of Project activities.

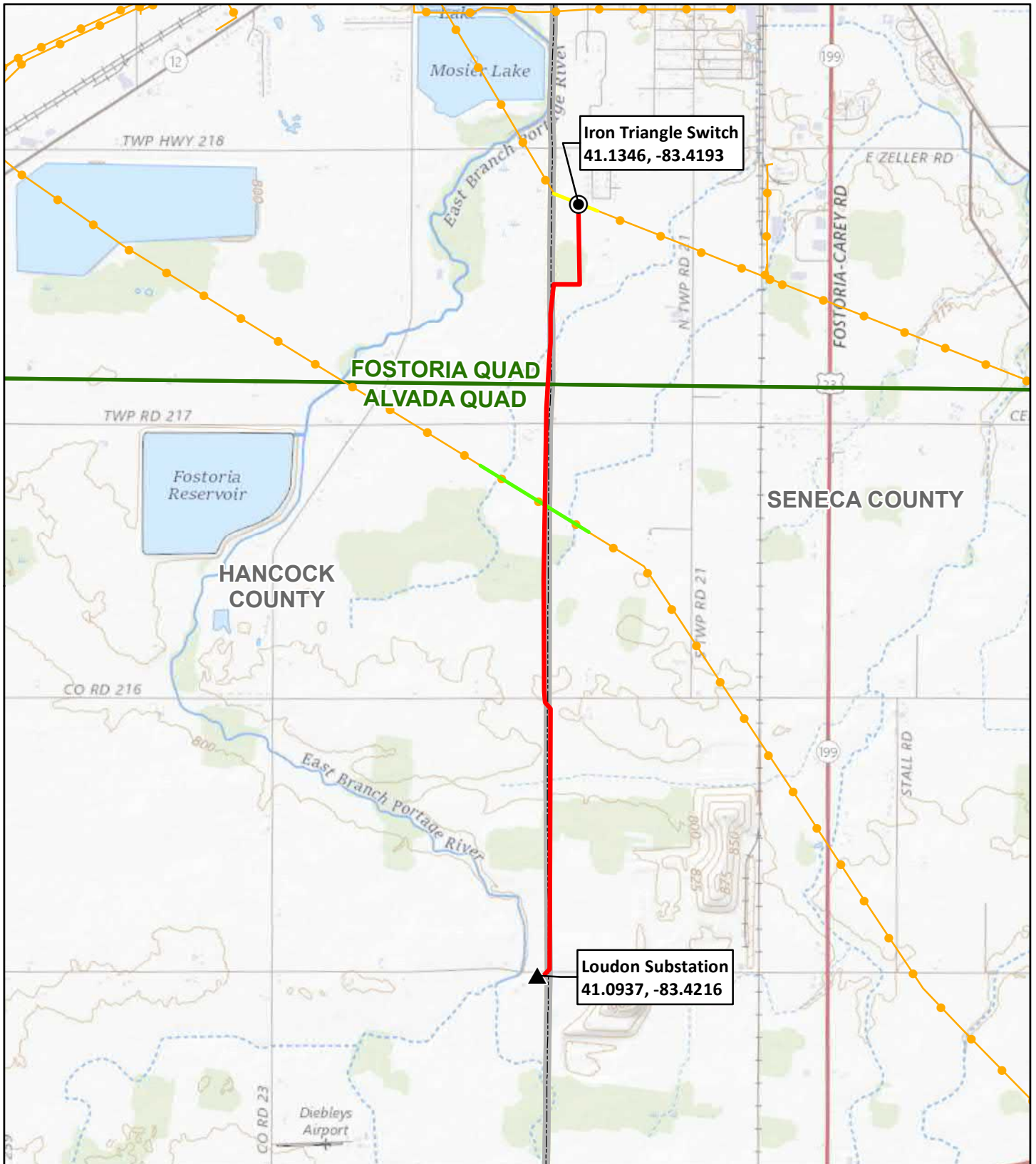


## 6 REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Office of Biological Services, U.S. Fish and Wildlife Service, Washington, D.C.
- Environmental Laboratory. 1987. *U.S. Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station: Vicksburg, Mississippi.
- OEPA. 2012. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 3.0*. Ohio EPA Division of Surface Water, Columbus, Ohio.
- OEPA. 2020. *401 Water Quality Certification for Nationwide Permits*. Available online: [401 Water Quality Certification for Nationwide Permit Eligibility \(arcgis.com\)](#) Accessed 7/22/2022.
- Rankin. 2006. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. Ohio EPA Technical Bulletin EAS/2006-06-1.
- USACE. 2005. *Regulatory Guidance Letter No. 05-05*.
- USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USDA, NRCS. 2019. *Geospatial Data Gateway - Watershed Boundary Dataset*. Available online: <https://datagateway.nrcs.usda.gov/>. Accessed 7/22/2022.
- USDA, NRCS. 2017. *Field Indicators of Hydric Soils in the United States, Version 8.1*. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- USDA, NRCS. 2015b. *National Hydric Soils List (December 2015)*. Available online: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>, Accessed 7/22/2022.
- USDA, NRCS. Soil Survey Staff. Web Soil Survey. Available online at: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- USFWS. 2019. *National Wetlands Inventory Map – Alvada and Fostoria, Ohio quadrangles*. Available online at: <https://www.fws.gov/wetlands/data/mapper.html>.
- USGS. 2007. National Hydrography Dataset. Available at: <http://nhd.usgs.gov/data.html>.

# APPENDIX

## A FIGURES



- ▲ Proposed Substation
- Proposed Switch
- Proposed Iron Triangle 138 kV Transmission Line
- Proposed Howard-Fostoria 138 kV Mid-Span Structure Project
- Proposed Ohio Central-Fostoria 345 kV Line Raise Project
- Existing Transmission Line
- USGS 24k Topo Quad Boundary
- ▭ County Boundary

Sources:  
Topo (USGS)  
Quad Boundaries (USGS)



Coordinate System:  
State Plane Ohio North  
NAD 1983

October 26, 2022



**IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT**


**Figure 1. Project Location Map**

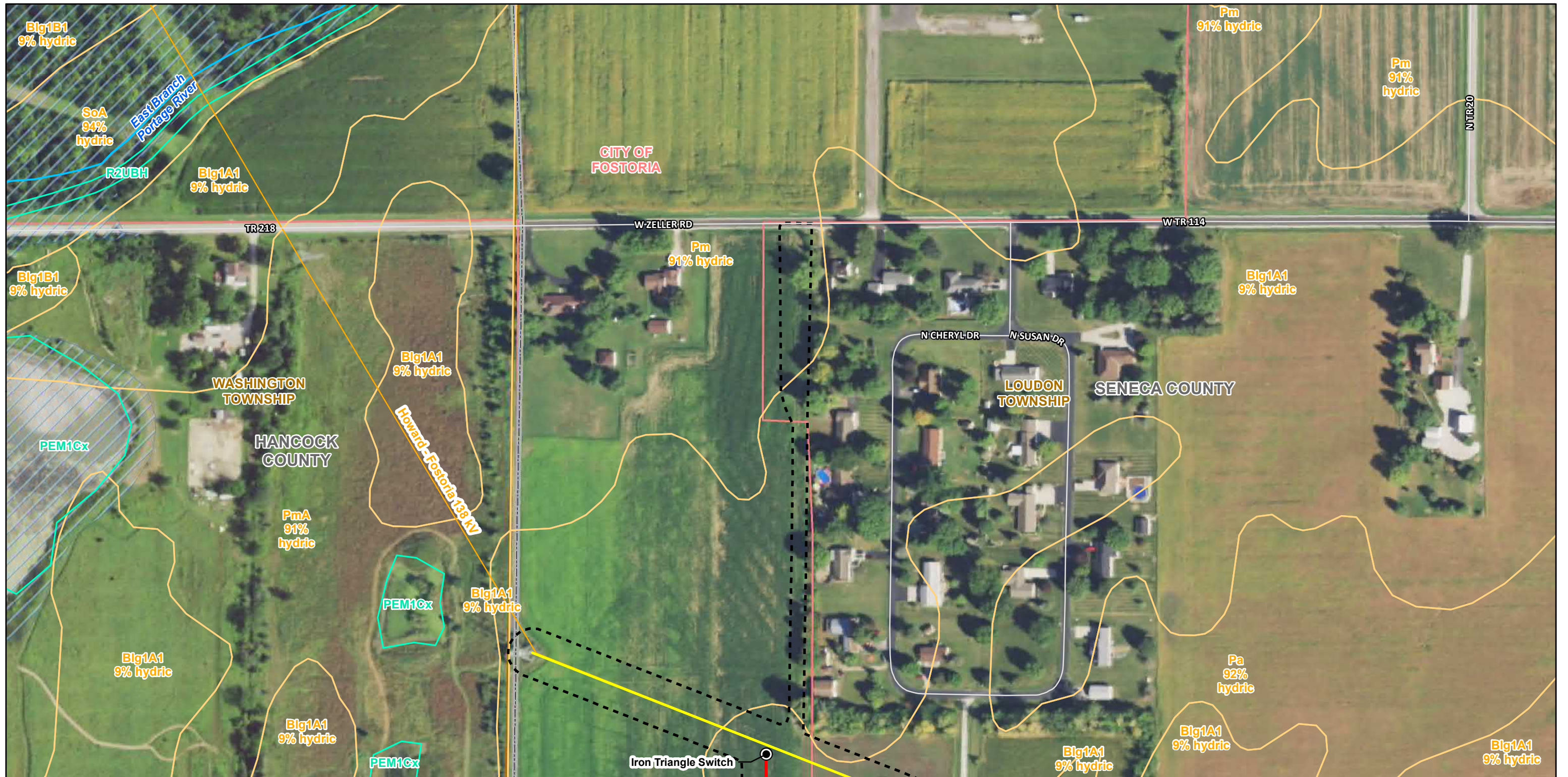
0    0.25    0.5

Miles

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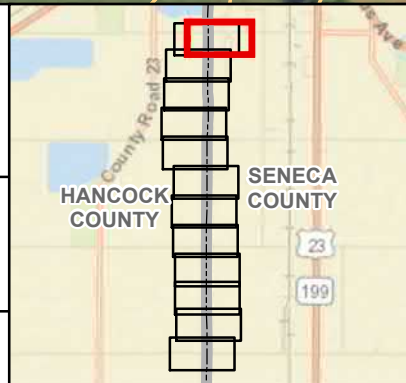


▲ Proposed Substation	□ NWI Wetlands
● Proposed Switch	□ NHD Waterbody
— Proposed Iron Triangle 138 kV Transmission Line	□ Soil Map Unit
— Proposed Howard-Fostoria 138 kV Mid-Span Structure Project	□ FEMA 100-Yr Floodplain
— Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	□ FEMA Floodway
— Existing Transmission Line	□ Municipal Boundary
— Railroad	□ Township Boundary
— NHD Stream	□ County Boundary
□ Environmental Survey Corridor	

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022

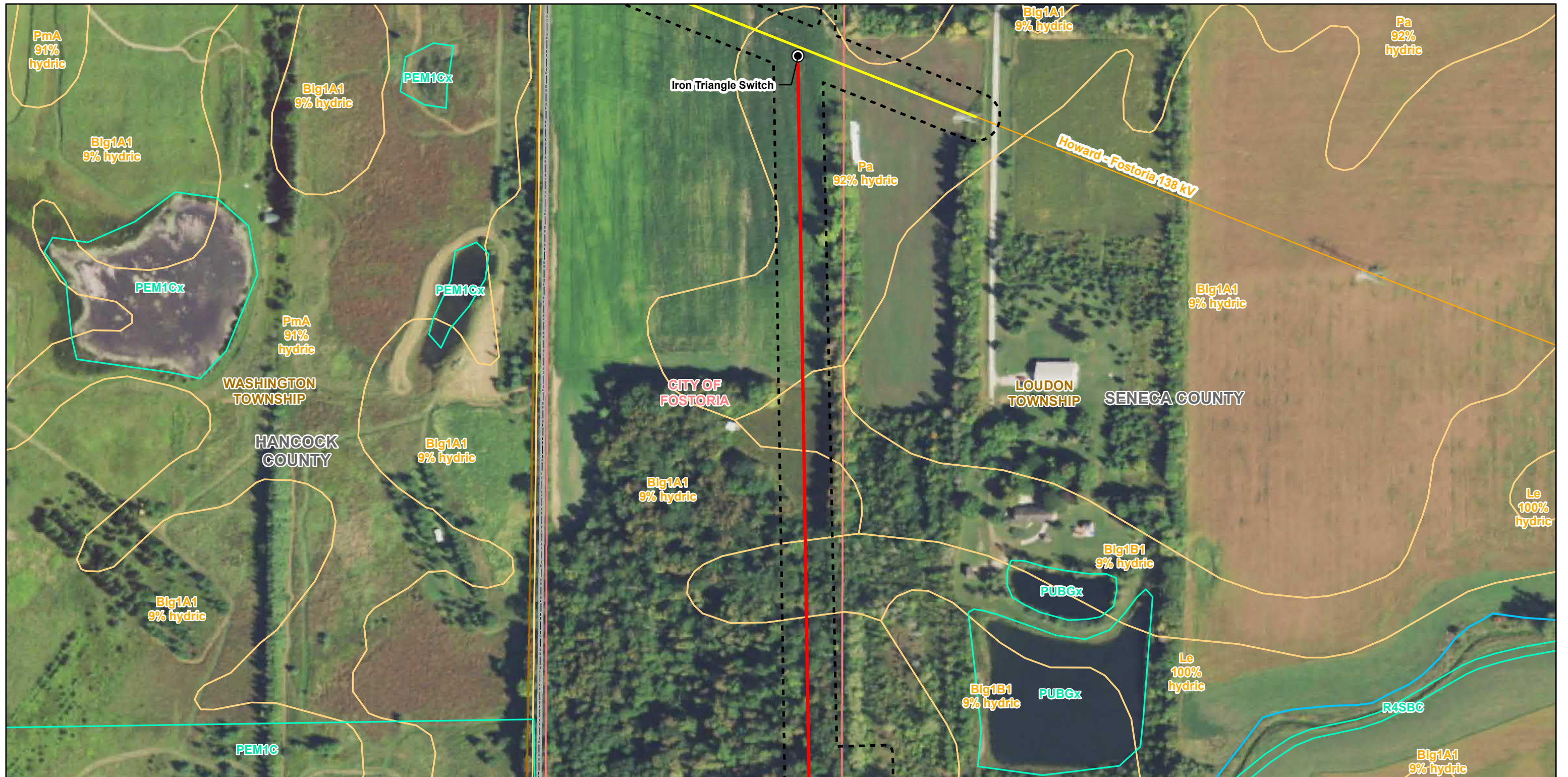


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

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0 200 400 Feet

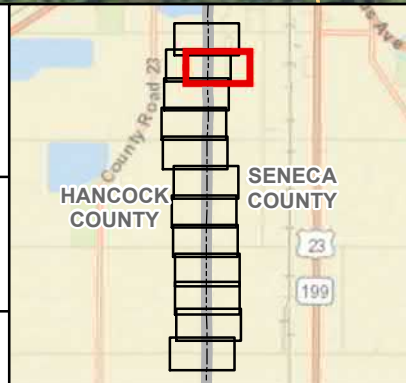


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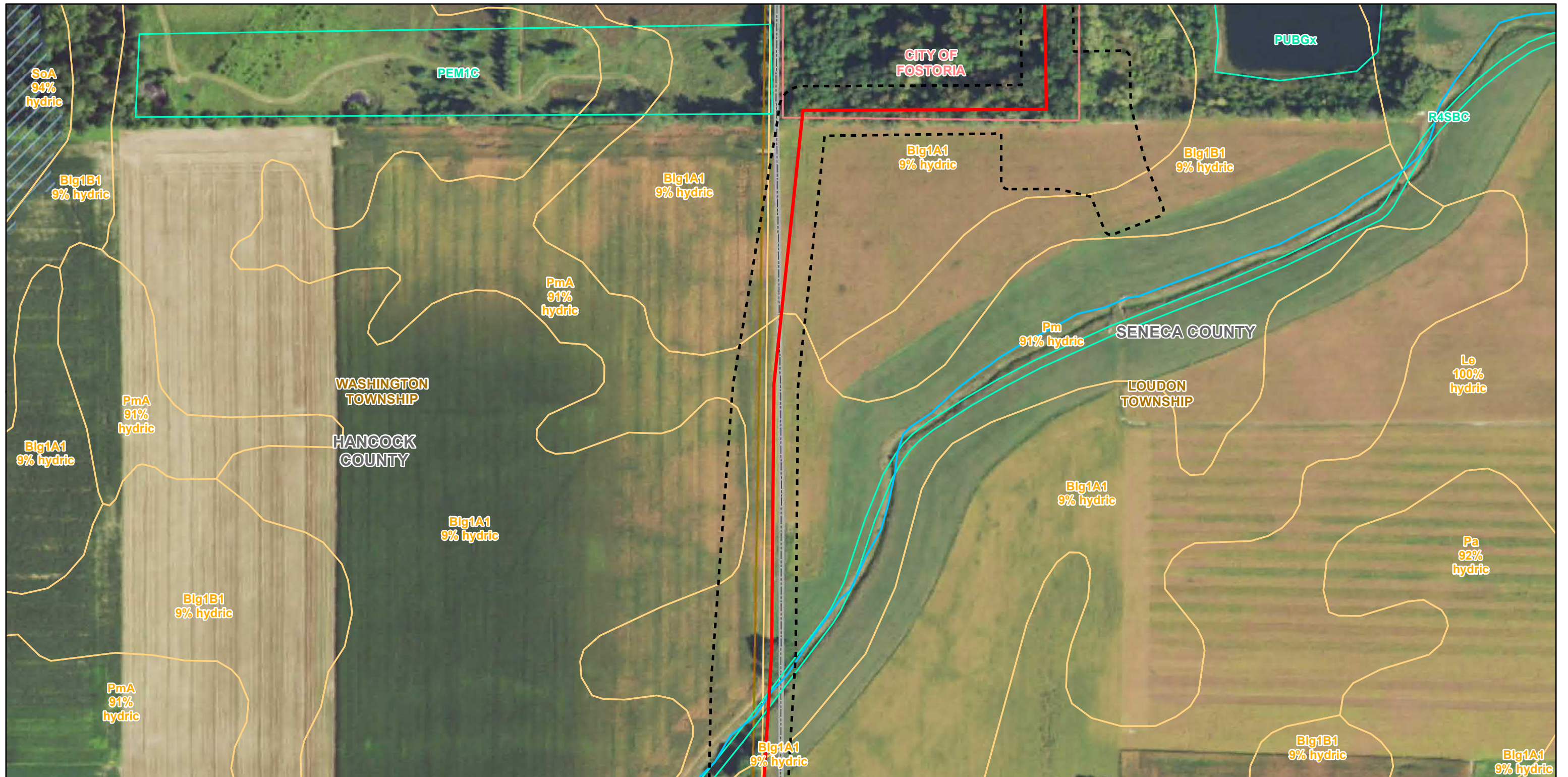


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

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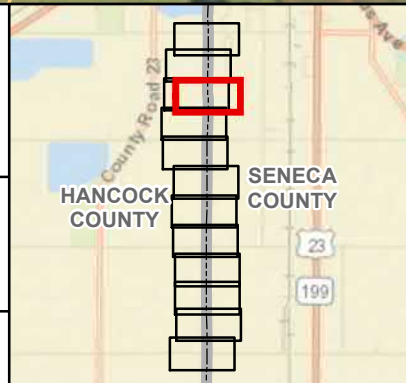


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October 26, 2022



IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

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0 200 400 Feet

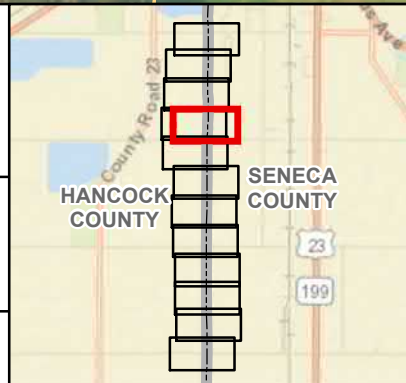


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October 26, 2022



IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

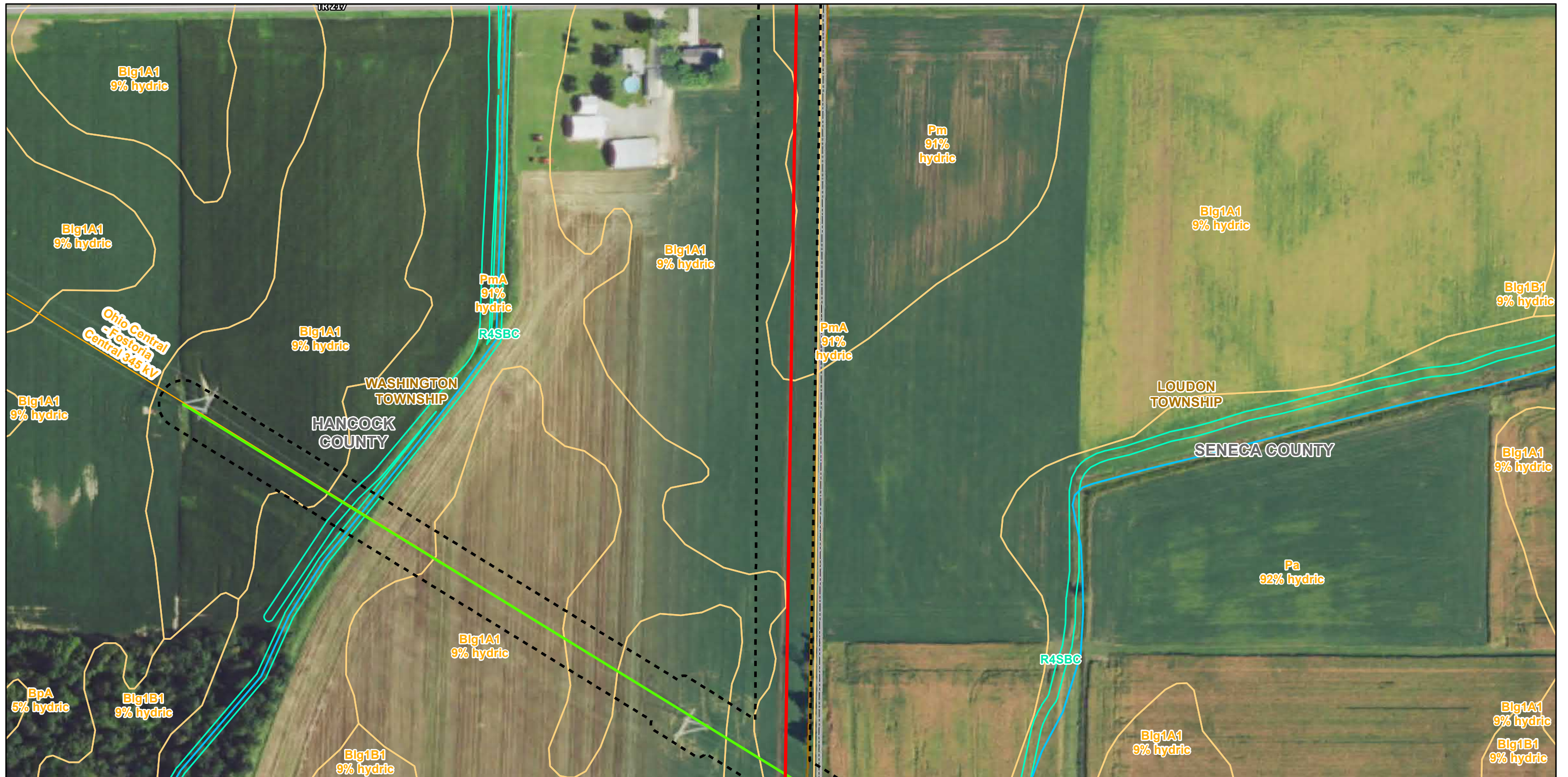
**Figure 2. Environmental Basemap**

AEP OHIO

WSP

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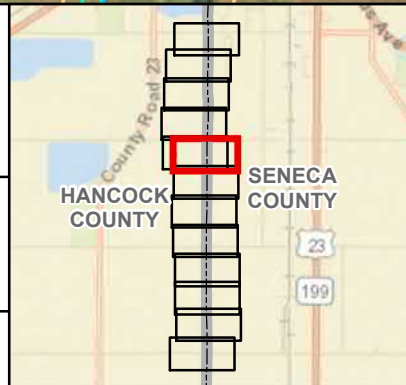


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October 26, 2022

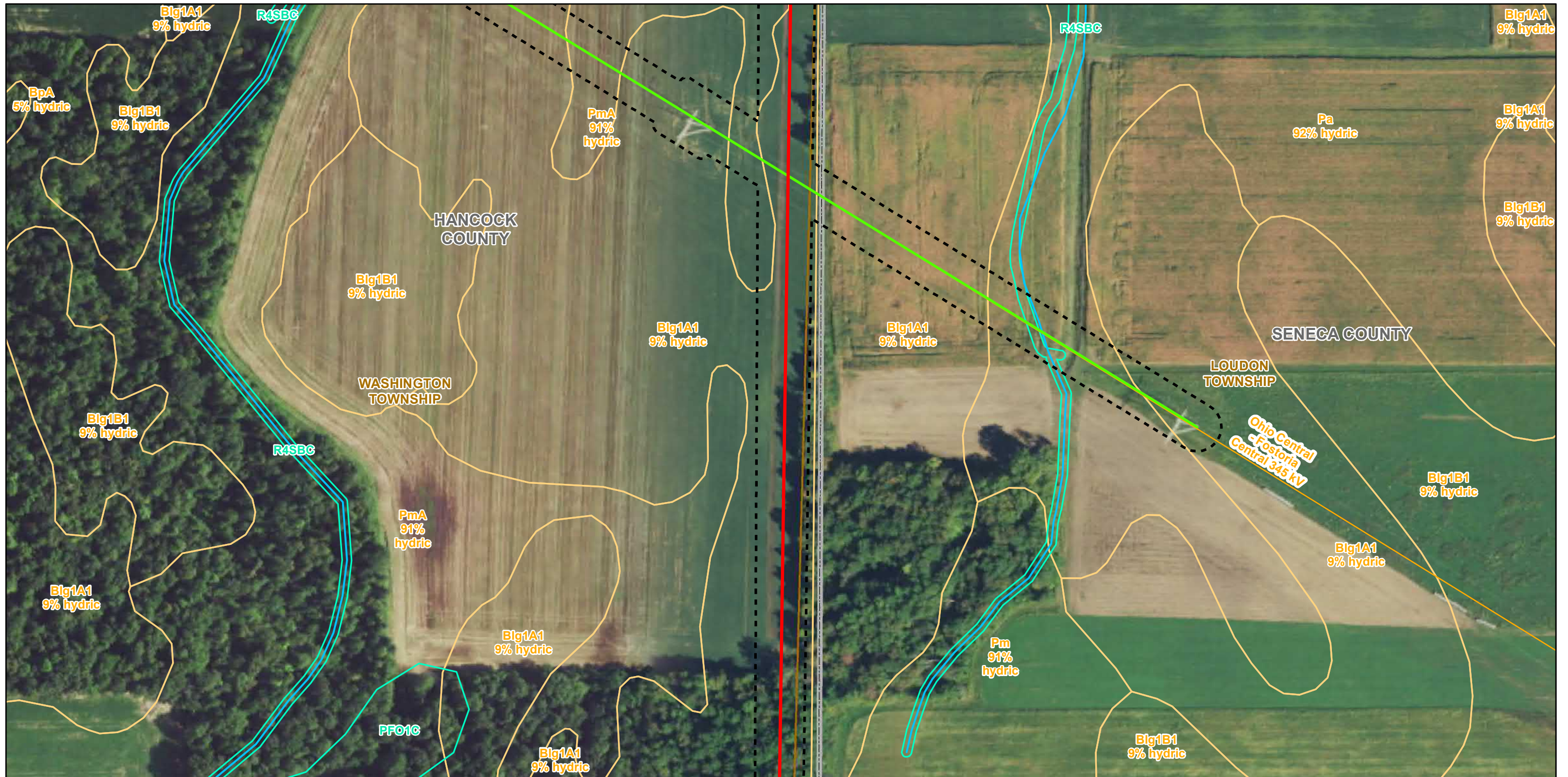


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

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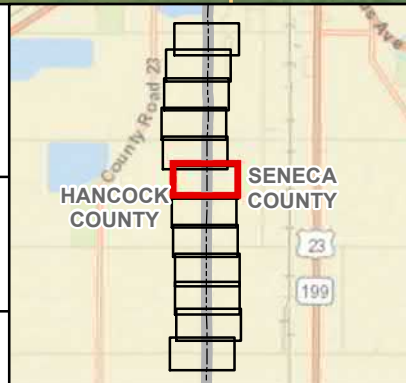


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Coordinate System:  
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October 26, 2022



IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

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0 200 400 Feet

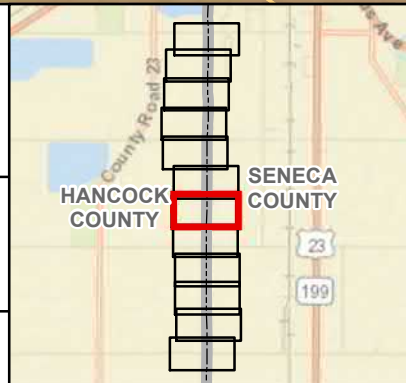


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 NAD 1983

October 26, 2022

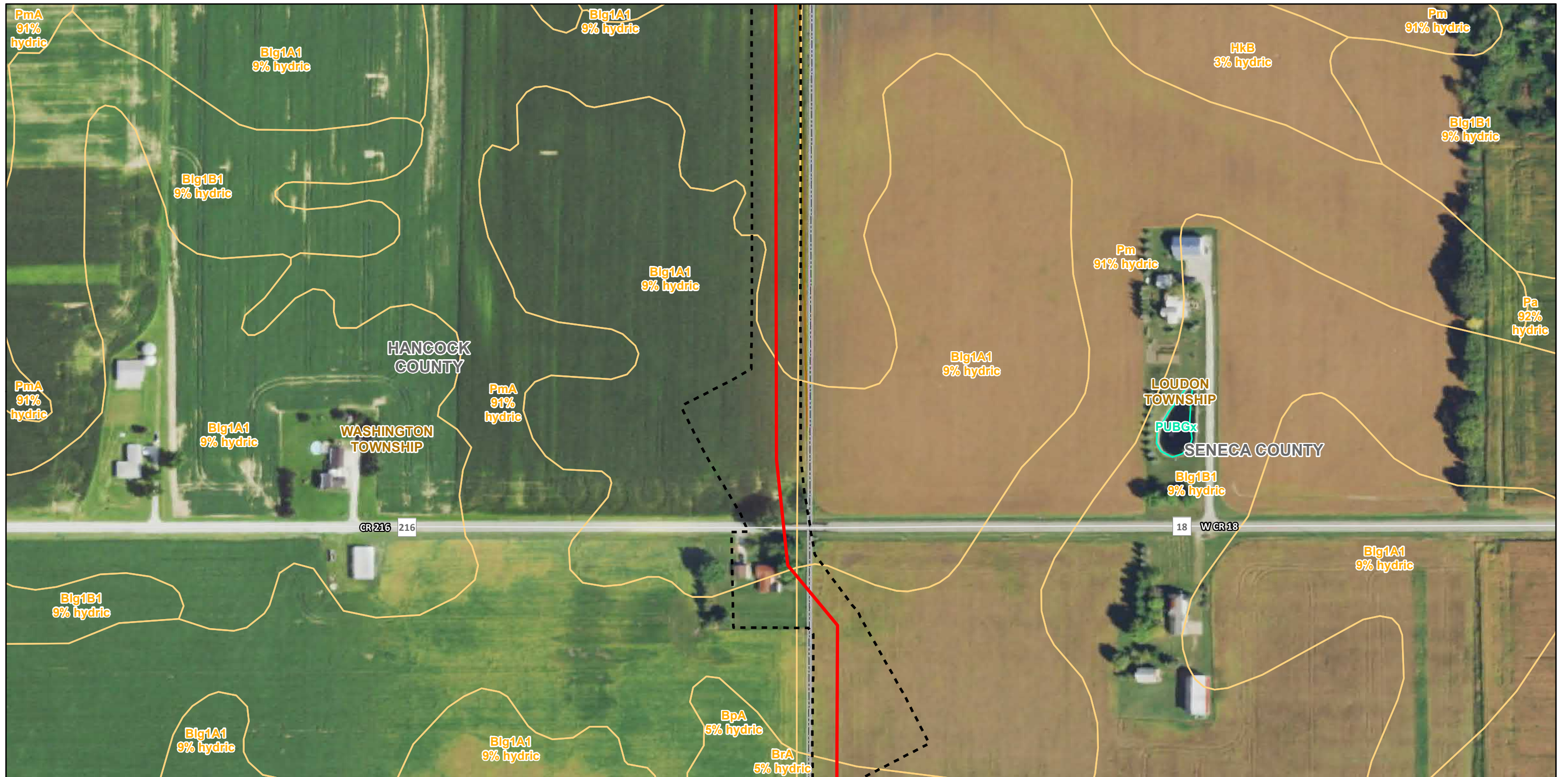


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

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0 200 400 Feet

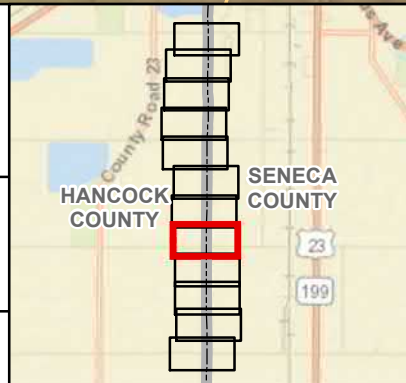


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— Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	□ FEMA Floodway
— Existing Transmission Line	□ Municipal Boundary
— Railroad	□ Township Boundary
— NHD Stream	□ County Boundary
— Environmental Survey Corridor	

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022



IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

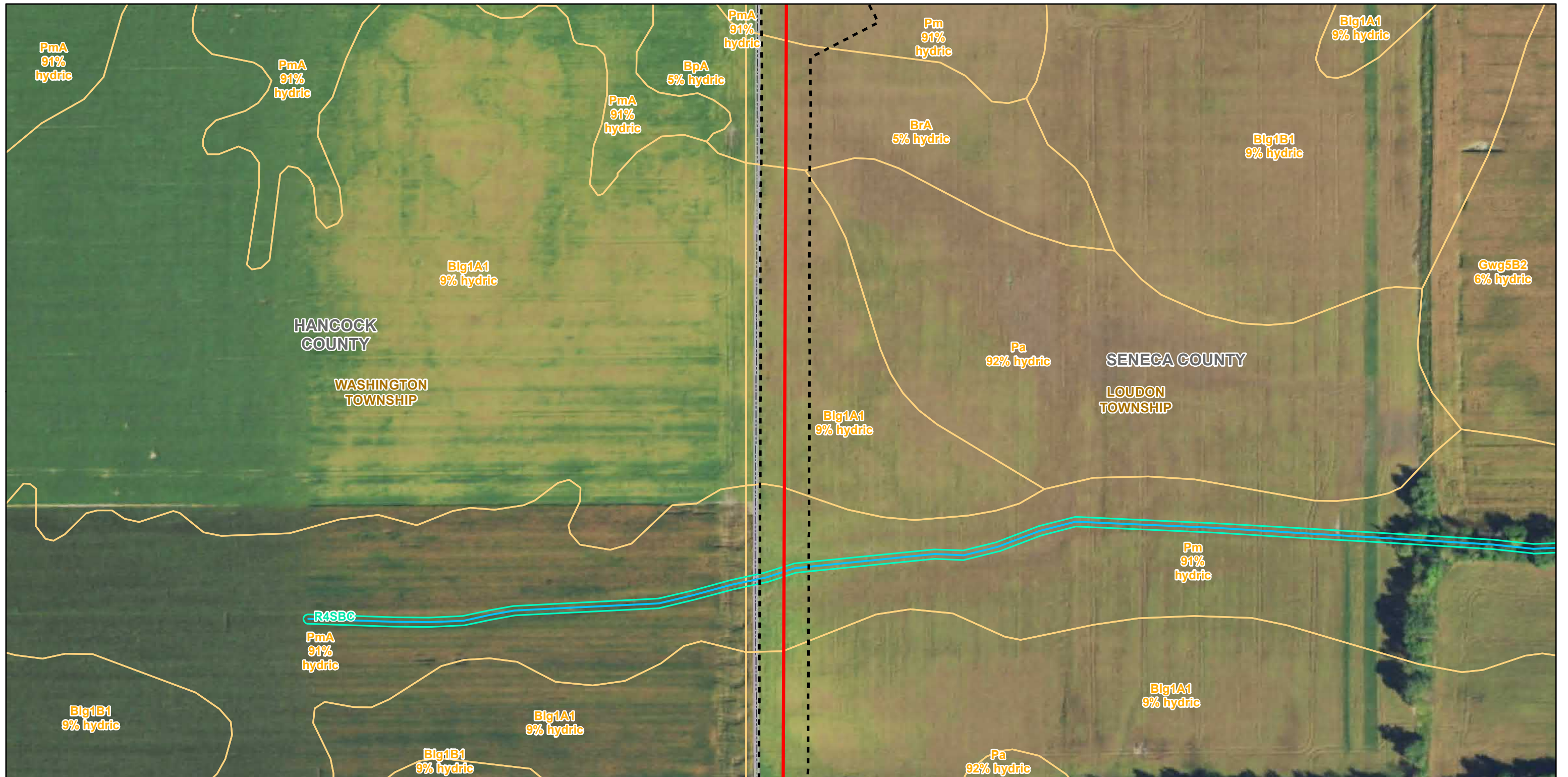
AEP OHIO

WSP

N

0 200 400 Feet



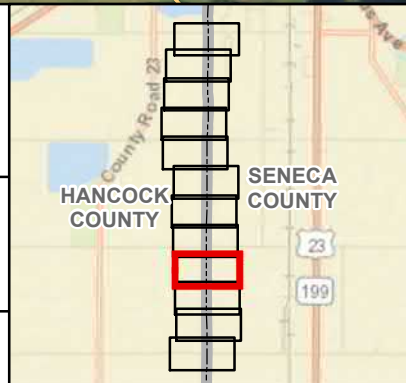


▲ Proposed Substation	□ NWI Wetlands
● Proposed Switch	□ NHD Waterbody
— Proposed Iron Triangle 138 kV Transmission Line	□ Soil Map Unit
— Proposed Howard-Fostoria 138 kV Mid-Span Structure Project	□ FEMA 100-Yr Floodplain
— Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	□ FEMA Floodway
— Existing Transmission Line	□ Municipal Boundary
— Railroad	□ Township Boundary
— NHD Stream	□ County Boundary
— Environmental Survey Corridor	

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022

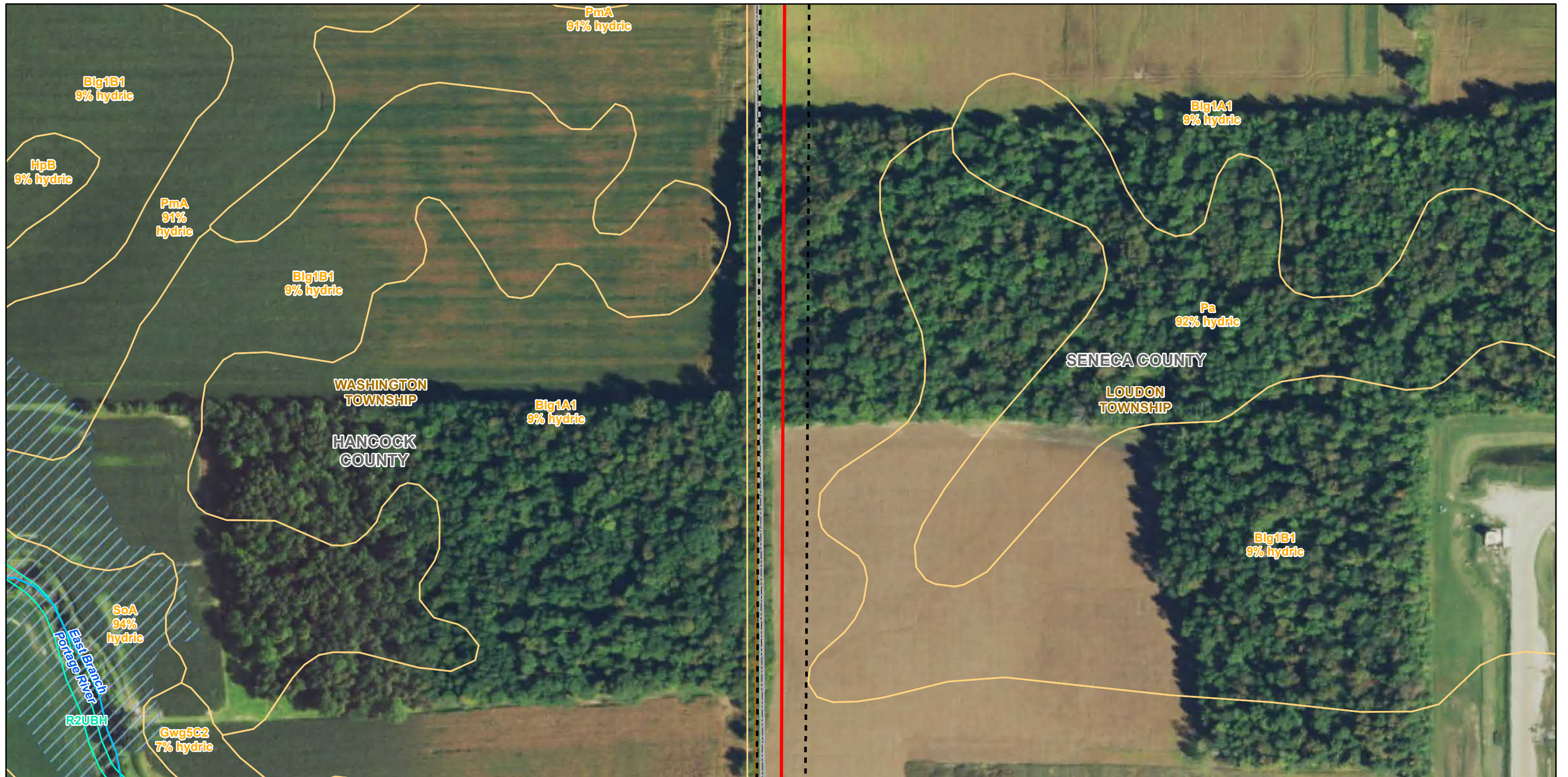


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

N

0 200 400 Feet

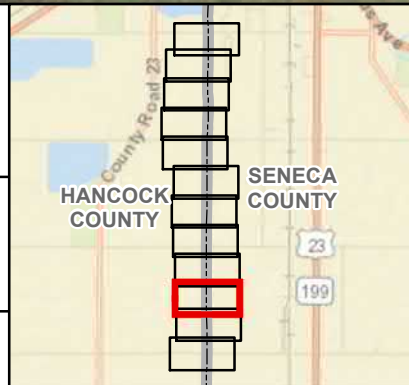


▲ Proposed Substation	□ NWI Wetlands
● Proposed Switch	□ NHD Waterbody
— Proposed Iron Triangle 138 kV Transmission Line	□ Soil Map Unit
— Proposed Howard-Fostoria 138 kV Mid-Span Structure Project	□ FEMA 100-Yr Floodplain
— Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	□ FEMA Floodway
— Existing Transmission Line	□ Municipal Boundary
— Railroad	□ Township Boundary
— NHD Stream	□ County Boundary
□ Environmental Survey Corridor	

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022

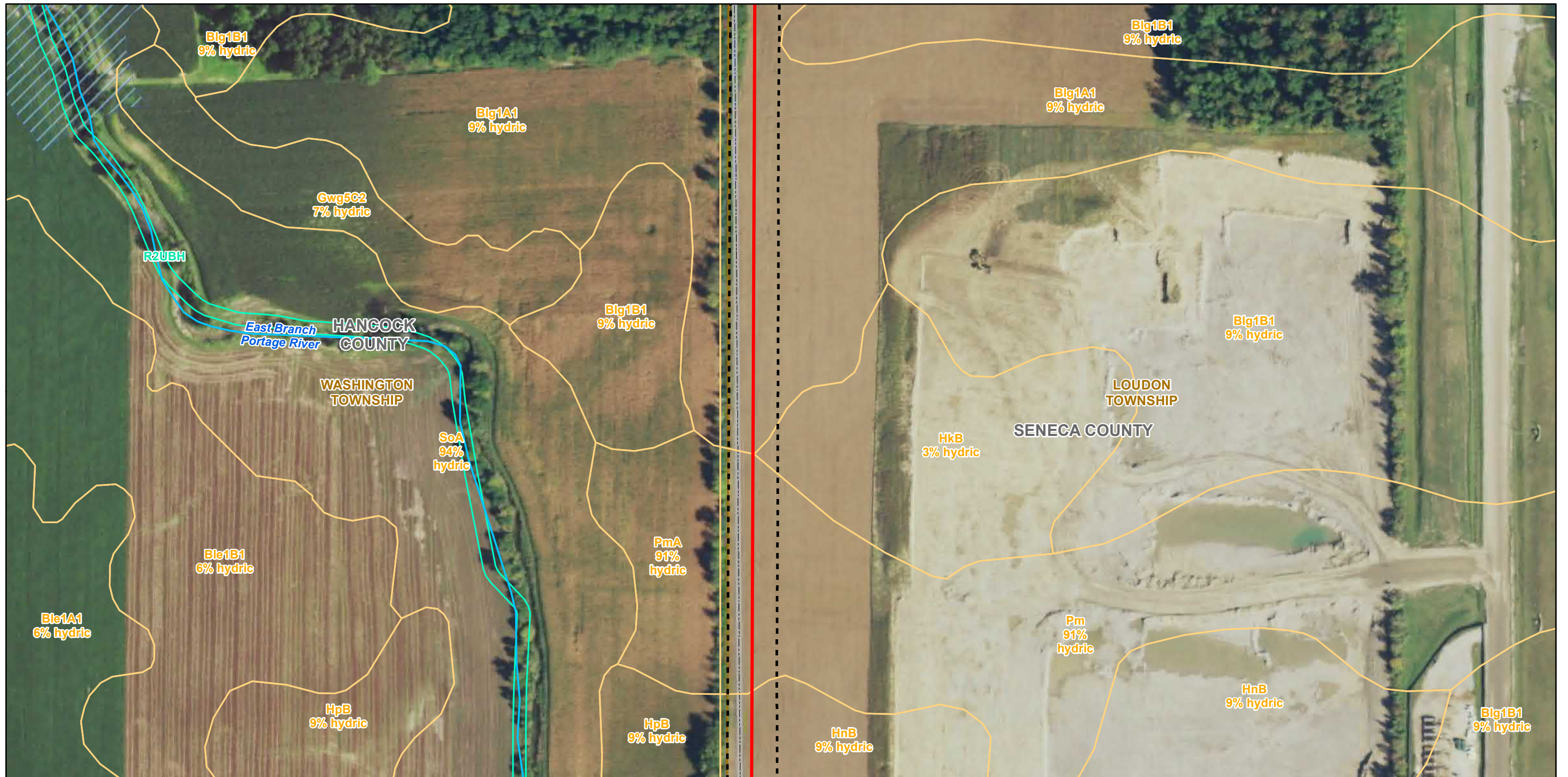


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

N

0 200 400 Feet

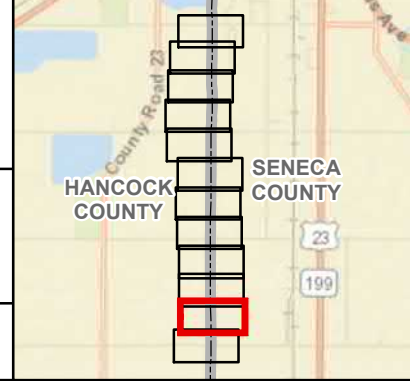


- ▲ Proposed Substation
- Proposed Switch
- Proposed Iron Triangle 138 kV Transmission Line
- Proposed Howard-Fostoria 138 kV Mid-Span Structure Project
- Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project
- Existing Transmission Line
- Railroad
- NHD Stream
- Environmental Survey Corridor
- NWI Wetlands
- NHD Waterbody
- Soil Map Unit
- FEMA 100-Yr Floodplain
- FEMA Floodway
- Municipal Boundary
- Township Boundary
- County Boundary

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

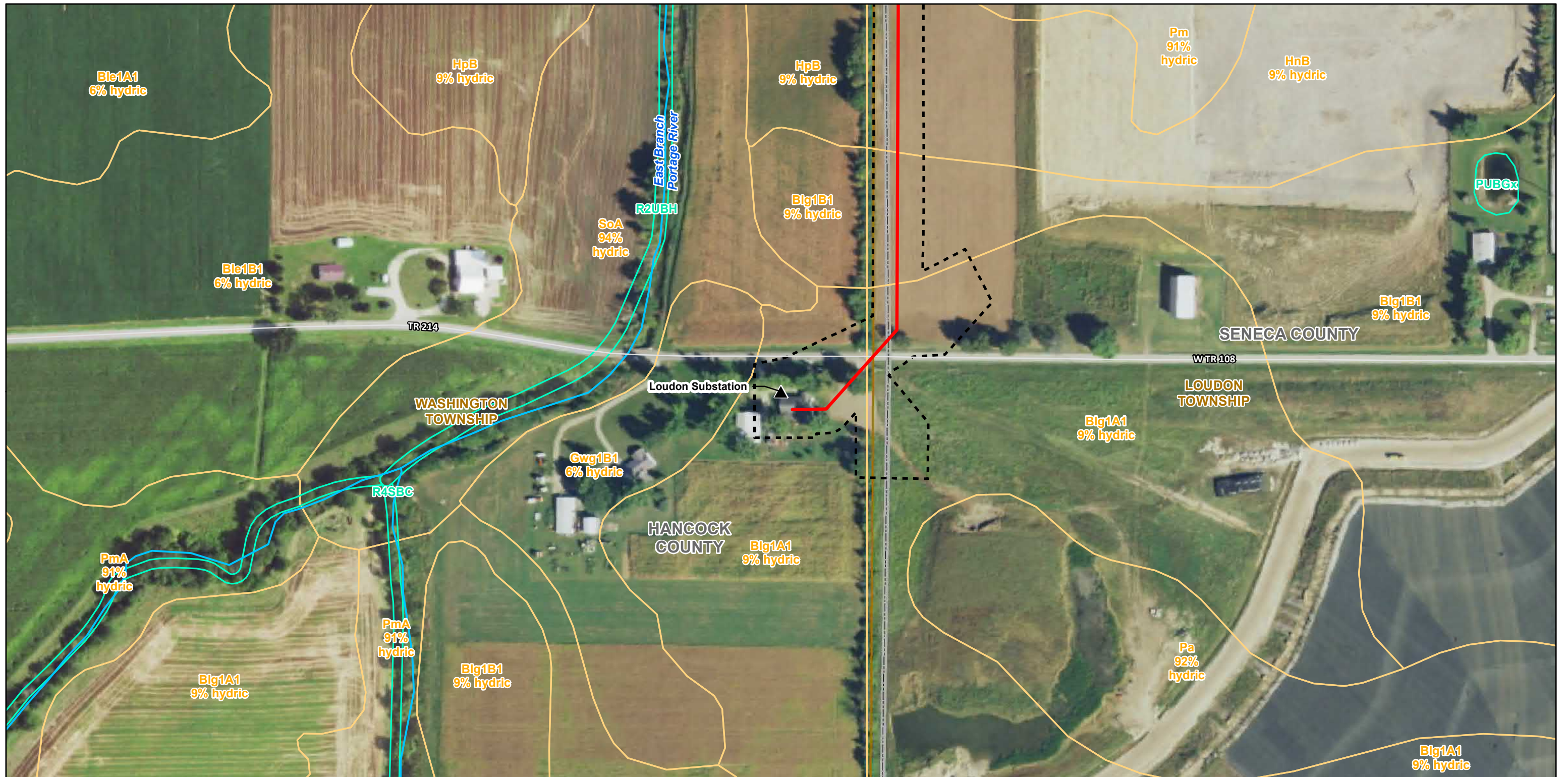
Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022



IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT  
**Figure 2. Environmental Basemap**



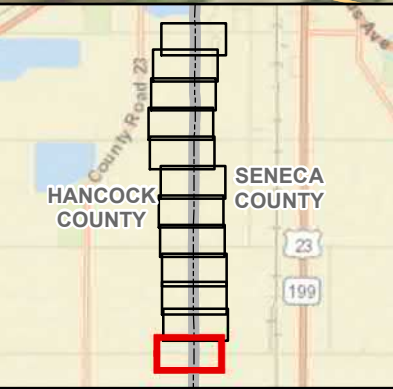


▲ Proposed Substation	□ NWI Wetlands
● Proposed Switch	□ NHD Waterbody
— Proposed Iron Triangle 138 kV Transmission Line	□ Soil Map Unit
— Proposed Howard-Fostoria 138 kV Mid-Span Structure Project	□ FEMA 100-Yr Floodplain
— Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	□ FEMA Floodway
— Existing Transmission Line	□ Municipal Boundary
— Railroad	□ Township Boundary
— NHD Stream	□ County Boundary
□ Environmental Survey Corridor	

Sources:  
 2021 NAIP Imagery (USDA)  
 Floodplains (FEMA)  
 Hydrography (USGS)  
 Soil Units (USDA)  
 Wetlands (USFWS)

Coordinate System:  
 Ohio State Plane North  
 NAD 1983

October 26, 2022

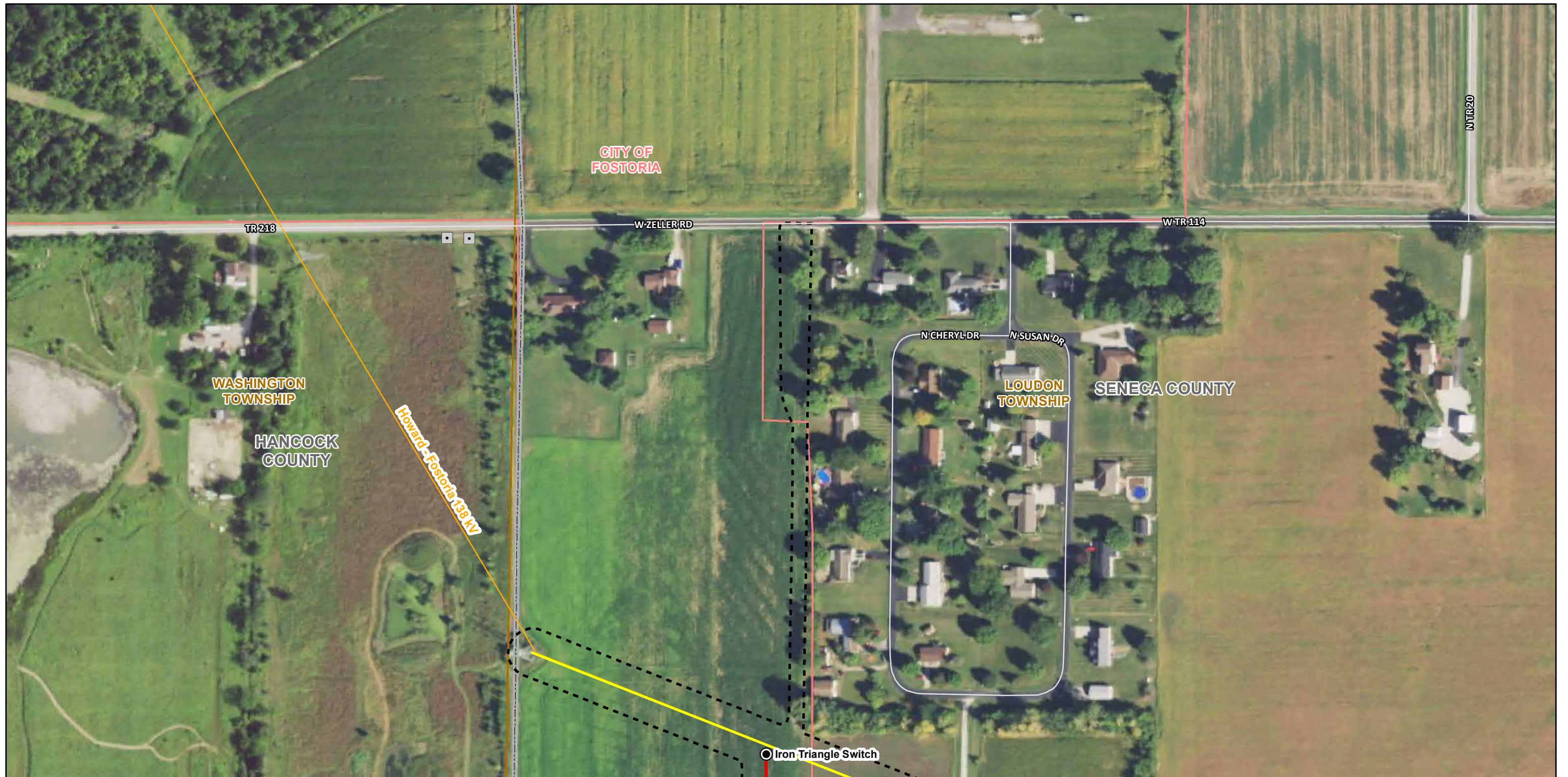


IRON TRIANGLE 138 KV  
 TRANSMISSION LINE PROJECT

**Figure 2. Environmental Basemap**

N

0 200 400 Feet

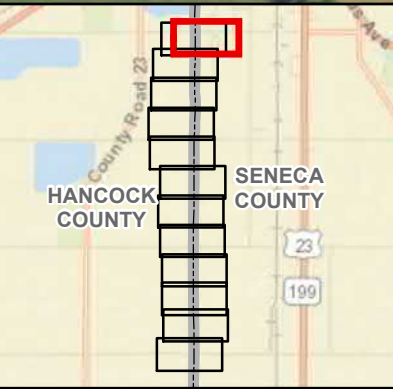


- ▲ Proposed Substation
- Proposed Switch
- Upland Data Point
- Wetland Data Point
- Culvert
- Proposed Iron Triangle 138 kV Transmission Line
- Non-Jurisdictional Drainage
- Delineated Stream
- - - Approximate Stream
- Existing Transmission Line
- Railroad
- - - Environmental Survey Corridor
- Delineated PEM Wetland
- Delineated PFO Wetland
- ▨ Approximate Wetland
- ▭ Municipal Boundary
- ▭ Township Boundary
- ▭ County Boundary

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983




October 28, 2022

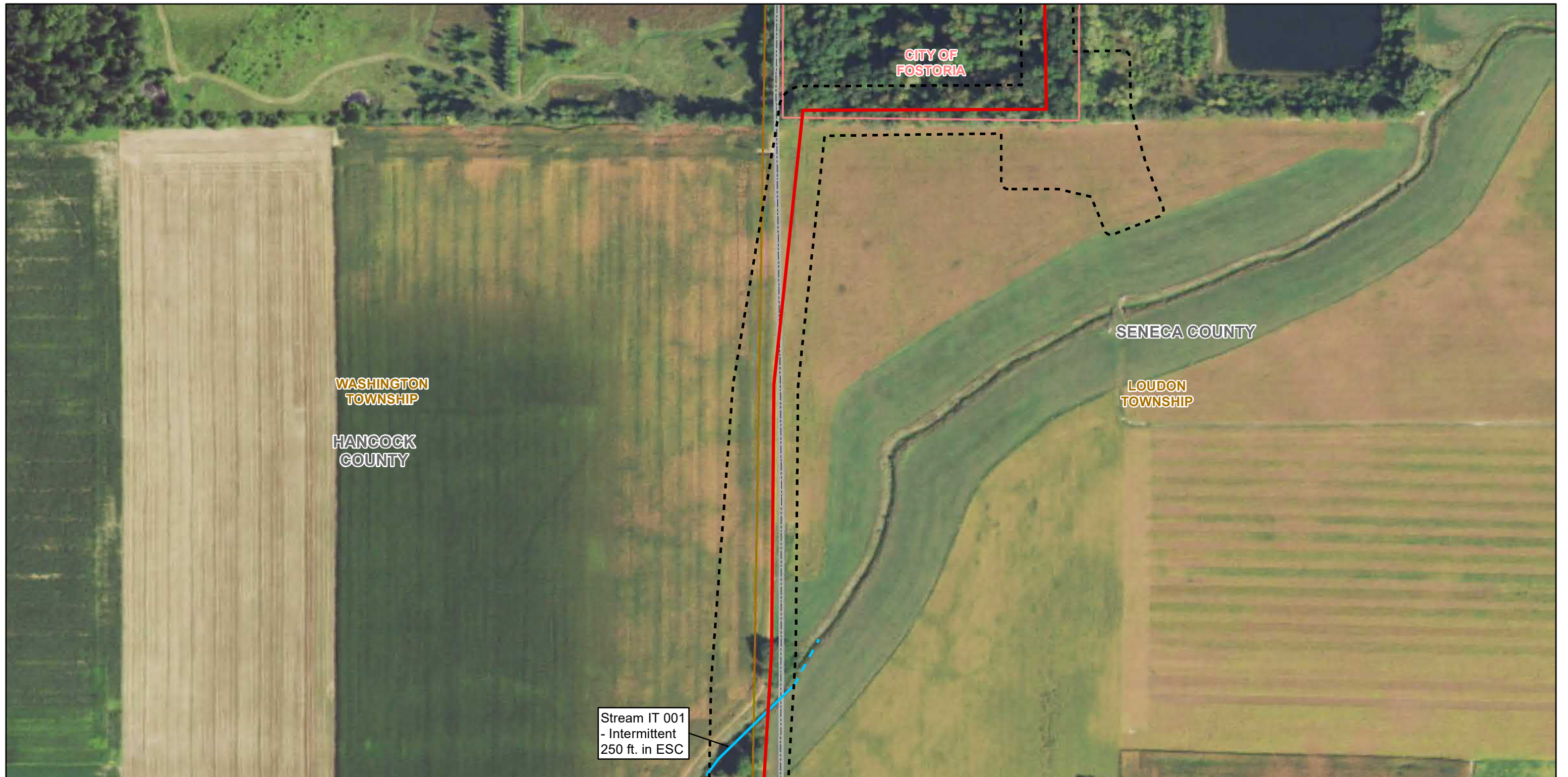


IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Delineated Features**





<ul style="list-style-type: none"> <li>▲ Proposed Substation</li> <li>● Proposed Switch</li> <li>● Upland Data Point</li> <li>● Wetland Data Point</li> <li>■ Culvert</li> <li>— Proposed Iron Triangle 138 kV Transmission Line</li> <li>— Non-Jurisdictional Drainage</li> </ul>	<ul style="list-style-type: none"> <li>— Delineated Stream</li> <li>- - - Approximate Stream</li> <li>— Existing Transmission Line</li> <li>— Railroad</li> <li>- - - Environmental Survey Corridor</li> <li>■ Delineated PEM Wetland</li> <li>■ Delineated PFO Wetland</li> </ul>	<ul style="list-style-type: none"> <li>□ Approximate Wetland</li> <li>□ Municipal Boundary</li> <li>□ Township Boundary</li> <li>□ County Boundary</li> </ul>	<p>Sources: 2021 NAIP Imagery (USDA)</p> <p>Coordinate System: Ohio State Plane North NAD 1983</p> <p>October 28, 2022</p>		<p style="text-align: center;"><b>IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT</b></p> <p style="text-align: center;"><b>Figure 3. Delineated Features</b></p> <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p>0      200      400</p> <p>Feet</p> </div> </div>
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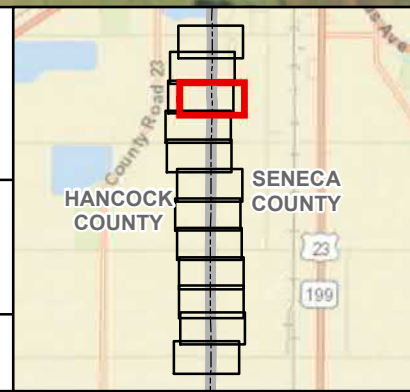
Stream IT 001  
- Intermittent  
250 ft. in ESC

- |   |                               |                     |
|---|-------------------------------|---------------------|
| ▲ Proposed Substation                           | Delineated Stream             | Approximate Wetland |
| ● Proposed Switch                               | Approximate Stream            | Municipal Boundary  |
| ● Upland Data Point                             | Existing Transmission Line    | Township Boundary   |
| ● Wetland Data Point                            | Railroad                      | County Boundary     |
| ■ Culvert                                       | Environmental Survey Corridor |                     |
| Proposed Iron Triangle 138 kV Transmission Line | Delineated PEM Wetland        |                     |
| Non-Jurisdictional Drainage                     | Delineated PFO Wetland        |                     |

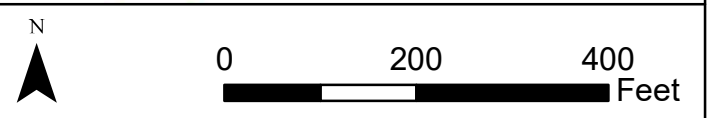
Sources:  
2021 NAIP Imagery (USDA)

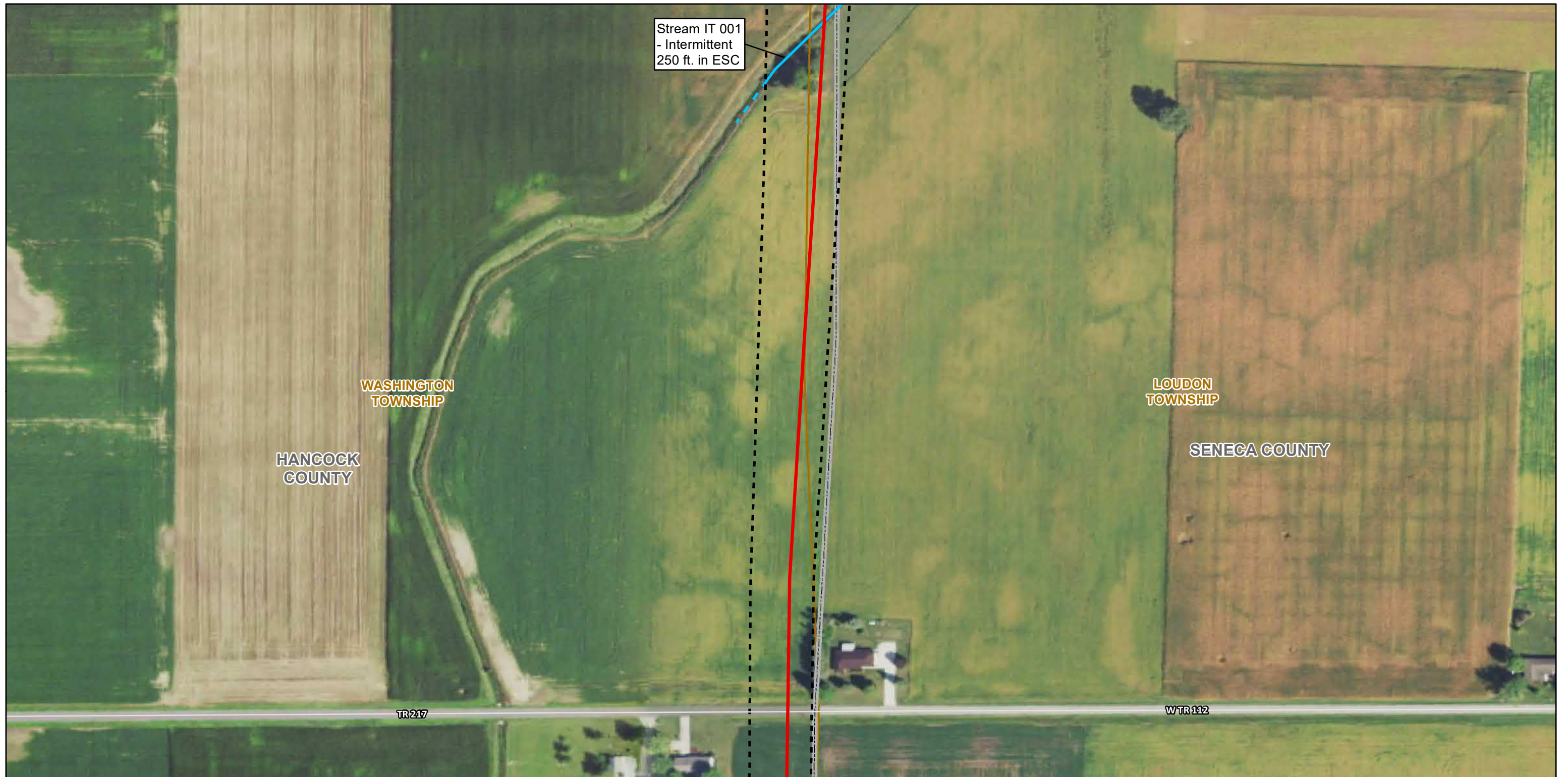
Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Delineated Features**



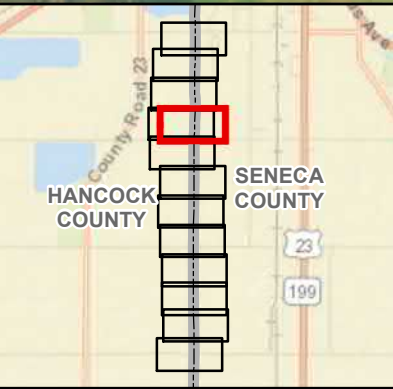


- |   |                                     |                       |
|---|-------------------------------------|-----------------------|
| ▲ Proposed Substation                             | — Delineated Stream                 | ⊠ Approximate Wetland |
| ● Proposed Switch                                 | - - - Approximate Stream            | □ Municipal Boundary  |
| ● Upland Data Point                               | — Existing Transmission Line        | □ Township Boundary   |
| ● Wetland Data Point                              | — Railroad                          | □ County Boundary     |
| ■ Culvert   | - - - Environmental Survey Corridor |                       |
| — Proposed Iron Triangle 138 kV Transmission Line | ■ Delineated PEM Wetland            |                       |
| — Non-Jurisdictional Drainage                     | ■ Delineated PFO Wetland            |                       |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



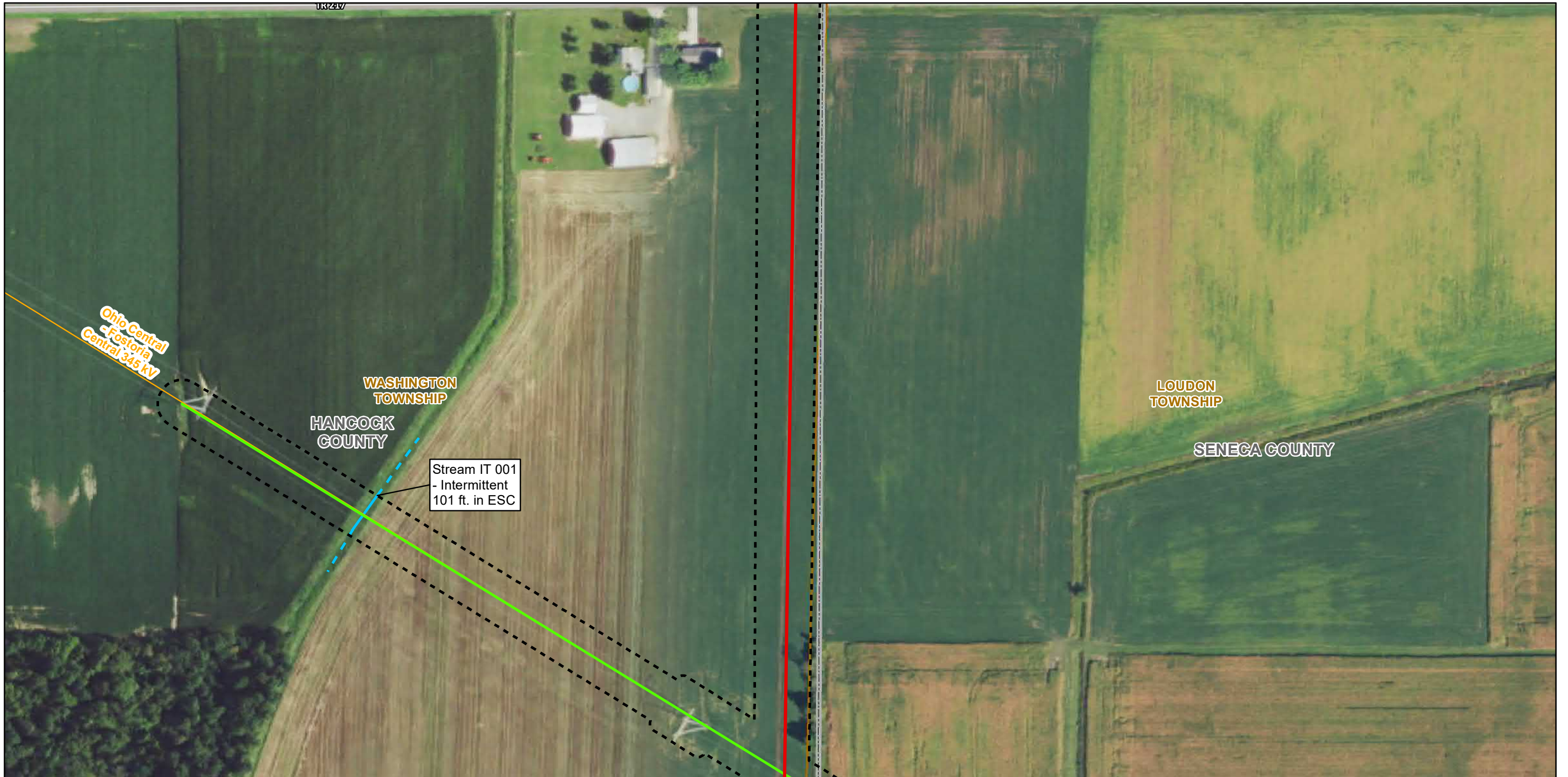
IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Delineated Features**

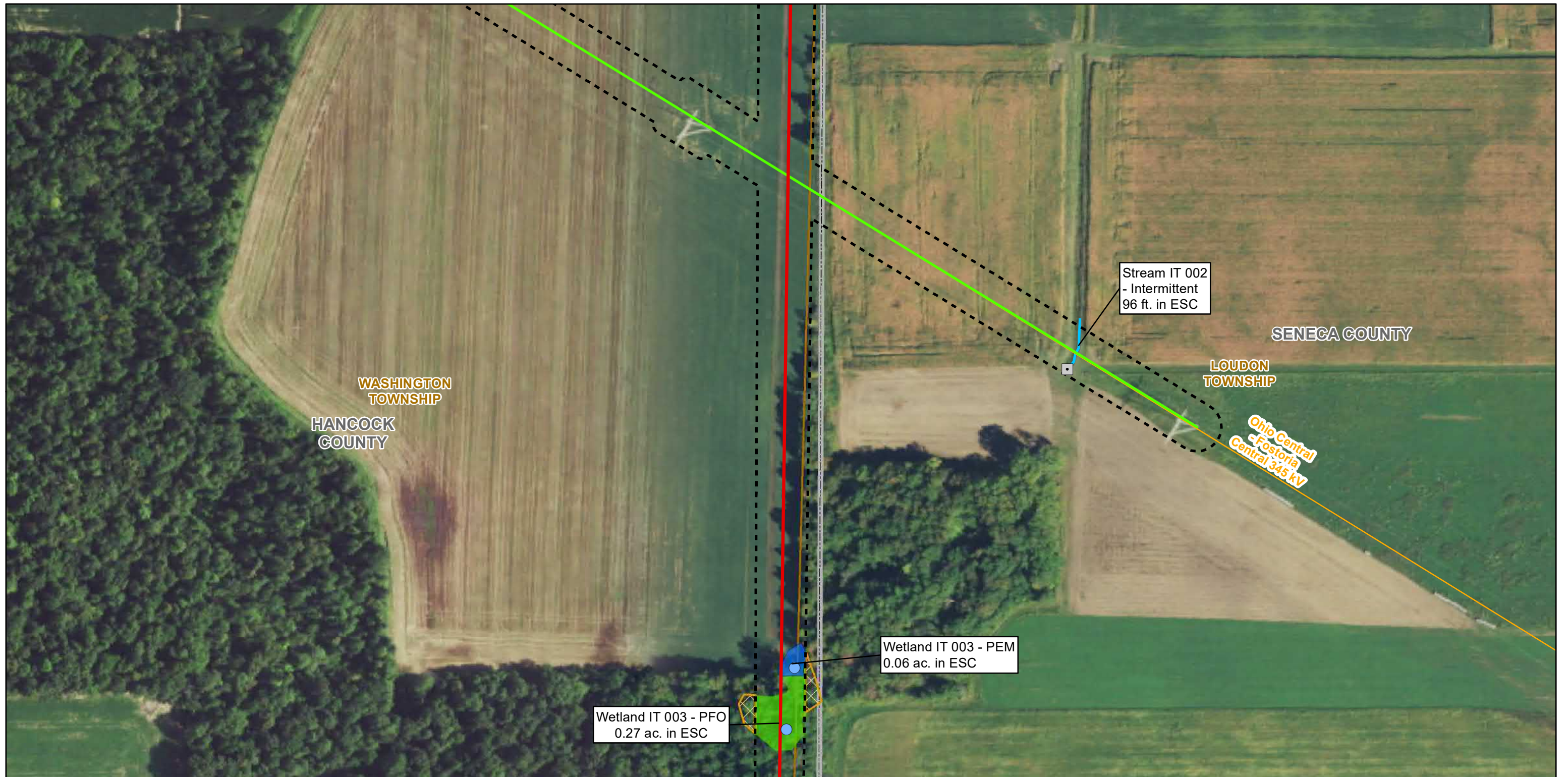
N





0 200 400 Feet





<ul style="list-style-type: none"> <li>▲ Proposed Substation</li> <li>● Proposed Switch</li> <li>● Upland Data Point</li> <li>● Wetland Data Point</li> <li>■ Culvert</li> </ul>	<ul style="list-style-type: none"> <li>— Delineated Stream</li> <li>- - - Approximate Stream</li> <li>— Existing Transmission Line</li> <li>— Railroad</li> <li>- - - Environmental Survey Corridor</li> <li>■ Delineated PEM Wetland</li> <li>■ Delineated PFO Wetland</li> </ul>	<ul style="list-style-type: none"> <li>□ Approximate Wetland</li> <li>□ Municipal Boundary</li> <li>□ Township Boundary</li> <li>□ County Boundary</li> </ul>	<p>Sources: 2021 NAIP Imagery (USDA)</p>		<p>IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT <b>Figure 3. Delineated Features</b></p>
<ul style="list-style-type: none"> <li>— Proposed Iron Triangle 138 kV Transmission Line</li> <li>— Non-Jurisdictional Drainage</li> </ul>			<p>Coordinate System: Ohio State Plane North NAD 1983</p>		
			<p>October 28, 2022</p>	<p>N</p>	



<ul style="list-style-type: none"> <li>▲ Proposed Substation</li> <li>● Proposed Switch</li> <li>● Upland Data Point</li> <li>● Wetland Data Point</li> <li>■ Culvert</li> <li>— Proposed Iron Triangle 138 kV Transmission Line</li> <li>— Non-Jurisdictional Drainage</li> </ul>	<ul style="list-style-type: none"> <li>— Delineated Stream</li> <li>- - - Approximate Stream</li> <li>— Existing Transmission Line</li> <li>— Railroad</li> <li>- - - Environmental Survey Corridor</li> <li>■ Delineated PEM Wetland</li> <li>■ Delineated PFO Wetland</li> </ul>	<ul style="list-style-type: none"> <li>□ Approximate Wetland</li> <li>□ Municipal Boundary</li> <li>□ Township Boundary</li> <li>□ County Boundary</li> </ul>	<p>Sources: 2021 NAIP Imagery (USDA)</p> <p>Coordinate System: Ohio State Plane North NAD 1983</p> <p>October 28, 2022</p>		<p style="text-align: center;"><b>IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT</b></p> <p style="text-align: center;"><b>Figure 3. Delineated Features</b></p> <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; align-items: center;">   </div>
--	--	---	--	--	--



Wetland IT 002 - PFO  
0.11 ac. in ESC

HANCOCK  
COUNTY

WASHINGTON  
TOWNSHIP

LOUDON  
TOWNSHIP

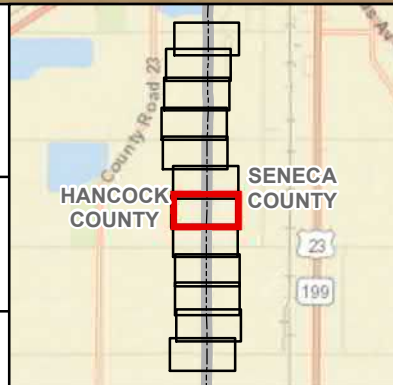
SENECA COUNTY

- |   |                                     |                       |
|---|-------------------------------------|-----------------------|
| ▲ Proposed Substation                             | — Delineated Stream                 | ⊠ Approximate Wetland |
| ● Proposed Switch                                 | - - - Approximate Stream            | ▭ Municipal Boundary  |
| ● Upland Data Point                               | — Existing Transmission Line        | ▭ Township Boundary   |
| ● Wetland Data Point                              | — Railroad                          | ▭ County Boundary     |
| ■ Culvert   | - - - Environmental Survey Corridor |                       |
| — Proposed Iron Triangle 138 kV Transmission Line | ■ Delineated PEM Wetland            |                       |
| — Non-Jurisdictional Drainage                     | ■ Delineated PFO Wetland            |                       |

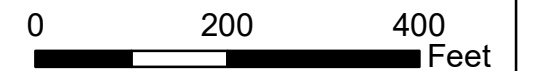
Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Delineated Features**



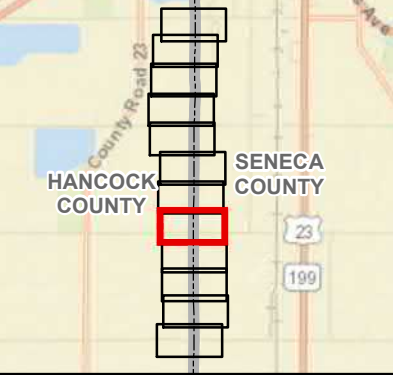


- |   |                                     |                       |
|---|-------------------------------------|-----------------------|
| ▲ Proposed Substation                             | — Delineated Stream                 | ⊠ Approximate Wetland |
| ● Proposed Switch                                 | - - - Approximate Stream            | □ Municipal Boundary  |
| ● Upland Data Point                               | — Existing Transmission Line        | □ Township Boundary   |
| ● Wetland Data Point                              | — Railroad                          | □ County Boundary     |
| ■ Culvert   | - - - Environmental Survey Corridor |                       |
| — Proposed Iron Triangle 138 kV Transmission Line | ■ Delineated PEM Wetland            |                       |
| — Non-Jurisdictional Drainage                     | ■ Delineated PFO Wetland            |                       |

Sources:  
2021 NAIP Imagery (USDA)



Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Delineated Features**

N

0 200 400 Feet

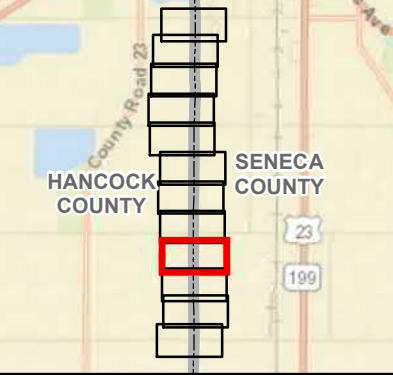


- |   |                               |                     |
|---|-------------------------------|---------------------|
| ▲ Proposed Substation                           | Delineated Stream             | Approximate Wetland |
| ● Proposed Switch                               | Approximate Stream            | Municipal Boundary  |
| ● Upland Data Point                             | Existing Transmission Line    | Township Boundary   |
| ● Wetland Data Point                            | Railroad                      | County Boundary     |
| ■ Culvert                                       | Environmental Survey Corridor |                     |
| Proposed Iron Triangle 138 kV Transmission Line | Delineated PEM Wetland        |                     |
| Non-Jurisdictional Drainage                     | Delineated PFO Wetland        |                     |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022

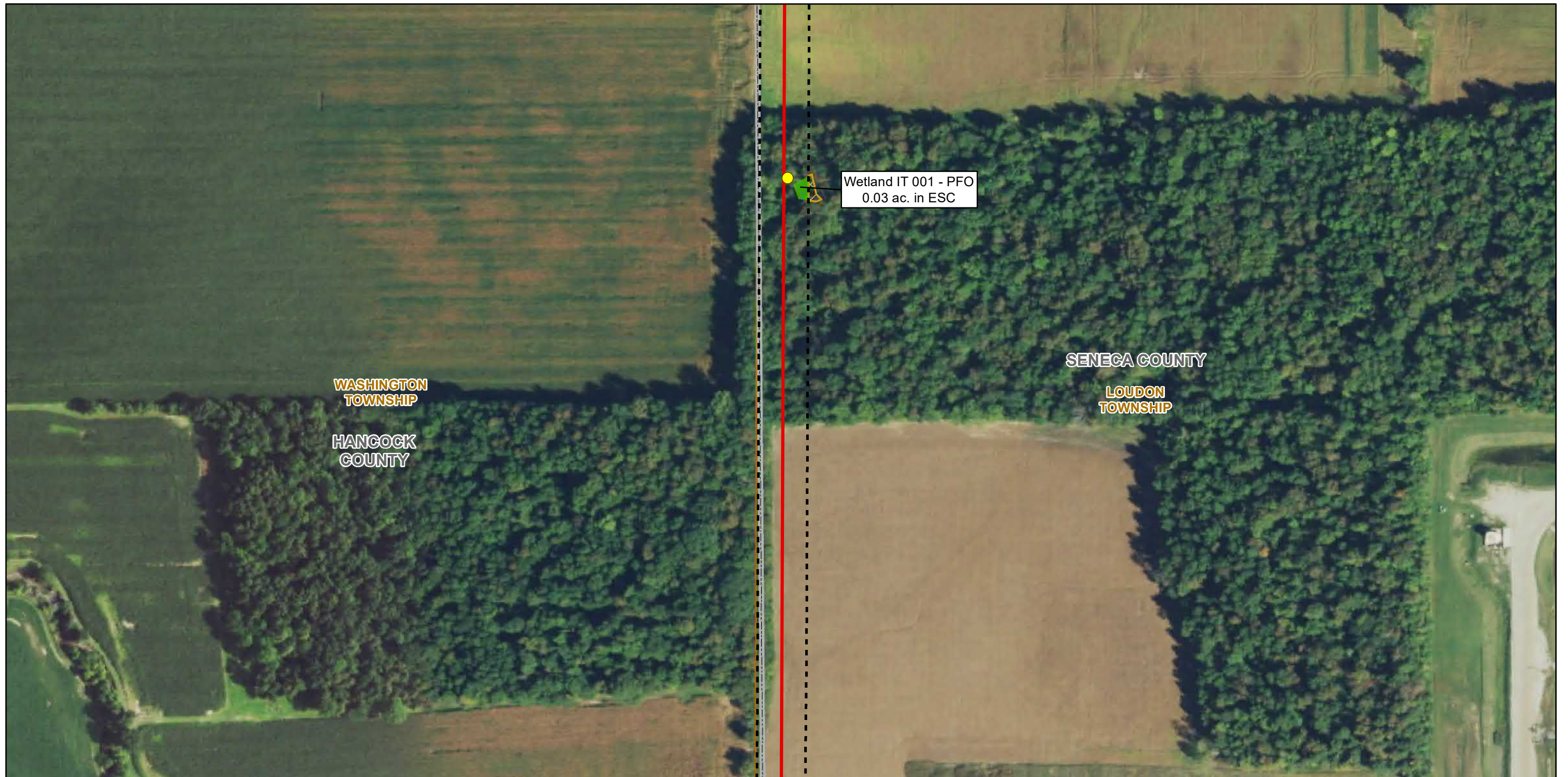


IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Delineated Features**

N

0 200 400 Feet

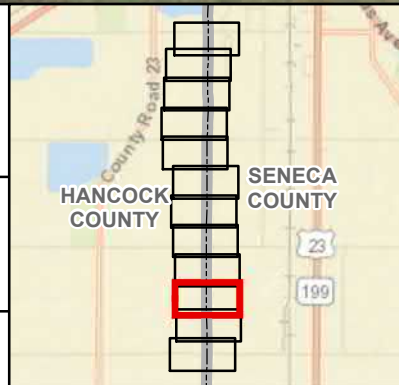


- |   |                                 |                       |
|---|---------------------------------|-----------------------|
| ▲ Proposed Substation                             | — Delineated Stream             | ⊠ Approximate Wetland |
| ● Proposed Switch                                 | - - - Approximate Stream        | □ Municipal Boundary  |
| ● Upland Data Point                               | — Existing Transmission Line    | □ Township Boundary   |
| ● Wetland Data Point                              | — Railroad                      | □ County Boundary     |
| ■ Culvert   | ⋯ Environmental Survey Corridor |                       |
| — Proposed Iron Triangle 138 kV Transmission Line | ■ Delineated PEM Wetland        |                       |
| — Non-Jurisdictional Drainage                     | ■ Delineated PFO Wetland        |                       |

Sources:  
2021 NAIP Imagery (USDA)



Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



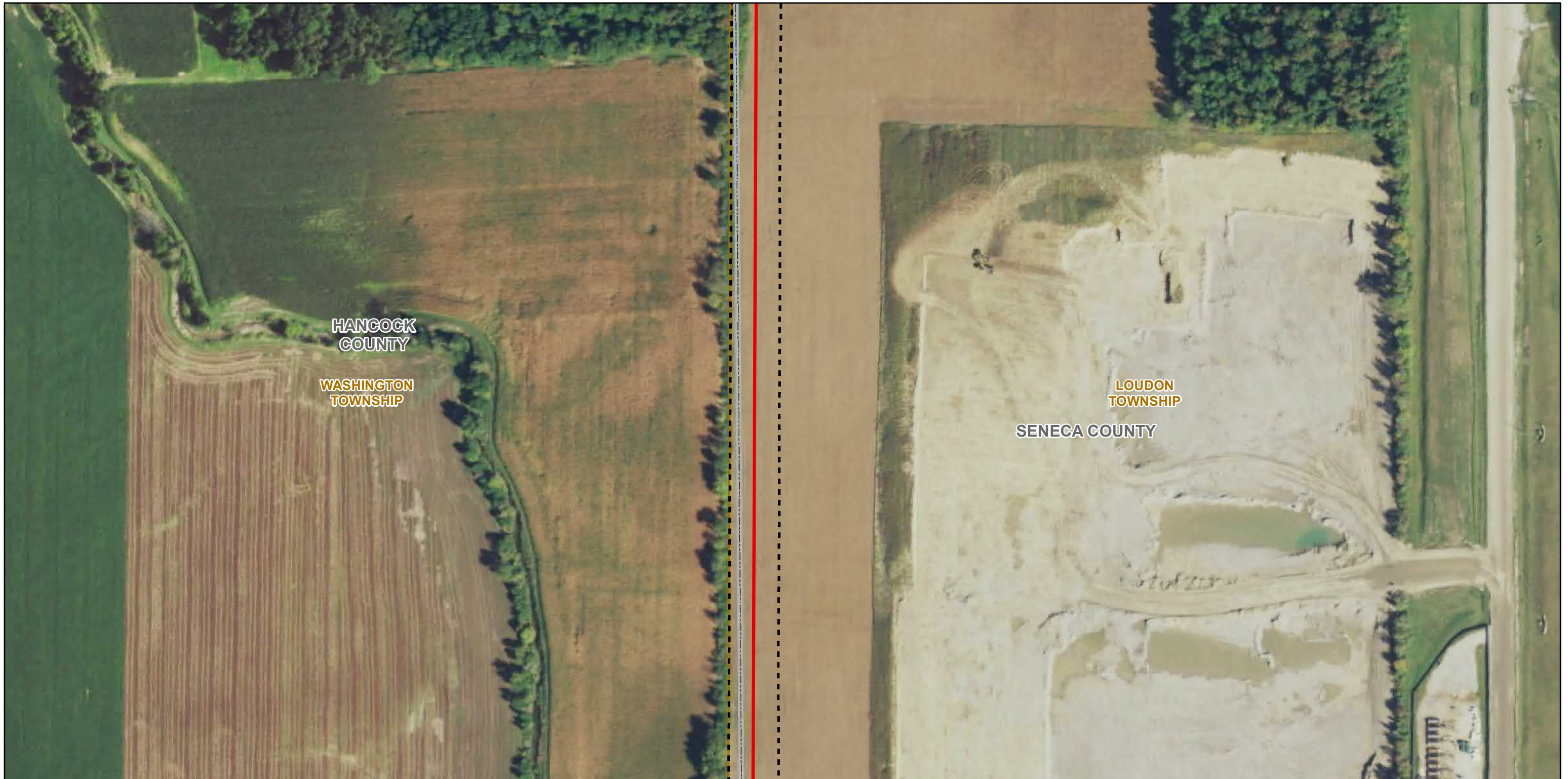
IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Delineated Features**

N

0 200 400 Feet

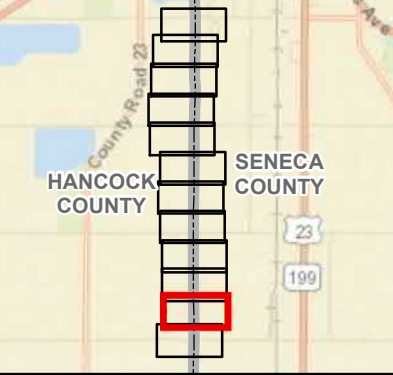


- |   |                                 |                       |
|---|---------------------------------|-----------------------|
| ▲ Proposed Substation                             | — Delineated Stream             | ⊠ Approximate Wetland |
| ● Proposed Switch                                 | - - - Approximate Stream        | □ Municipal Boundary  |
| ● Upland Data Point                               | — Existing Transmission Line    | □ Township Boundary   |
| ● Wetland Data Point                              | — Railroad                      | □ County Boundary     |
| ■ Culvert   | ⋮ Environmental Survey Corridor |                       |
| — Proposed Iron Triangle 138 kV Transmission Line | ■ Delineated PEM Wetland        |                       |
| — Non-Jurisdictional Drainage                     | ■ Delineated PFO Wetland        |                       |

Sources:  
2021 NAIP Imagery (USDA)



Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



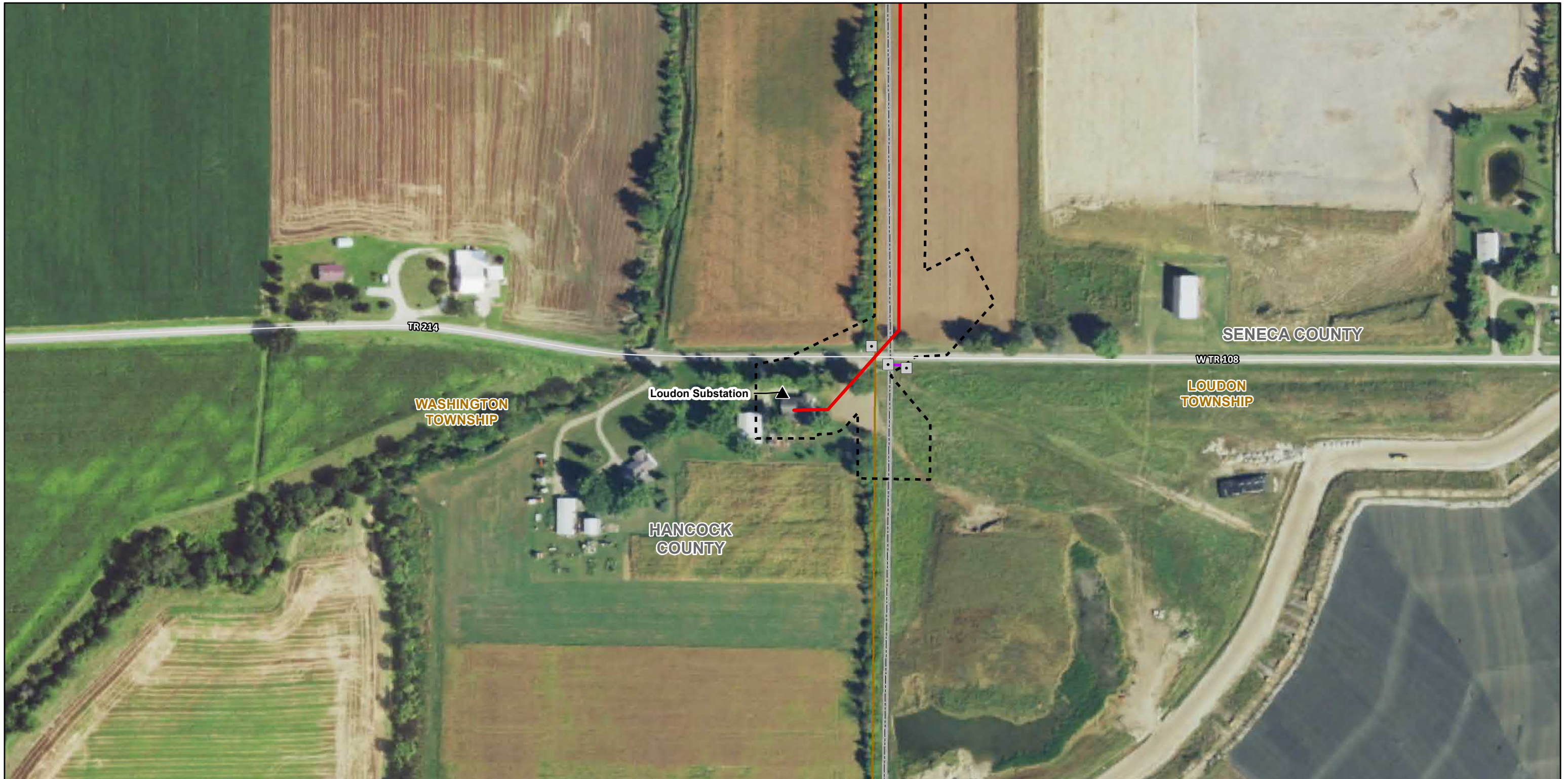
IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Delineated Features**

N

0 200 400 Feet

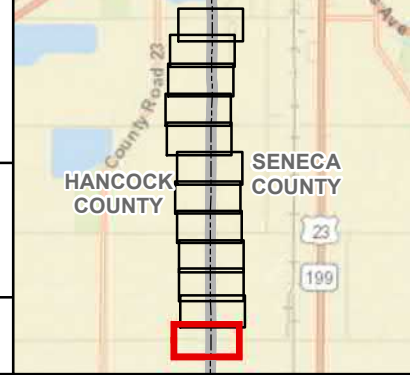


- ▲ Proposed Substation
- Proposed Switch
- Upland Data Point
- Wetland Data Point
- Culvert
- Proposed Iron Triangle 138 kV Transmission Line
- Non-Jurisdictional Drainage
- Delineated Stream
- - - Approximate Stream
- Existing Transmission Line
- Railroad
- - - Environmental Survey Corridor
- Delineated PEM Wetland
- Delineated PFO Wetland
- ▨ Approximate Wetland
- ▭ Municipal Boundary
- ▭ Township Boundary
- ▭ County Boundary

Sources:  
2021 NAIP Imagery (USDA)



Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022




**IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT**


**Figure 3. Delineated Features**

N

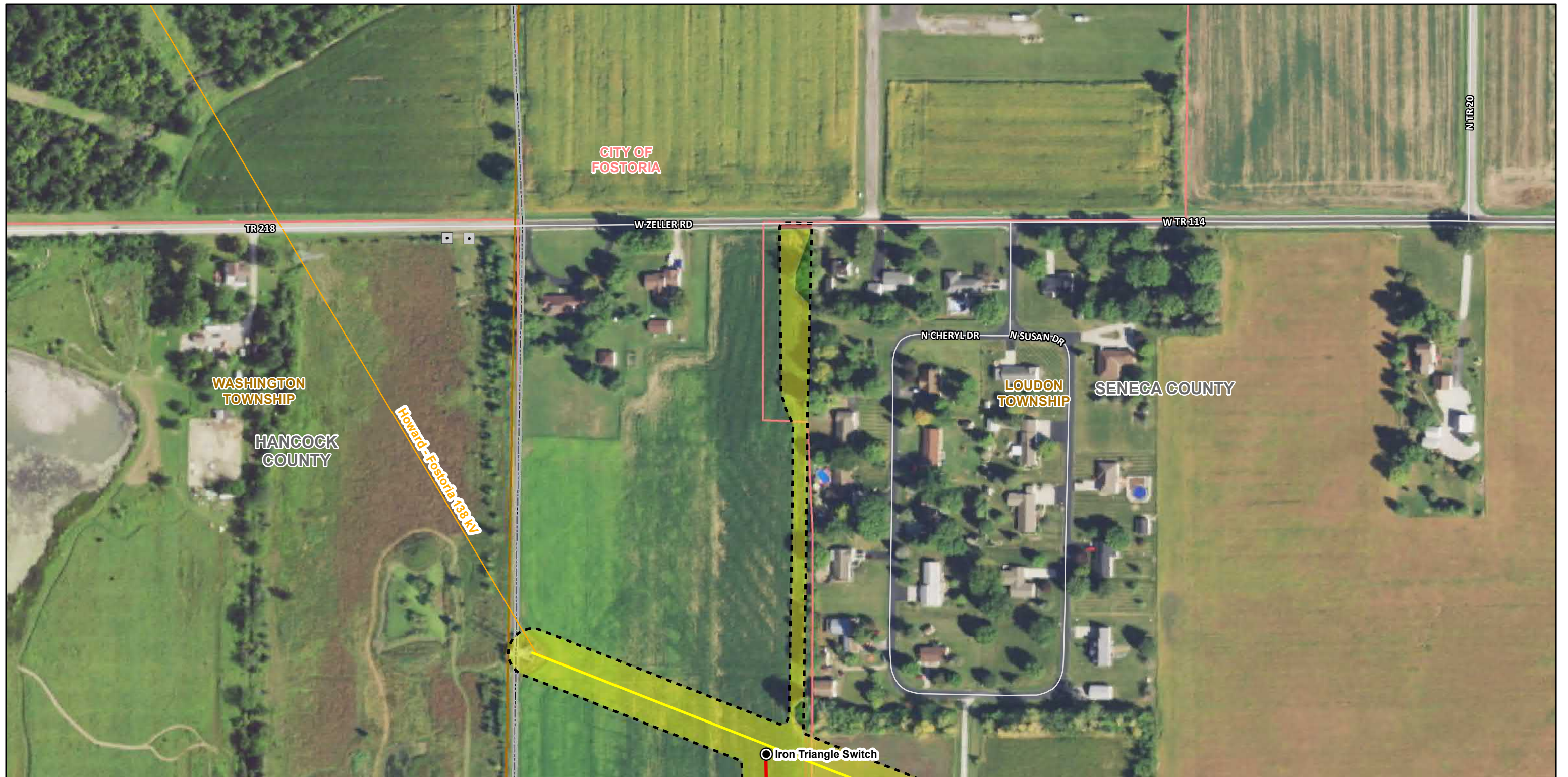


0      200      400



Feet



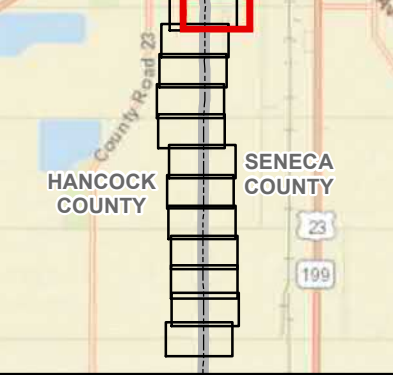


- |  |  |                                   |                              |
|--|--|-----------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | --- Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | ■ Cultivated Cropland             | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | ■ Developed Open Space            | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | ■ Developed, High Intensity       | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | ■ Developed, Medium Intensity     | County Boundary              |
|  |  | ■ Old Field                       |                              |
|  |  | ■ Scrub Shrub                     |                              |

Sources:  
2021 NAIP Imagery (USDA)

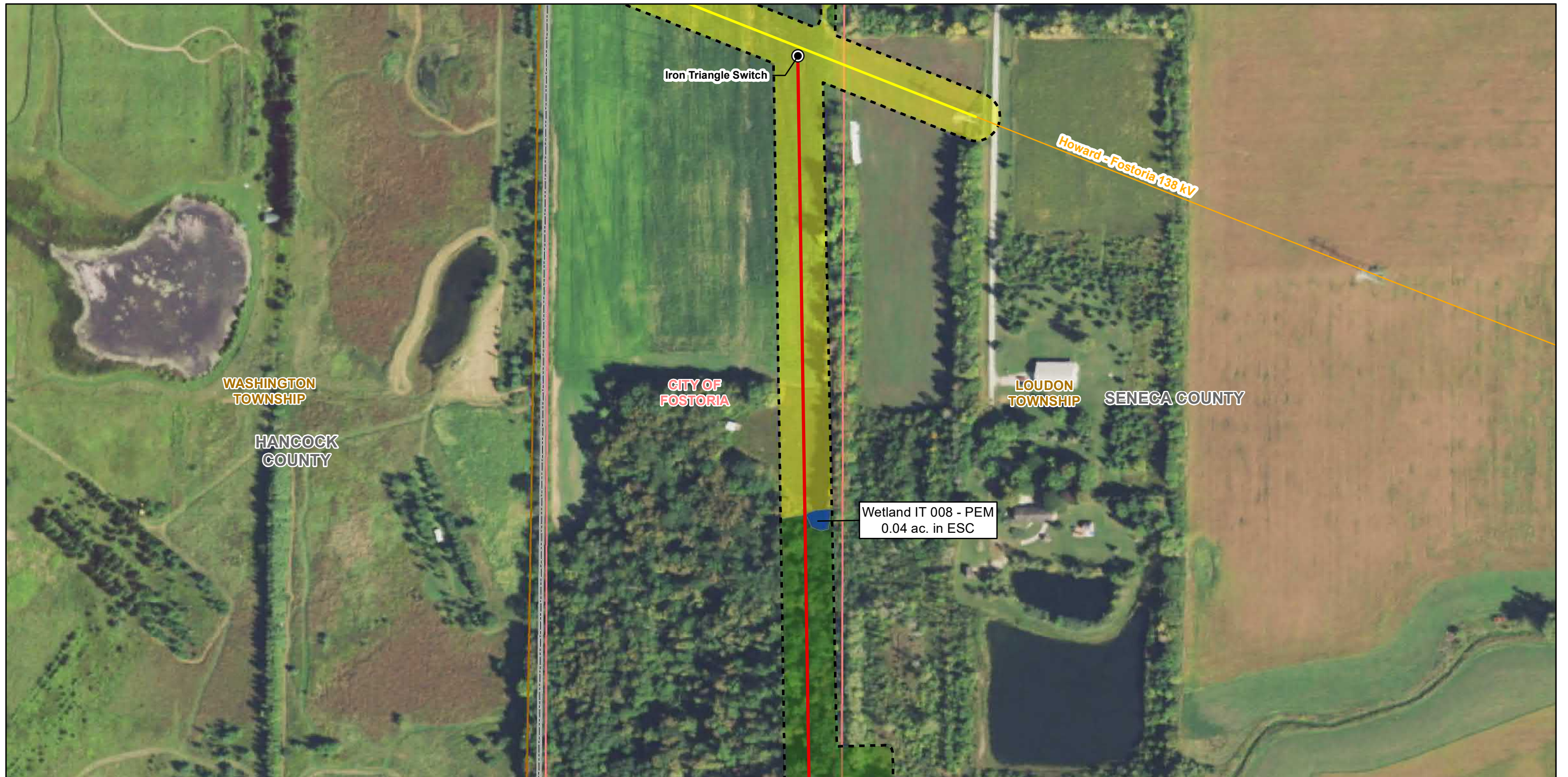
Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**



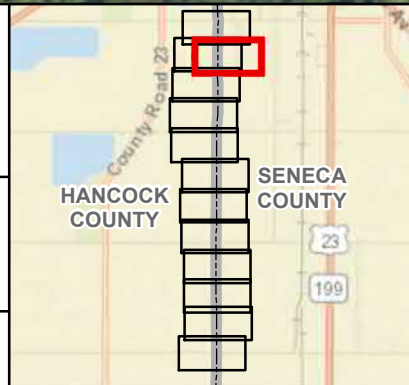


▲ Proposed Substation	Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project	Environmental Survey Corridor	Successional Hardwood Forest
● Proposed Switch	Non-Jurisdictional Drainage	Cultivated Cropland	Wetlands and Waterbodies
■ Culvert	Delineated Stream	Developed Open Space	Municipal Boundary
— Proposed Iron Triangle 138 kV Transmission Line	Existing Transmission Line	Developed, High Intensity	Township Boundary
— Proposed Howard-Fostoria 138 kV Mid-Span Structure Project	Railroad	Developed, Medium Intensity	County Boundary
		Old Field	
		Scrub Shrub	

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



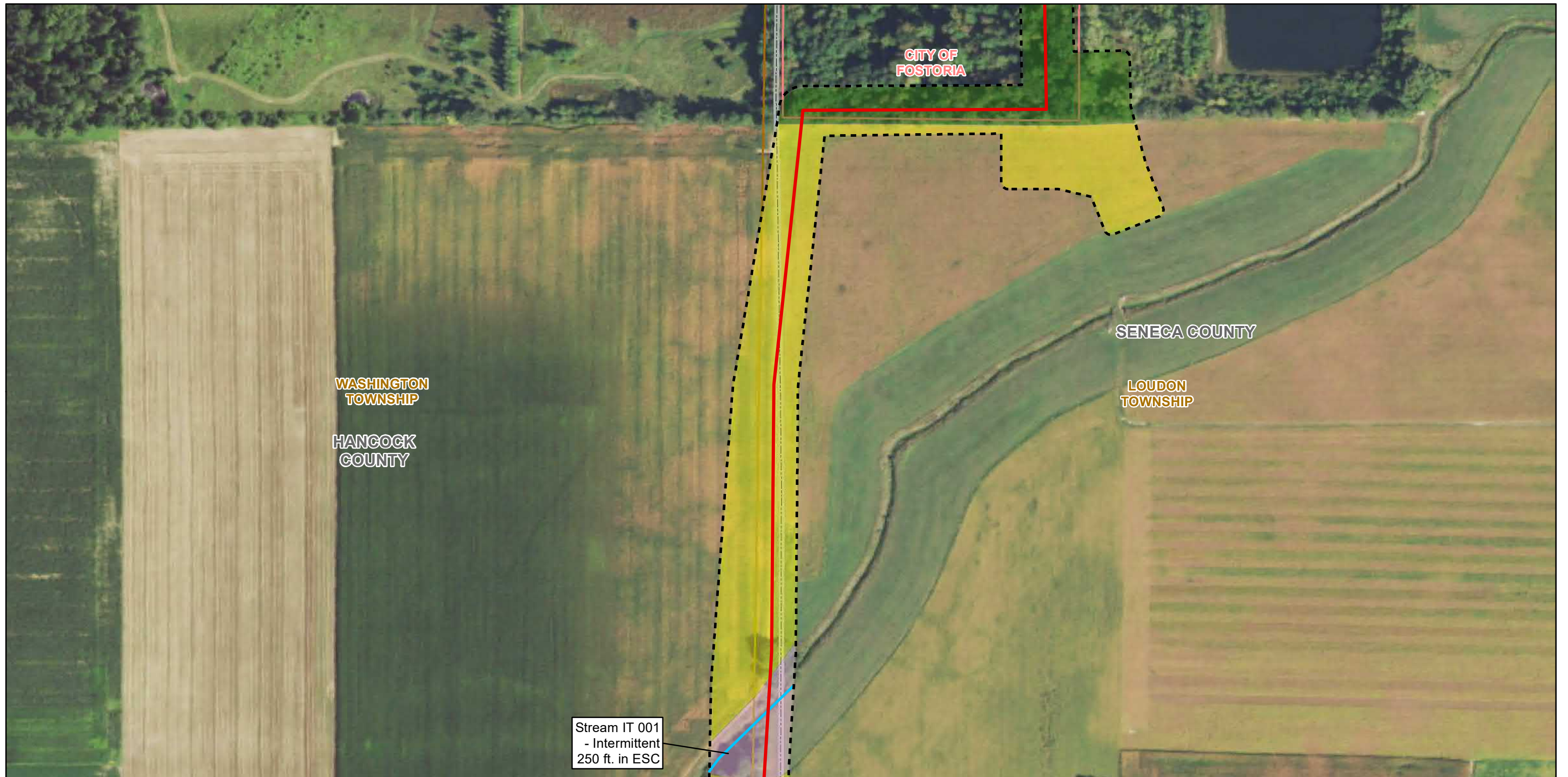
IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT

**Figure 3. Vegetation Coverage**

**AEP OHIO** **WSP**

N

0 200 400 Feet



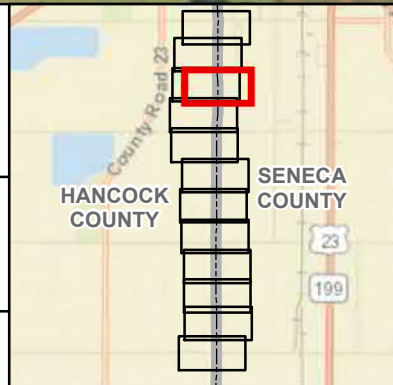
Stream IT 001  
- Intermittent  
250 ft. in ESC

- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | Cultivated Cropland           | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | Developed Open Space          | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | Developed, High Intensity     | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | Developed, Medium Intensity   | County Boundary              |
|  |  | Old Field                     |                              |
|  |  | Scrub Shrub                   |                              |

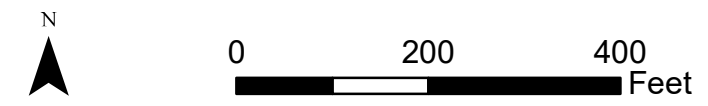
Sources:  
2021 NAIP Imagery (USDA)

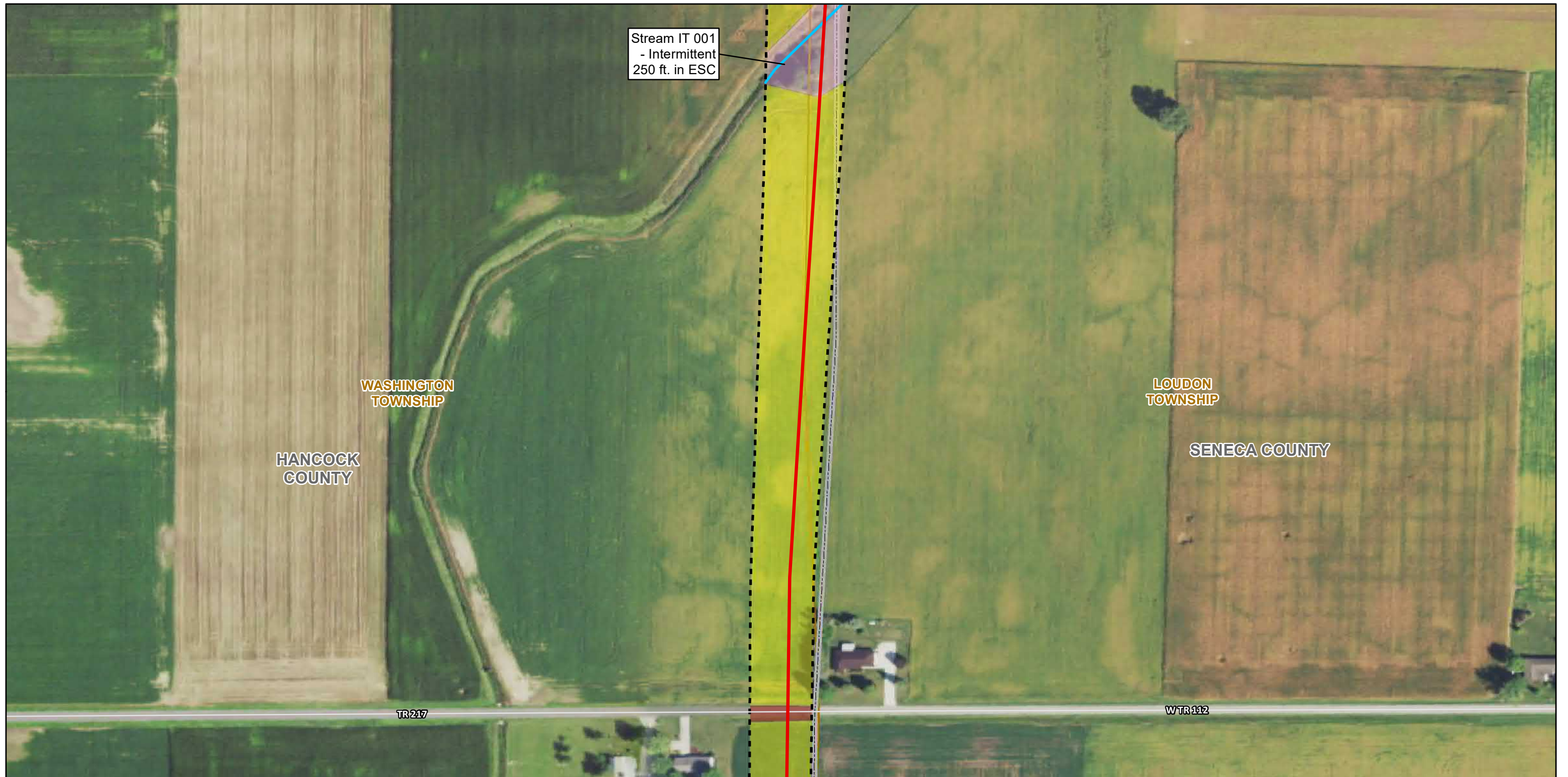
Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**





Stream IT 001  
- Intermittent  
250 ft. in ESC

WASHINGTON  
TOWNSHIP

LOUDON  
TOWNSHIP

HANCOCK  
COUNTY

SENECA COUNTY

TR217

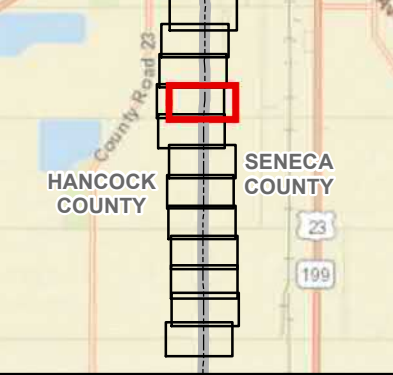
WTR112

- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | Cultivated Cropland           | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | Developed Open Space          | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | Developed, High Intensity     | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | Developed, Medium Intensity   | County Boundary              |
|  |  | Old Field                     |                              |
|  |  | Scrub Shrub                   |                              |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022

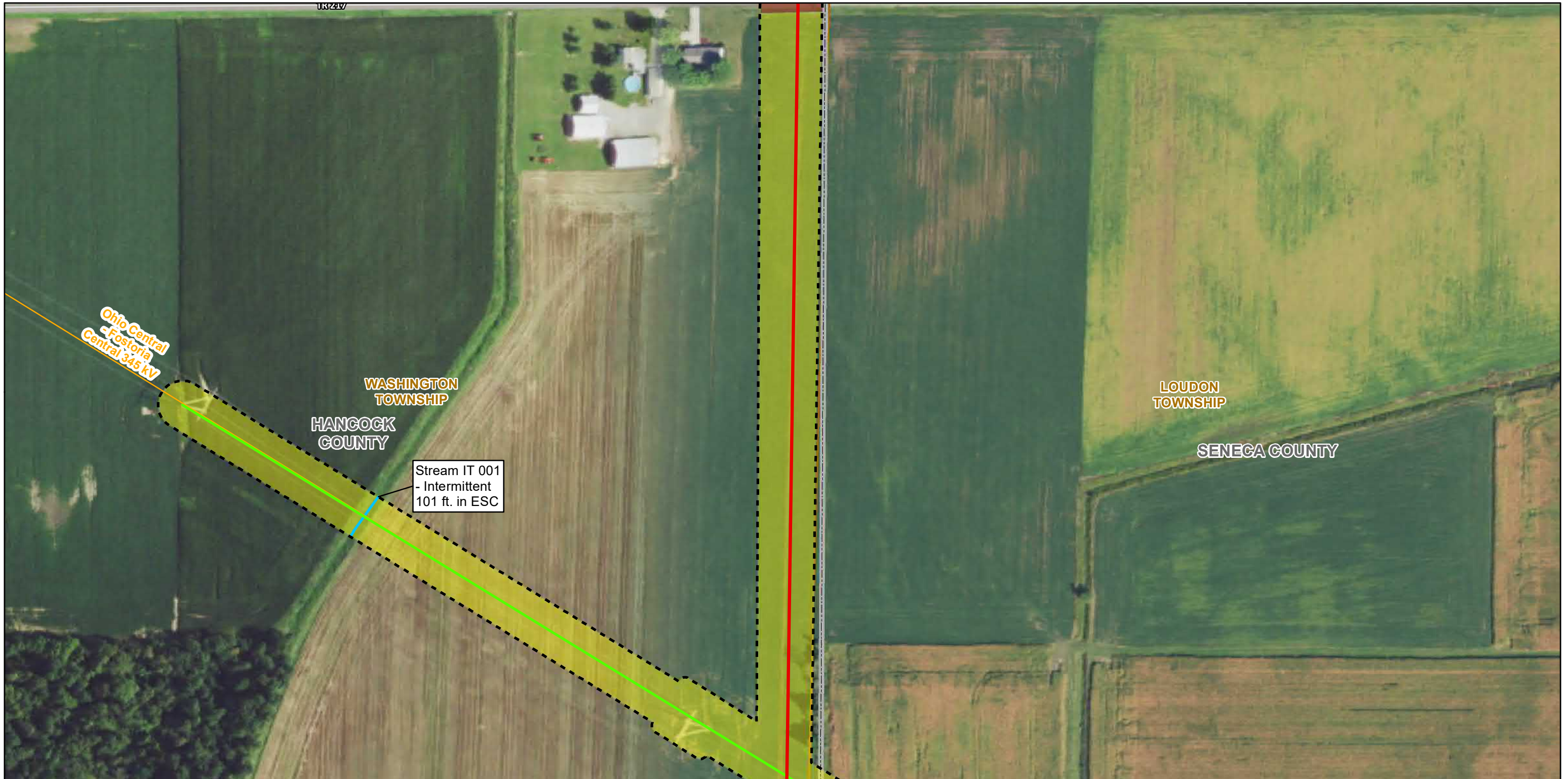


IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT

**Figure 3. Vegetation Coverage**

N

0 200 400 Feet



- ▲ Proposed Substation
- Proposed Switch
- ◻ Culvert
- Proposed Iron Triangle 138 kV Transmission Line
- Proposed Howard-Fostoria 138 kV Mid-Span Structure Project

- Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project
- Non-Jurisdictional Drainage
- Delineated Stream
- Existing Transmission Line
- Railroad

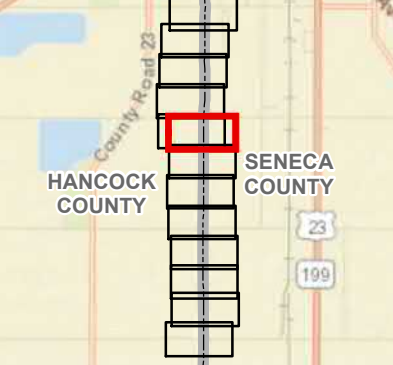
- - - Environmental Survey Corridor
- Cultivated Cropland
- Developed Open Space
- Developed, High Intensity
- Developed, Medium Intensity
- Old Field
- Scrub Shrub

- Successional Hardwood Forest
- Wetlands and Waterbodies
- Municipal Boundary
- Township Boundary
- County Boundary

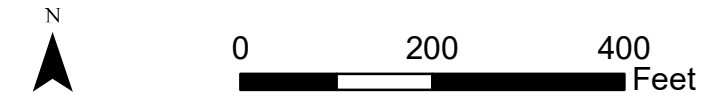
Sources:  
2021 NAIP Imagery (USDA)

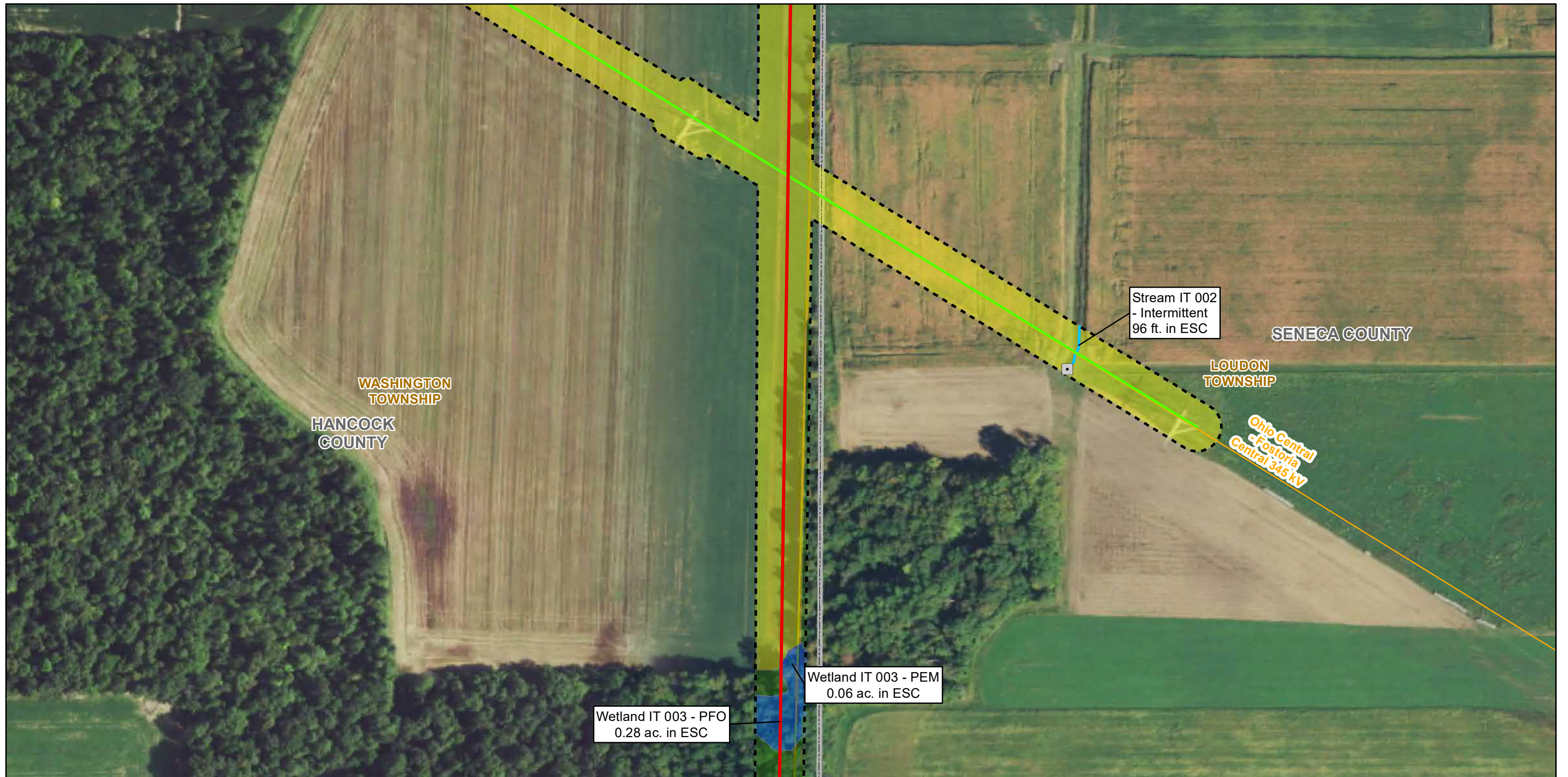
Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**



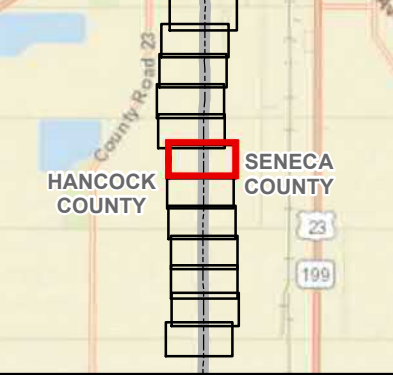


- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | Cultivated Cropland           | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | Developed Open Space          | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | Developed, High Intensity     | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | Developed, Medium Intensity   | County Boundary              |
|  |  | Old Field                     |                              |
|  |  | Scrub Shrub                   |                              |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT

**Figure 3. Vegetation Coverage**

AEP OHIO

WSP

N

0 200 400 Feet



Wetland IT 002 - PFO  
0.11 ac. in ESC

Wetland IT 003 - PFO  
0.28 ac. in ESC

HANCOCK COUNTY

WASHINGTON TOWNSHIP

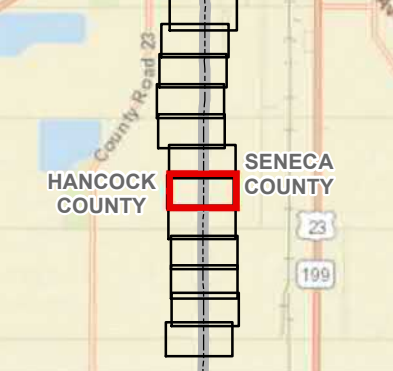
LOUDON TOWNSHIP

SENECA COUNTY

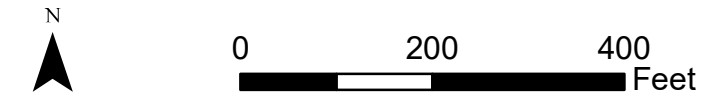
- |  |  |                                   |                              |
|--|--|-----------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | --- Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | ■ Cultivated Cropland             | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | ■ Developed Open Space            | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | ■ Developed, High Intensity       | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | ■ Developed, Medium Intensity     | County Boundary              |
|  |  | ■ Old Field                       |                              |
|  |  | ■ Scrub Shrub                     |                              |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983



IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**





- |  |  |                                   |                              |
|--|--|-----------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | --- Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | ■ Cultivated Cropland             | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | ■ Developed Open Space            | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | ■ Developed, High Intensity       | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | ■ Developed, Medium Intensity     | County Boundary              |
|  |  | ■ Old Field                       |                              |
|  |  | ■ Scrub Shrub                     |                              |

Sources: 2021 NAIP Imagery (USDA)		<p>IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT</p> <p><b>Figure 3. Vegetation Coverage</b></p>
Coordinate System: Ohio State Plane North NAD 1983		
October 28, 2022		



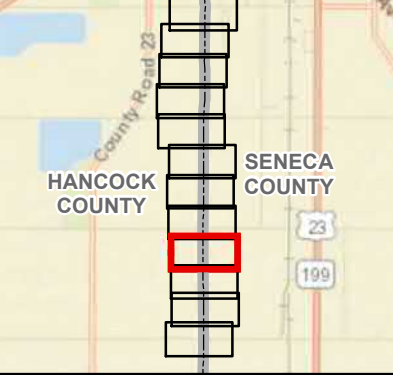


- |  |  |                                   |                              |
|--|--|-----------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | --- Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | ■ Cultivated Cropland             | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | ■ Developed Open Space            | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | ■ Developed, High Intensity       | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | ■ Developed, Medium Intensity     | County Boundary              |
|  |  | ■ Old Field                       |                              |
|  |  | ■ Scrub Shrub                     |                              |

Sources:  
2021 NAIP Imagery (USDA)



Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT

**Figure 3. Vegetation Coverage**

N

0 200 400 Feet

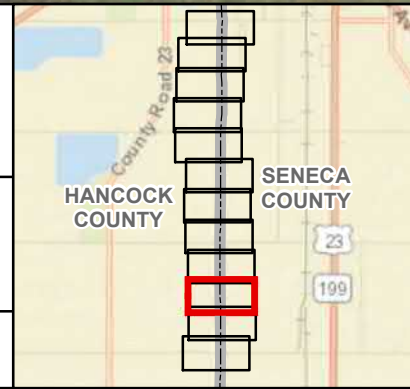


- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation  | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | █ Cultivated Cropland         | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | █ Developed Open Space        | Municipal Boundary           |
| — Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | █ Developed, High Intensity   | Township Boundary            |
| — Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | █ Developed, Medium Intensity | County Boundary              |
|  |  | █ Old Field                   |                              |
|  |  | █ Scrub Shrub                 |                              |

Sources:  
2021 NAIP Imagery (USDA)

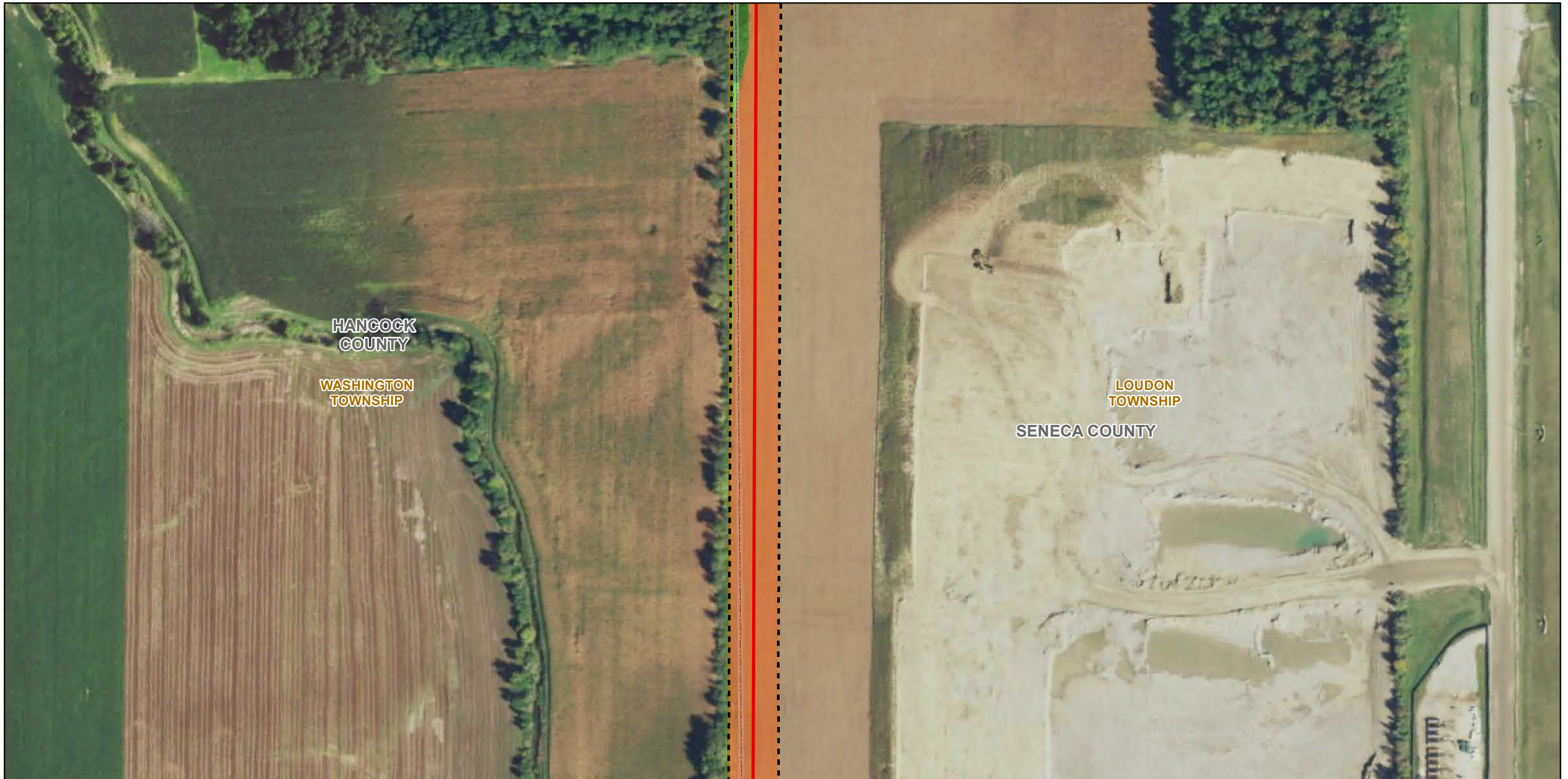
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Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**



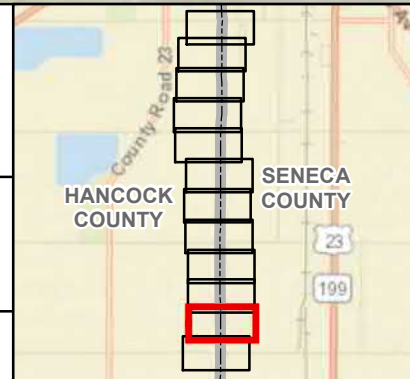


- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation                                      | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | Cultivated Cropland           | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | Developed Open Space          | Municipal Boundary           |
| Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | Developed, High Intensity     | Township Boundary            |
| Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | Developed, Medium Intensity   | County Boundary              |
|  |  | Old Field                     |                              |
|  |  | Scrub Shrub                   |                              |

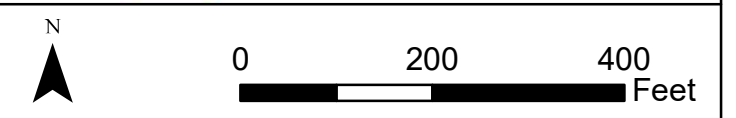
Sources:  
2021 NAIP Imagery (USDA)

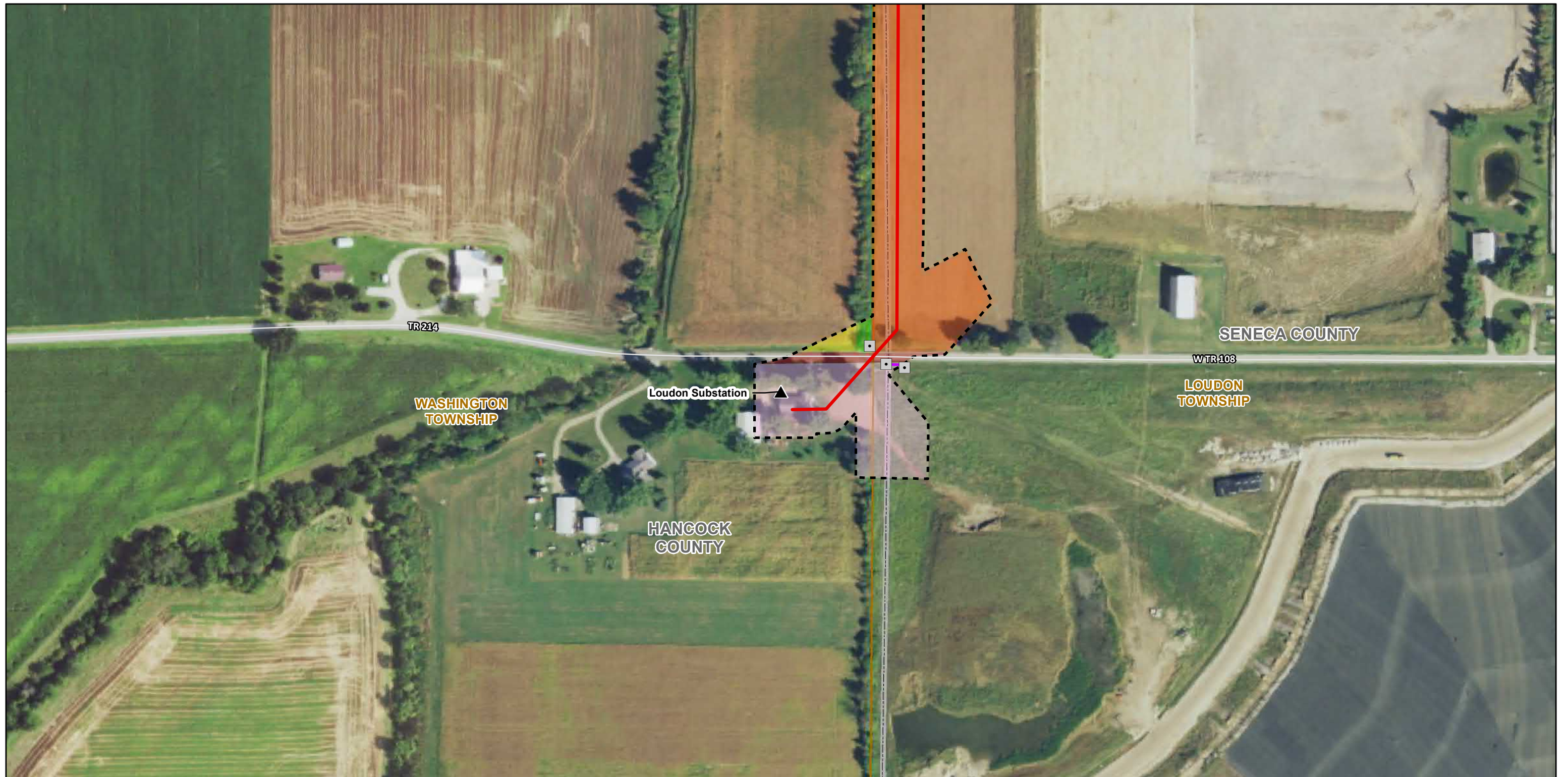
Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV  
TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**



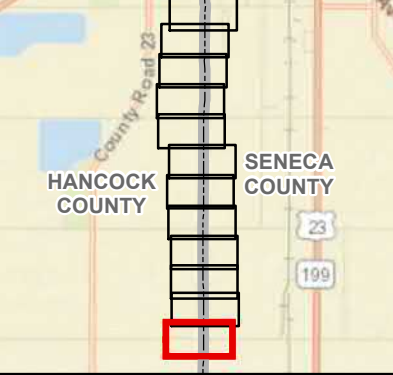


- |  |  |                               |                              |
|--|--|-------------------------------|------------------------------|
| ▲ Proposed Substation                                      | Proposed Ohio Central-Fostoria Central 345 kV Line Raise Project | Environmental Survey Corridor | Successional Hardwood Forest |
| ● Proposed Switch  | Non-Jurisdictional Drainage                                      | Cultivated Cropland           | Wetlands and Waterbodies     |
| ■ Culvert  | Delineated Stream  | Developed Open Space          | Municipal Boundary           |
| Proposed Iron Triangle 138 kV Transmission Line            | Existing Transmission Line                                       | Developed, High Intensity     | Township Boundary            |
| Proposed Howard-Fostoria 138 kV Mid-Span Structure Project | Railroad   | Developed, Medium Intensity   | County Boundary              |
|  |  | Old Field                     |                              |
|  |  | Scrub Shrub                   |                              |

Sources:  
2021 NAIP Imagery (USDA)

Coordinate System:  
Ohio State Plane North  
NAD 1983

October 28, 2022



IRON TRIANGLE 138 KV TRANSMISSION LINE PROJECT  
**Figure 3. Vegetation Coverage**



# APPENDIX

## **B** USACE WETLAND DETERMINATION FORMS – MIDWEST REGION

Project/Site: Iron Triangle Project City/County: Seneca Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: WDP 001  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1024 Long: -83.4207 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Depressional PFO wetland in remnant treelot.	

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	25	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	
3. <u>Tilia americana</u>	5	No	FACU	
4. <u>Fagus grandifolia</u>	5	No	FACU	
5. _____	45	=Total Cover		
<b>Sapling/Shrub Stratum (Plot size: <u>10</u>)</b>				
1. <u>Fraxinus pennsylvanica</u>	15	Yes	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	15	=Total Cover		
<b>Herb Stratum (Plot size: <u>5</u>)</b>				
1. <u>Carex grayi</u>	25	Yes	FACW	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Trifolium repens</u>	15	Yes	FAC	
3. <u>Carex squarrosa</u>	10	No	OBL	
4. <u>Bidens frondosa</u>	5	No	FACW	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	55	=Total Cover		
<b>Woody Vine Stratum (Plot size: <u>10</u>)</b>				
1. <u>Toxicodendron radicans</u>	10	Yes	FAC	<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
2. _____	10	=Total Cover		

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

**SOIL**

Sampling Point: WDP 001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/2	100					Loamy/Clayey	
4 - 16	10YR 5/2	90	7.5YR 5/6	10	C	M		Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)		
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input checked="" type="checkbox"/> Redox Depressions (F8)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

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

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

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

Remarks:

Project/Site: Iron Triangle Project City/County: Seneca Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: UDP 001  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): plain Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1025 Long: -83.4208 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
---	--

Remarks:  
 Upland data point corresponding to Depressional PFO wetland IT 001 in remnant treelot.

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

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<b>Tree Stratum</b> (Plot size: <u>20</u> )																																				
1. <u>Acer rubrum</u>	20	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																																
2. <u>Fagus grandifolia</u>	15	Yes	FACU																																	
3. <u>Tilia americana</u>	10	Yes	FACU																																	
4. <u>Carya ovata</u>	5	No	FACU																																	
5. _____	50	=Total Cover																																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>10</u> )																																				
1. <u>Rubus allegheniensis</u>	15	Yes	FACU	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 50%;"></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">0</td> <td>x 1 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">5</td> <td>x 2 =</td> <td style="text-align: center;">10</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">60</td> <td>x 3 =</td> <td style="text-align: center;">180</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">70</td> <td>x 4 =</td> <td style="text-align: center;">280</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">135</td> <td>(A)</td> <td style="text-align: center;">470 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td></td> <td style="text-align: center;">3.48</td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	0	x 1 =	0	FACW species	5	x 2 =	10	FAC species	60	x 3 =	180	FACU species	70	x 4 =	280	UPL species	0	x 5 =	0	Column Totals:	135	(A)	470 (B)	Prevalence Index = B/A =			3.48
Total % Cover of:		Multiply by:																																		
OBL species	0	x 1 =	0																																	
FACW species	5	x 2 =	10																																	
FAC species	60	x 3 =	180																																	
FACU species	70	x 4 =	280																																	
UPL species	0	x 5 =	0																																	
Column Totals:	135	(A)	470 (B)																																	
Prevalence Index = B/A =			3.48																																	
2. <u>Fraxinus pennsylvanica</u>	5	Yes	FACW																																	
3. _____																																				
4. _____																																				
5. _____	20	=Total Cover																																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																				
1. <u>Parthenocissus quinquefolia</u>	25	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. <u>Trifolium repens</u>	15	Yes	FAC																																	
3. <u>Geum canadense</u>	10	No	FAC																																	
4. <u>Viola sororia</u>	5	No	FAC																																	
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____	55	=Total Cover																																		
<b>Woody Vine Stratum</b> (Plot size: <u>10</u> )																																				
1. <u>Toxicodendron radicans</u>	10	Yes	FAC	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																																
2. _____	10	=Total Cover																																		

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



**SOIL**

Sampling Point: UDP 001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 5/3	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <u>X</u>
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Remarks:

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Iron Triangle Project City/County: Hancock Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: WDP 002  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1149 Long: -83.4215 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Depressional PFO wetland in remnant treelot.	

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	25	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	
3. <u>Quercus bicolor</u>	10	Yes	FACW	
4. <u>Fagus grandifolia</u>	5	No	FACU	
5. <u>Tilia americana</u>	5	No	FACU	
	55 =Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10</u> )				
1. <u>Fraxinus pennsylvanica</u>	20	Yes	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
	20 =Total Cover			<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5</u> )				
1. <u>Carex grayi</u>	25	Yes	FACW	
2. <u>Carex grayi</u>	10	Yes	FACW	
3. <u>Impatiens capensis</u>	10	Yes	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	45 =Total Cover			
Woody Vine Stratum (Plot size: <u>10</u> )				
1. <u>Toxicodendron radicans</u>	10	Yes	FAC	
2. _____				
	10 =Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: WDP 002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 3/3	100					Loamy/Clayey	
4 - 12	10YR 5/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input checked="" type="checkbox"/> Redox Depressions (F8)				

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Midwest Region</b> See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp:11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Iron Triangle Project City/County: Hancock Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: UDP 002-003  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): plain Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1152 Long: -83.4214 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
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Remarks:  
 Upland data point corresponding to Depressional PFO wetland IT 002 and PEM/PFO wetland IT 003 in remnant treelot.

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	15	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u>Fagus grandifolia</u>	15	Yes	FACU																	
3. <u>Tilia americana</u>	10	No	FACU																	
4. <u>Carya ovata</u>	10	No	FACU																	
5. <u>Asimina triloba</u>	5	No	FAC																	
	55 = Total Cover																			
<b>Sapling/Shrub Stratum (Plot size: <u>10</u>)</b>																				
1. <u>Rubus allegheniensis</u>	15	Yes	FACU	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>605</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.67</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>165</u> (A)	<u>605</u> (B)	Prevalence Index = B/A = <u>3.67</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>85</u>	x 4 = <u>340</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>165</u> (A)	<u>605</u> (B)																			
Prevalence Index = B/A = <u>3.67</u>																				
2. <u>Lonicera maackii</u>	15	Yes	UPL																	
3. <u>Fraxinus pennsylvanica</u>	5	No	FACW																	
4. _____																				
5. _____																				
	35 = Total Cover																			
<b>Herb Stratum (Plot size: <u>5</u>)</b>																				
1. <u>Parthenocissus quinquefolia</u>	25	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Trifolium repens</u>	15	Yes	FAC																	
3. <u>Geum canadense</u>	10	No	FAC																	
4. <u>Podophyllum peltatum</u>	10	No	FACU																	
5. <u>Viola sororia</u>	5	No	FAC																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
	65 = Total Cover																			
<b>Woody Vine Stratum (Plot size: <u>10</u>)</b>																				
1. <u>Toxicodendron radicans</u>	10	Yes	FAC	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																
2. _____																				
	10 = Total Cover																			

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

**SOIL**

Sampling Point: UDP 002-003

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 5/4	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> Coast Prairie Redox (A16)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes <input type="checkbox"/>      No <input checked="" type="checkbox"/></p>
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Remarks:

**HYDROLOGY**

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

Remarks:

Project/Site: Iron Triangle Project City/County: Hancock Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: WDP 003a  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1155 Long: -83.4214 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Depressional PFO wetland in remnant treelot.	

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	25	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	
3. <u>Quercus bicolor</u>	10	Yes	FACW	
4. <u>Fagus grandifolia</u>	5	No	FACU	
5. <u>Populus deltoides</u>	5	No	FAC	
	55 =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>10</u> )				
1. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
	10 =Total Cover			
Herb Stratum (Plot size: <u>5</u> )				
1. <u>Carex grayi</u>	3	No	FACW	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Persicaria virginiana</u>	1	No	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	4 =Total Cover			
Woody Vine Stratum (Plot size: _____)				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
2. _____				
	=Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: WDP 003a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 2/1	100					Loamy/Clayey	
4 - 12	10YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input checked="" type="checkbox"/> Redox Depressions (F8)			<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Red Parent Material (F21) <input type="checkbox"/> Very Shallow Dark Surface (F22) <input type="checkbox"/> Other (Explain in Remarks)		
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input checked="" type="checkbox"/> No _____    Depth (inches): 12 (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Iron Triangle Project City/County: Hancock Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: WDP 003b  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1158 Long: -83.4214 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Depressional PEM wetland adjacent to remnant treelot.	

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	10	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
2. <u>Populus deltoides</u>	5	Yes	FAC	
3. <u>Fagus grandifolia</u>	5	Yes	FACU	
4. _____				
5. _____				
	<u>20</u>	=Total Cover		
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
		=Total Cover		
<b>Herb Stratum (Plot size: <u>5</u>)</b>				
1. <u>Echinochloa crus-galli</u>	35	Yes	FACW	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Eleocharis obtusa</u>	20	Yes	OBL	
3. <u>Penthorum sedoides</u>	10	No	FAC	
4. <u>Salix nigra</u>	10	No	OBL	
5. <u>Juncus effusus</u>	5	No	OBL	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>80</u>	=Total Cover		
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____
2. _____				
		=Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				



**SOIL**

Sampling Point: WDP 003b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 5/2	90	7.5YR 5/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input checked="" type="checkbox"/> Redox Depressions (F8)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Gauge or Well Data (D9)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Other (Explain in Remarks)

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> Water Table Present?      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation Present?        Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Iron Triangle Project City/County: Senea Sampling Date: 9/14/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: WDP 008  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): none  
 Slope (%): 1 Lat: 41.1319 Long: -83.4191 Datum: WGS 84  
 Soil Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0 to 2 percent slopes NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks: Seemingly isolated depressional emergent wetland at the edge of a remnant woodlot.	

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

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5</u> )				
1. <u>Impatiens capensis</u>	45	Yes	FACW	
2. <u>Microstegium vimineum</u>	15	Yes	FAC	
3. <u>Euthamia graminifolia</u>	10	No	FACW	
4. <u>Solidago rugosa</u>	5	No	FAC	
5. <u>Carex vulpinoidea</u>	5	No	FACW	
6. <u>Lycopus americanus</u>	5	No	OBL	
7. <u>Persicaria pensylvanica</u>	5	No	FACW	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
90 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  
 Total Number of Dominant Species Across All Strata: 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 \_\_\_\_\_ x 1 = \_\_\_\_\_  
 FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_  
 FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_  
 FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_  
 UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_  
 Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)  
 Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**  
 \_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation  
X 2 - Dominance Test is >50%  
 \_\_\_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)  
<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No \_\_\_\_\_

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

**SOIL**

Sampling Point: WDP 008

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 16	10YR 5/2	85	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<p><b>Hydric Soil Indicators:</b></p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input checked="" type="checkbox"/> Redox Depressions (F8)</p>	<p><b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b></p> <p><input type="checkbox"/> Coast Prairie Redox (A16)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p><b>Restrictive Layer (if observed):</b></p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p><b>Hydric Soil Present?</b>      Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/></p>
--	--

Remarks:

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p>	<p><u>Secondary Indicators (minimum of two required)</u></p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
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<p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____</p> <p>Water Table Present?      Yes <input type="checkbox"/>    No <input checked="" type="checkbox"/>    Depth (inches): _____</p> <p>Saturation Present?        Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/>        Depth (inches): <u>6</u></p> <p>(includes capillary fringe)</p>	<p><b>Wetland Hydrology Present?</b>    Yes <input checked="" type="checkbox"/>    No <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Project/Site: Iron Triangle Project City/County: Seneca Sampling Date: 7/25/2022  
 Applicant/Owner: AEP Ohio State: OH Sampling Point: UDP 008  
 Investigator(s): B. Rolfes Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): plain Local relief (concave, convex, none): none  
 Slope (%): 0 Lat: 41.1318 Long: -83.4192 Datum: WGS 84  
 Soil Map Unit Name: Le - Lenawee silty clay loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u>
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Remarks:  
 Depressional forested area - lacking indicators of wetland hydrology or hydrophytic vegetation present.

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

Tree Stratum (Plot size: <u>20</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Carya ovata</u>	25	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37.5%</u> (A/B)																
2. <u>Tilia americana</u>	15	Yes	FACU																	
3. <u>Tilia americana</u>	15	Yes	FACU																	
4. <u>Ulmus americana</u>	5	No	FACW																	
5. <u>Gleditsia triacanthos</u>	5	No	FACU																	
65 =Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>520</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.35</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>155</u> (A)	<u>520</u> (B)	Prevalence Index = B/A = <u>3.35</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>75</u>	x 4 = <u>300</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>155</u> (A)	<u>520</u> (B)																			
Prevalence Index = B/A = <u>3.35</u>																				
25 =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>10</u> )																				
1. <u>Lonicera maackii</u>	15	Yes	UPL	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW																	
3. _____																				
4. _____																				
5. _____																				
25 =Total Cover																				
Herb Stratum (Plot size: <u>5</u> )																				
1. <u>Cinna arundinacea</u>	25	Yes	FACW	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																
2. <u>Toxicodendron radicans</u>	15	Yes	FAC																	
3. <u>Parthenocissus quinquefolia</u>	15	Yes	FACU																	
4. <u>Carex grayi</u>	10	No	FACW																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
65 =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																
2. _____																				
=Total Cover																				

Remarks: (Include photo numbers here or on a separate sheet.)  
 Lacking any indicator of hydrophytic vegetation

**SOIL**

Sampling Point: UDP 008

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 4	10YR 2/1	100					Loamy/Clayey	
4 - 12	10YR 5/2	90	10YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:			Indicators for Problematic Hydric Soils <sup>3</sup> :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input checked="" type="checkbox"/> Redox Depressions (F8)				

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

**HYDROLOGY**

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

<b>Field Observations:</b> Surface Water Present?    Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes _____    No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Lacking any indicators of Wetland Hydrology.

# APPENDIX

## C OEPA ORAM DATA FORMS

## Background Information

<b>Name:</b>	Brad Rolfes
<b>Date:</b>	7/25/2022
<b>Affiliation:</b>	WSP USA
<b>Address:</b>	312 Elm Street; Cincinnati, OH
<b>Phone Number:</b>	859-321-1058
<b>e-mail address:</b>	brad.rolfes@wsp.com
<b>Name of Wetland:</b>	Wetland IT 001
<b>Vegetation Community(ies):</b>	PFO
<b>HGM Class(es):</b>	Depression
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>	
<p>Please refer to attached mapping.</p>	
Lat/Long or UTM Coordinate	41.1024, -83.4207
USGS Quad Name	Alvada
County	Seneca
Township	Loudon
Section and Subsection	
Hydrologic Unit Code	
Site Visit	X
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	

<b>Name of Wetland:</b> Wetland IT 001	
<b>Wetland Size (acres, hectares):</b>	0.04
<b>Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.</b>	
See Attached Mapping	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<b>Final score :33</b>	<b>Category: 2</b>



## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

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

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

**Table 1. Characteristic plant species.**

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

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

Site: Iron Triangle 138 kv Project

Rater(s): B. Rolfes

Date: 7/25/2022

0	0
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### Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

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

8	8
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### Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

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

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

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

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

8	16
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### Metric 3. Hydrology.

max 30 pts. subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

9	25
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### Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

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

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

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

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

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

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

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

25
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subtotal this page

<b>Site:</b> Iron Triangle 138 kv Project	<b>Rater(s):</b> B. Rolfes	<b>Date:</b> 7/25/2022
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25
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subtotal first page

5	30
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max 10 pts.      subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3	33
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max 20 pts.      subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

#### Vegetation Community Cover Scale

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

#### Narrative Description of Vegetation Quality

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

33
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**End of Quantitative Rating. Complete Categorization Worksheets.**

# ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES NO ✓	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO ✓	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO ✓	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO ✓	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO ✓	If yes, Category 1.
	Question 6. Bogs	YES NO ✓	If yes, Category 3.
	Question 7. Fens	YES NO ✓	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO ✓	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO ✓	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO ✓	If yes, Category 3
Question 11. Relict Wet Prairies	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	5	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	33	Category based on score breakpoints 2

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

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

**Final Category**

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



## Background Information

<b>Name:</b>	Brad Rolfes
<b>Date:</b>	7/25/2022
<b>Affiliation:</b>	WSP USA
<b>Address:</b>	312 Elm Street; Cincinnati, OH
<b>Phone Number:</b>	859-321-1058
<b>e-mail address:</b>	brad.rolfes@wsp.com
<b>Name of Wetland:</b>	Wetland IT 002
<b>Vegetation Community(ies):</b>	PFO
<b>HGM Class(es):</b>	Depression
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>	
<p>Please refer to attached mapping.</p>	
Lat/Long or UTM Coordinate	41.1148, -83.4216
USGS Quad Name	Alvada
County	Hancock
Township	Washington
Section and Subsection	
Hydrologic Unit Code	
Site Visit	X
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	

<b>Name of Wetland:</b> Wetland IT 002	
<b>Wetland Size (acres, hectares):</b>	0.12
<b>Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.</b>	
See Attached Mapping	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<b>Final score :32</b>	<b>Category: 2</b>

## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

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

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

**Table 1. Characteristic plant species.**

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

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

Site: Iron Triangle 138 kv Project

Rater(s): B. Rolfes

Date: 7/25/2022

1	1
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### Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

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

8	9
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### Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

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

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

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

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

8	17
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### Metric 3. Hydrology.

max 30 pts. subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

8	25
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### Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

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

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

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

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

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

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

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

25
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subtotal this page

<b>Site:</b> Iron Triangle 138 kv Project	<b>Rater(s):</b> B. Rolfes	<b>Date:</b> 7/25/2022
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25
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subtotal first page

5	30
max 10 pts.	subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2	32
max 20 pts.	subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1  Emergent
- Shrub
- 1  Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

#### Vegetation Community Cover Scale

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

#### Narrative Description of Vegetation Quality

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

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



## ORAM Summary Worksheet

		<b>circle answer or insert score</b>	<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES NO ✓	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO ✓	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO ✓	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO ✓	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO ✓	If yes, Category 1.
	Question 6. Bogs	YES NO ✓	If yes, Category 3.
	Question 7. Fens	YES NO ✓	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO ✓	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO ✓	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO ✓	If yes, Category 3
Question 11. Relict Wet Prairies	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	5	
	Metric 6. Plant communities, interspersions, microtopography	2	
	TOTAL SCORE	32	Category based on score breakpoints 2

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

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

**Final Category**

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

## Background Information

<b>Name:</b>	Brad Rolfes
<b>Date:</b>	7/25/2022
<b>Affiliation:</b>	WSP USA
<b>Address:</b>	312 Elm Street; Cincinnati, OH
<b>Phone Number:</b>	859-321-1058
<b>e-mail address:</b>	brad.rolfes@wsp.com
<b>Name of Wetland:</b>	Wetland IT 003
<b>Vegetation Communit(ies):</b>	PFO/PEM
<b>HGM Class(es):</b>	Depression
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>	
<p>Please refer to attached mapping.</p>	
Lat/Long or UTM Coordinate	41.1156, -83.4215
USGS Quad Name	Alvada
County	Hancock
Township	Washington
Section and Subsection	
Hydrologic Unit Code	
Site Visit	X
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	

<b>Name of Wetland:</b> Wetland IT 003	
<b>Wetland Size (acres, hectares):</b>	0.43
<b>Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.</b>	
See Attached Mapping	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<b>Final score :</b> 35	<b>Category:</b> 2

## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

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

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

**Table 1. Characteristic plant species.**

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

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



Site: Iron Triangle 138 kv Project

Rater(s): B. Rolfes

Date: 7/25/2022

2	2
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### Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

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

5	7
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### Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

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

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

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

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

9	16
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### Metric 3. Hydrology.

max 30 pts. subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

9	25
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### Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

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

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

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

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

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

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

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

25
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subtotal this page

<b>Site:</b> Iron Triangle 138 kv Project	<b>Rater(s):</b> B. Rolfes	<b>Date:</b> 7/25/2022
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25

subtotal first page

5	30
max 10 pts.	subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

5	35
max 20 pts.	subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1  Emergent
- Shrub
- 1  Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

#### Vegetation Community Cover Scale

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

#### Narrative Description of Vegetation Quality

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

35

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

## ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES NO ✓	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO ✓	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO ✓	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO ✓	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO ✓	If yes, Category 1.
	Question 6. Bogs	YES NO ✓	If yes, Category 3.
	Question 7. Fens	YES NO ✓	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO ✓	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO ✓	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO ✓	If yes, Category 3
Question 11. Relict Wet Prairies	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	5	
	Metric 6. Plant communities, interspersions, microtopography	5	
	TOTAL SCORE	35	Category based on score breakpoints 2

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

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

**Final Category**

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

## Background Information

<b>Name:</b>	Brad Rolfes	
<b>Date:</b>	9/14/2022	
<b>Affiliation:</b>	WSP USA	
<b>Address:</b>	312 Elm Street; Cincinnati, OH	
<b>Phone Number:</b>	859-321-1058	
<b>e-mail address:</b>	brad.rolfes@wsp.com	
<b>Name of Wetland:</b>	Wetland IT 008	
<b>Vegetation Communit(ies):</b>	PEM	
<b>HGM Class(es):</b>	Depression	
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>		
<p>Please refer to attached mapping.</p>		
Lat/Long or UTM Coordinate	41.1319, -83.4191	
USGS Quad Name	Fostoria	
County	Seneca	
Township	Loudon	
Section and Subsection		
Hydrologic Unit Code		
Site Visit	X	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map		
Soil Survey	X	
Delineation report/map		

<b>Name of Wetland:</b> Wetland IT 008	
<b>Wetland Size (acres, hectares):</b>	0.04
<b>Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.</b>	
<p>See Attached Mapping</p>	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<b>Final score :17</b>	<b>Category: 1</b>

## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

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



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

**Table 1. Characteristic plant species.**

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

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

Site: Iron Triangle 138 kv Project

Rater(s): B. Rolfes

Date: 9/14/2022

0	0
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### Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

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

6	6
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### Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

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

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

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

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

7	13
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### Metric 3. Hydrology.

max 30 pts. subtotal

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

3	16
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### Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

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

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

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

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

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

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

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

16
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subtotal this page

<b>Site:</b> Iron Triangle 138 kv Project	<b>Rater(s):</b> B. Rolfes	<b>Date:</b> 9/14/2022
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16

subtotal first page

0	16
max 10 pts.	subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1	17
max 20 pts.	subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- Emergent
- Shrub
- Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

#### Vegetation Community Cover Scale

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

#### Narrative Description of Vegetation Quality

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

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

## ORAM Summary Worksheet

		<b>circle answer or insert score</b>	<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES NO ✓	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO ✓	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO ✓	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO ✓	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO ✓	If yes, Category 1.
	Question 6. Bogs	YES NO ✓	If yes, Category 3.
	Question 7. Fens	YES NO ✓	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO ✓	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO ✓	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO ✓	If yes, Category 3
Question 11. Relict Wet Prairies	YES NO ✓	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	6	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	1	
	TOTAL SCORE	17	Category based on score breakpoints 1

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

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

**Final Category**

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

# APPENDIX

## D OEPA STREAM DATA FORMS

SITE NAME/LOCATION **AEP Iron Triangle Project**

SITE NUMBER **IT 001** RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) **0.77**

LENGTH OF STREAM REACH (ft) **459** LAT. **41.12020** LONG. **-83.42450** RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE **07/25/22** SCORER **BJR** COMMENTS **Intermittent Stream (high water - recent rainfall)**

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

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

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	60%
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	0%	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	10%
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	5%	<input type="checkbox"/> <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	20%
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	5%	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	0%

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

Substrate Percentage Check (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3**      **TOTAL NUMBER OF SUBSTRATE TYPES: 5**

**HHEI Metric Points**

Substrate Max = 40

8

A + B

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

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

COMMENTS **High Water - Typical pool ~10 - 22.5 cm**      **MAXIMUM POOL DEPTH (centimeters): 50**

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

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

COMMENTS \_\_\_\_\_      **AVERAGE BANKFULL WIDTH (meters): 2.25**

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> (Per Bank) Wide >10m	<input type="checkbox"/>	<input type="checkbox"/> (Most Predominant per Bank) Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/> Moderate 5-10m	<input type="checkbox"/>	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/> Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/> Residential, Park, New Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/> Fenced Pasture
		<input type="checkbox"/>	<input type="checkbox"/> Conservation Tillage
		<input type="checkbox"/>	<input type="checkbox"/> Urban or Industrial
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/> Mining or Construction

COMMENTS \_\_\_\_\_

**Pool Depth Max = 30**

25

**Bankfull Width Max=30**

20

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

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

COMMENTS **Typically Intermittent Stream, draining adjacent Agricultural fields**

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

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

**STREAM GRADIENT ESTIMATE**

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



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

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

**DOWNSTREAM DESIGNATED USE(S)**

<input checked="" type="checkbox"/> WWH Name: <b>East Branch Portage River</b>	Distance from Evaluated Stream	<b>2.00</b>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

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

USGS Quadrangle Name: **Alvada** NRCS Soil Map Page:  NRCS Soil Map Stream Order   
 County: **Hancock** Township / City: **Washington**

**MISCELLANEOUS**

Base Flow Conditions? (Y/N):  **N** Date of last precipitation: **07/25/22** Quantity: **0.19**  
 Photograph Information:   
 Elevated Turbidity? (Y/N):  **Y** Canopy (% open): **100%**  
 Were samples collected for water chemistry? (Y/N):  **N** (Note lab sample no. or id. and attach results) Lab Number:   
 Field Measures: Temp (°C)  Dissolved Oxygen (mg/l)  pH (S.U.)  Conductivity (µmhos/cm)   
 Is the sampling reach representative of the stream (Y/N)  **N** If not, please explain:

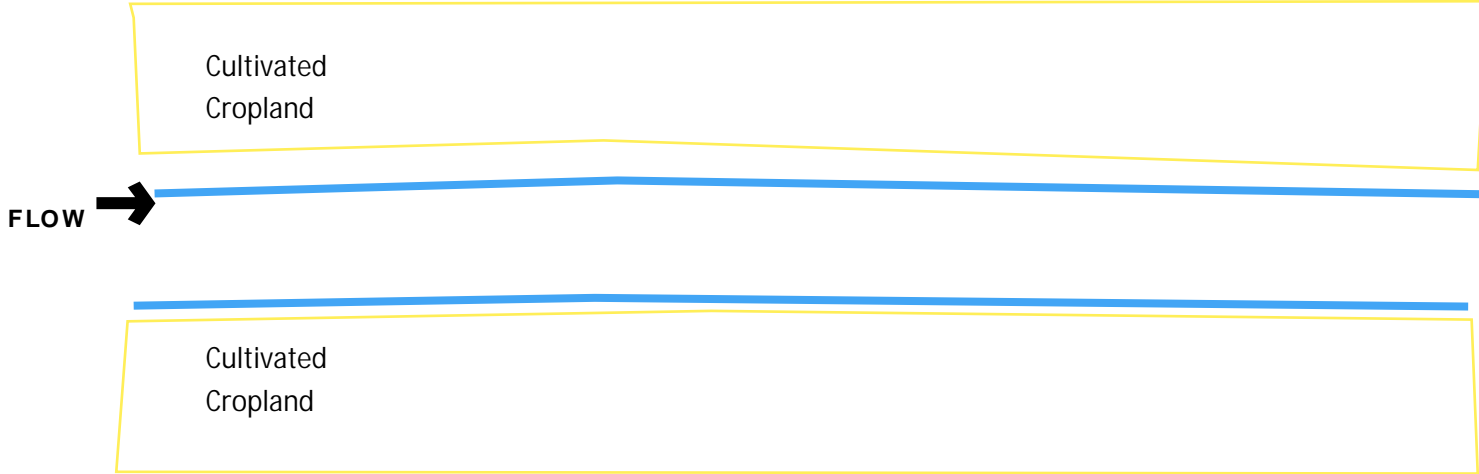
Additional comments/description of pollution impacts:

**BIOTIC EVALUATION**

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

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



SITE NAME/LOCATION **AEP Iron Triangle Project**

SITE NUMBER **IT 002** RIVER BASIN \_\_\_\_\_ DRAINAGE AREA (mi<sup>2</sup>) **0.60**

LENGTH OF STREAM REACH (ft) **125** LAT. **41.11762** LONG. **-83.41933** RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_

DATE **10/27/22** SCORER **BJR** COMMENTS **Intermittent Stream**

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

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

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	60%
<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> <input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	0%
<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pt]	0%	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	10%
<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	5%	<input type="checkbox"/> <input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	25%
<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	0%	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	0%

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

Substrate Percentage Check (B)

**SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3**      **TOTAL NUMBER OF SUBSTRATE TYPES: 4**

**HHEI Metric Points**

Substrate Max = 40

7

A + B

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

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

COMMENTS \_\_\_\_\_ **MAXIMUM POOL DEPTH (centimeters): 8**

Pool Depth Max = 30

15

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

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

COMMENTS \_\_\_\_\_ **AVERAGE BANKFULL WIDTH (meters): 1.25**

Bankfull Width Max=30

15

**This information must also be completed**

**RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
None		Fenced Pasture	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Open Pasture, Row Crop	
		Mining or Construction	

COMMENTS \_\_\_\_\_

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

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

COMMENTS \_\_\_\_\_

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

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

**STREAM GRADIENT ESTIMATE**

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

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

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

**DOWNSTREAM DESIGNATED USE(S)**

<input checked="" type="checkbox"/> WWH Name:	<input type="text" value="East Branch Portage River"/>	Distance from Evaluated Stream	<input type="text" value="2.10"/>
<input type="checkbox"/> CWH Name:	<input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name:	<input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

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

USGS Quadrangle Name:  NRCS Soil Map Page:  NRCS Soil Map Stream Order

County:  Township / City:

**MISCELLANEOUS**

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photograph Information:

Elevated Turbidity? (Y/N):  Canopy (% open):

Were samples collected for water chemistry? (Y/N):  (Note lab sample no. or id. and attach results) Lab Number:

Field Measures: Temp (°C)  Dissolved Oxygen (mg/l)  pH (S.U.)  Conductivity (µmhos/cm)

Is the sampling reach representative of the stream (Y/N)  If not, please explain:

Additional comments/description of pollution impacts:

**BIOTIC EVALUATION**

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

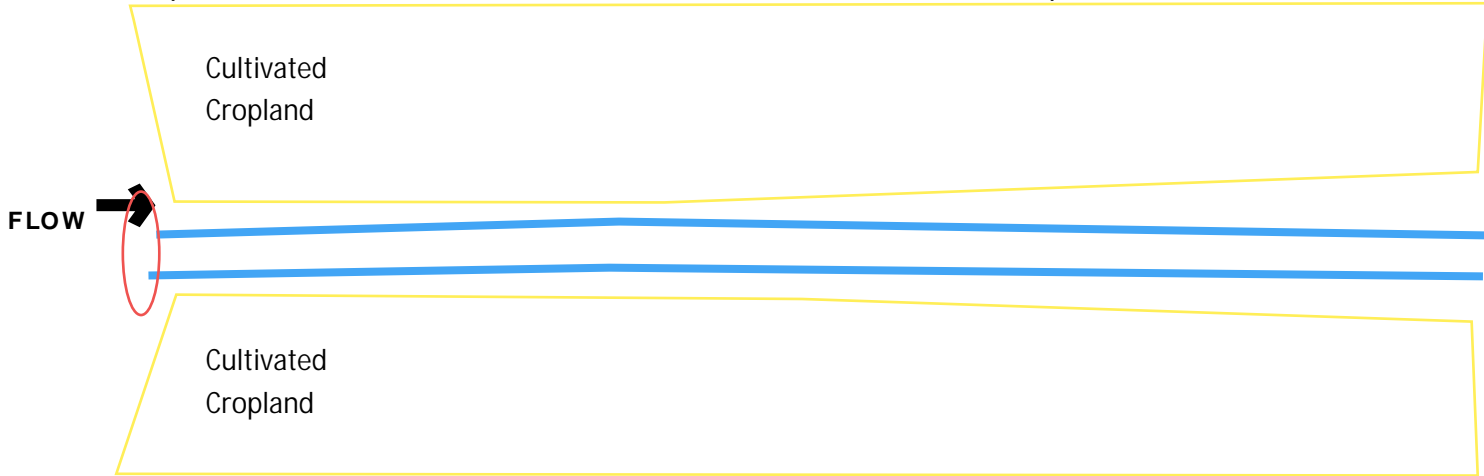
Fish Observed? (Y/N)  Voucher? (Y/N)  Salamanders Observed? (Y/N)  Voucher? (Y/N)

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

Comments Regarding Biology:

**DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):**

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



# APPENDIX

## E REPRESENTATIVE PHOTOGRAPHS

PHOTOGRAPH 1



Wetland IT 001 (PFO), facing north on July 25, 2022.

PHOTOGRAPH 2



Wetland IT 001 (PFO), facing south on July 25, 2022.

PHOTOGRAPH 3



Wetland IT 001 (PFO), facing east on July 25, 2022.

PHOTOGRAPH 4



Wetland IT 001 (PFO), facing west on July 25, 2022.

PHOTOGRAPH 5



Upland IT 001, facing north on July 25, 2022.

PHOTOGRAPH 6



Upland IT 001, facing south on July 25, 2022.

PHOTOGRAPH 7



Wetland IT 002 (PFO), facing north on July 25, 2022.

PHOTOGRAPH 8



Wetland IT 002 (PFO), facing south on July 25, 2022.



PHOTOGRAPH 9



Wetland IT 002 (PFO), facing east on July 25, 2022.

PHOTOGRAPH 10



Wetland IT 002 (PFO), facing west on July 25, 2022.

PHOTOGRAPH 11



Upland IT 002/003, facing north on July 25, 2022.

PHOTOGRAPH 12



Upland IT 002/003, facing south on July 25, 2022.

PHOTOGRAPH 13



Wetland IT 003 (PFO), facing north on July 25, 2022.

PHOTOGRAPH 14



Wetland IT 003 (PFO), facing south on July 25, 2022.

PHOTOGRAPH 15



Wetland IT 003 (PFO), facing east on July 25, 2022.

PHOTOGRAPH 16



Wetland IT 003 (PFO), facing west on July 25, 2022.

PHOTOGRAPH 17



Wetland IT 003 (PEM), facing north on July 25, 2022.

PHOTOGRAPH 18



Wetland IT 003 (PEM), facing south on July 25, 2022.

PHOTOGRAPH 19



Wetland IT 003 (PEM), facing east on July 25, 2022.

PHOTOGRAPH 20



Wetland IT 003 (PEM), facing west on July 25, 2022.

PHOTOGRAPH 21



Wetland IT 008 (PEM), facing north on September 14, 2022.

PHOTOGRAPH 22



Wetland IT 008 (PEM), facing south on September 14, 2022.

PHOTOGRAPH 23



Wetland IT 008 (PEM), facing east on September 14, 2022.

PHOTOGRAPH 24



Wetland IT 008 (PEM), facing west on September 14, 2022.



PHOTOGRAPH 25



Upland IT 008, facing north on September 14, 2022.

PHOTOGRAPH 26



Upland IT 008, facing south on September 14, 2022.

PHOTOGRAPH 27



Upland IT 008, facing east on September 14, 2022.

PHOTOGRAPH 28



Upland IT 008, facing west on September 14, 2022.

PHOTOGRAPH 29



Stream IT 001 (Intermittent), facing upstream on July 25, 2022.

PHOTOGRAPH 30



Stream IT 001 (Intermittent), facing downstream on July 25, 2022.

PHOTOGRAPH 31



Stream IT 001 (Intermittent), substrate on July 25, 2022.

PHOTOGRAPH 32



Stream IT 002 (Intermittent), facing upstream on October 27, 2022.

PHOTOGRAPH 33



Stream IT 002 (Intermittent), facing downstream on October 27, 2022.

PHOTOGRAPH 34



Stream IT 002 (Intermittent), substrate on October 27, 2022.

PHOTOGRAPH 35



Representative Developed, Cultivated Cropland, facing north on July 25, 2022.

PHOTOGRAPH 36



Representative Developed, Medium-Intensity land use, facing north on July 25, 2022.

PHOTOGRAPH 37



Representative Developed, Open-Space, facing west on July 25, 2022.

PHOTOGRAPH 38



Representative Old Field, facing north on July 25, 2022.

PHOTOGRAPH 39



Representative Scrub Shrub habitat, facing west on July 25, 2022.

PHOTOGRAPH 40



Representative Successional Hardwood Forest, facing north on July 25, 2022.



# APPENDIX

## F AGENCY COORDINATION



# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

**Office of Real Estate**  
*John Kessler, Chief*  
2045 Morse Road – Bldg. E-2  
Columbus, OH 43229  
Phone: (614) 265-6621  
Fax: (614) 267-4764

August 15, 2022

Brad Rolfes  
WSP USA  
Suite 2500  
312 Elm Street  
Cincinnati, OH 45202

**Re:** 22-0760; AEP Iron Triangle 138 kV Transmission Line Project

**Project:** The project proposes to rebuild approximately 3.3 miles of the Iron Triangle 138 kV transmission line.

**Location:** The proposed project is located in Washington Township, Hancock County, Ohio.

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

**Natural Heritage Database:** A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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

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

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

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

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

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

Federally Endangered

clubshell (*Pleurobema clava*)

rayed bean (*Villosa fabalis*)

State Endangered

purple lilliput (*Toxolasma lividum*)

State Threatened

pondhorn (*Unio merus tetralasmus*)

Salamander Mussel (*Simpsonaias ambigua*)

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

The project is within the range of the western banded killifish (*Fundulus diaphanus menona*), a state endangered fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 through July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

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

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

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

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew  
Environmental Services Administrator

Rolfes, Brad

---

From: Ohio, FW3 <ohio@fws.gov>  
Sent: Friday, August 5, 2022 9:13 AM  
To: Rolfes, Brad  
Cc: nathan.reardon@dnr.state.oh.us; Eileen.Wyza@dnr.ohio.gov  
Subject: AEP Iron Triangle 138 kV Transmission Line Project, Hancock and Seneca Counties, Ohio

Follow Up Flag: Flag for follow up  
Flag Status: Flagged



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



Project Code: 2022-0064649

Dear Mr. Rolfes,

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

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

*Seasonal Tree Clearing for Federally Listed Bat Species:* The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$  inches dbh only occur between November 15 and March 15. Seasonal clearing is recommended to avoid

adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <https://ecos.fws.gov/ecp/species/9045>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are known or assumed present. Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.

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

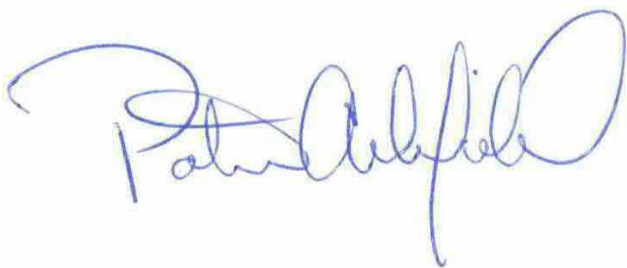
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio ([https://epa.ohio.gov/portals/47/facts/ohio\\_wetlands.pdf](https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf)).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

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

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

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

Sincerely,



Patrice Ashfield  
Field Office Supervisor

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