

# LETTER OF NOTIFICATION FOR WINDSOR JUNCTION- TILTONSVILLE 138 kV CONDUCTOR PROJECT



PUCO Case No. 20-1735-EL-BLN

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

Submitted by:  
Ohio Power Company

December 11, 2020

# LETTER OF NOTIFICATION FOR WINDSOR JUNCTION-TILTONSVILLE 138 KV CONDUCTOR PROJECT

## **LETTER OF NOTIFICATION Ohio Power Company, Inc. Windsor Junction-Tiltonsville 138 kV Conductor Project**

### **4906-6-05**

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

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

#### **B(1) Project Description**

**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 Windsor Junction-Tiltonsville 138 kilovolt (kV) Conductor Project (the “Project”) in the Village of Yorkville, the Village of Rayland, and Warren Township, Jefferson County, Ohio. The Project consists of the following components:

- Replacing conductor with larger conductor along the existing Windsor Junction-Tiltonsville line, from Tiltonsville Substation to existing Structure 16;
- Installing a new structure, Structure 16A, within the existing right-of-way (“ROW”) of the Windsor Junction-Tiltonsville 138-kV transmission line;
- String new conductor for approximately 3.8 miles along the open arm position of the existing structures supporting the Windsor Junction-Tiltonsville 138-kV transmission line from existing Structure 16 to proposed Structure 4. This work will 6-wire the existing Windsor Junction-Tiltonsville 138-kV line, allowing it to achieve higher operational ratings.

In association with this Project, the AEP Ohio Transmission Company, Inc. will file a separate application for the Windsor Extension (OH) 138-kV Transmission Line Project under separate cover (Case No. 20-1734-EL-BLN).

The Project will be constructed within the existing 100 foot-wide transmission line right-of-way (“ROW”). Supplementing additional easements may be required to accommodate the Project. The location of the Project is shown on Map 1 in Appendix A.

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The Project meets the requirements for a Letter of Notification (“LON”) because it is within the types of projects defined by Item (2) of *Appendix A* to O.A.C. 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:*

*(b) more than two miles*

The Project has been assigned PUCO Case No. 20-1735-EL-BLN.

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

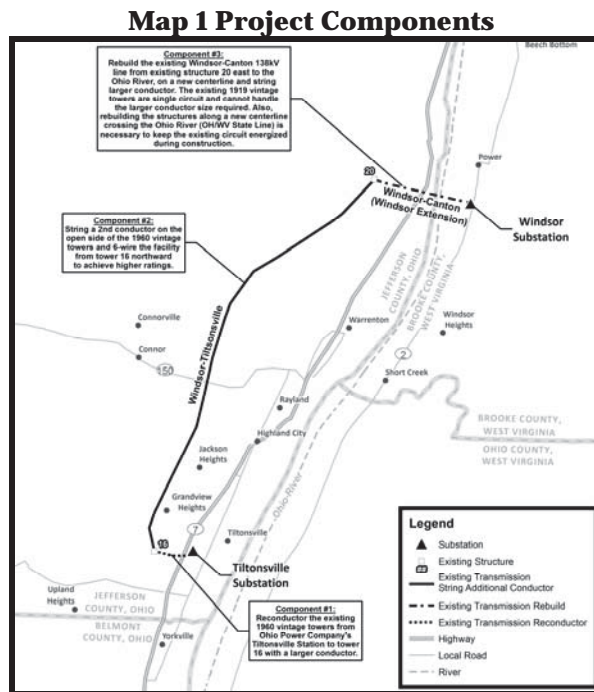
**If the proposed project is an electric power transmission line or natural gas transmission line, a statement explaining the need for the proposed facility.**

The Tiltonsville – Windsor 138kV Upgrade Project is a PJM Baseline reliability upgrade to address future thermal overload concerns. The Project was presented to PJM in 2014 and assigned a PJM identifier of b2555. The Project has been resubmitted to PJM to reflect updates to the scope of a portion of the overall project and to update cost estimates. The Project will mitigate a PJM baseline overload by increasing the rating on this circuit by performing the following upgrades:

- 1) Reconductor the existing 1960 vintage towers from Ohio Power Company’s Tiltonsville Station to tower 16 with a larger conductor,
- 2) String a 2nd conductor on the open side of the 1960 vintage towers and 6-wire the facility from tower 16 northward to achieve higher ratings; and
- 3) Rebuild the existing Windsor-Canton 138kV line from existing structure 20 east to the Ohio River, on a new centerline and string larger conductor. The existing 1919 vintage towers are single circuit and cannot handle the larger conductor size required. Also, rebuilding the structures along a new centerline crossing the Ohio River is necessary to keep the existing circuit energized during construction (see Map 1 below).

A small scope of work in West Virginia will also be required before connecting to FirstEnergy’s Windsor station. Without this Project, the Tiltonsville-Windsor 138kV circuit may overload, potentially requiring the Company to mitigate by load shedding. Overall, this transmission line upgrade was selected as being the most cost effective solution by PJM. The Project was not included in the Company’s Long Term Forecast Report because a new transmission line asset is not being created.

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### B(3) Project Location

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

Map 1 in Appendix A shows the location of the Project in relation to existing transmission facilities on a United States Geological Survey 1:24,000 topographic quadrangle (Tiltonsville (1986)). Map 2 in Appendix A identifies the Project components on March 2020 aerial imagery (Esri World Imagery, Maxar).

### 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.**

The Project is located within existing ROW and will use existing structures with one exception, Structure 16A, which is a new structure that will be located within existing ROW. The Project route is short, efficient, direct, and uses existing ROW to minimize viewshed impacts. Abandoning the existing ROW for a new greenfield route is neither practical nor necessary in this instance. Therefore, the Project represents the most appropriate solution for meeting the baseline needs identified by PJM.

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### **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 informs affected property owners and tenants about its projects through several different mediums. Within seven (7) days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with requirements of OAC Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants, contiguous owners and other landowners the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with requirements of OAC Section 4906-6-08(B). The Company maintains a website (<http://aeptransmission.com/ohio/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library in each political subdivision for this Project. The Company retains right-of-way land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project.

### **B(6) Construction Schedule**

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

The Company anticipates construction of the Project to begin in March 2021 and be in-service November 2021.

### **B(7) Area Map**

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

Map 1 included in Appendix A identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map (Tiltonsville (1986)). Map 2 in Appendix A is an aerial map of the Project area (Esri World Imagery, Maxar).

To visit the Project from Columbus, take I-70 E towards Wheeling, West Virginia. Continue on I-70 for approximately 117 miles. Taking exit 225 for US-250 W/OH-7 and continue 0.2-mile. Turn left onto Marion Street then take an immediate right onto Main Street and continue 0.3-mile. Turn left onto US-250 W and continue 0.3-mile. Merge onto OH-7 N and continue 1.8 miles. Continue onto OH-7 N (Ohio Scenic Byway) for 4.1 miles then take the Public Rd. exit toward Yorkville. Turn right onto Public Rd. and take the second left onto Martha St. and continue 0.4-mile. Turn left on Medilla Ave., which dead ends at the Tiltonsville Substation. The coordinates of Tiltonsville Substation are latitude 40.165603, longitude -80.704955.

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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 will be constructed within existing ROW, however, additional supplemental easements may be necessary. Appendix C provides a table of property parcel numbers with an indication as to whether the easement/option necessary to construct and operate the facility has been obtained.

### **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 Windsor Junction-Tiltonsville 138-kV Transmission Line is planned to include:

|                  |   |
|------------------|---|
| Voltage:         | 138kV   |
| Conductors:      | Single Circuit 6 wired 556.5 kCM DOVE ACSR 26/7   |
| Static Wire:     | (1) 96 FIBER OPGW .646"   |
| Insulators:      | CERAMIC on new side and CERMAIC on old side   |
| ROW Width:       | Towers 1-2, 7-6, 11-12, 13-16: 100'<br>Tower 13-12: 110',<br>Towers 11-10 and 10-9: 105',<br>Tower 9-8 and 8-7: 170',<br>Tower 6-5: 160',<br>Towers 5-4 and 4-3: 115',<br>Tower 3-2: 140',<br>Tower 1 to Pole/Structure 4: 185' |
| Structure Types: | (4) Dead End towers,<br>(4) Suspension Towers,<br>(7) Running Angle Towers, and<br>(1) New Single Pole Dead End Str 16a   |

**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. The discussion shall include:**

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

#### **i) Calculated Electric and Magnetic Field Levels**

Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB

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

EMF levels were computed one meter above ground under the line and at the ROW edges (50/50 feet, left/right, of centerline).

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

| Tiltonsville – Windsor 138 kV Line         |   |                      |                         |                        |                      |
|--|---|----------------------|-------------------------|------------------------|----------------------|
| Condition                                  | Tiltonsville to Windsor 138 kV Circuit Load (A) | Phasing Arrangements | Ground Clearance (feet) | Electric Field (kV/m)* | Magnetic Field (mG)* |
| (1) Normal Max. Loading <sup>^</sup>       | 571   | A-B-C                | 26                      | 0.2/2.6/0.2            | 18.19/61.99/24.32    |
| (2) Emergency Line Loading <sup>^^</sup>   | 775   | A-B-C                | 19.5                    | 0.2/2.3/0.2            | 32.47/69.95/32       |
| (3) Winter Conductor Rating <sup>^^^</sup> | 2160  | A-B-C                | 26                      | 0.2/2.6/0.2            | 137.61/469.03/183.97 |

\*EMF levels (left ROW edge/maximum/right ROW edge) computed one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and 1.0 P.U. Voltages. ROW width is 50 feet (left) and 50 feet (right) of centerline, respectively.

<sup>^</sup>Peak line flow expected with all system facilities in service.

<sup>^^</sup>Maximum flow during a critical system contingency

<sup>^^^</sup>Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions.

For power-frequency EMF, IEEE Standard C95.6TM-2002 recommends the following limits:

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

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

## ii) Design Alternatives

Work associated with the Project will occur within the Company's existing ROW.

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

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

The estimated capital cost of the Project, comprised of applicable tangible and capital costs, is approximately \$5,900,000 (Class 4). 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) 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 in the Village of Yorkville, the Village of Rayland, and Warren Township, Jefferson County, Ohio. Land use in the Project area consists of the existing transmission line ROW traversing wooded slopes and valleys, and areas of open/agricultural land on the broad ridgetops. Local roads bordered by scattered residences are located along the broad ridgetops and valleys. The Project is located in the vicinity of several rural residences, two residences are located within 100 feet of the Project, the closest of which, is approximately 35 feet south of the existing transmission line.

The Project crosses the Ohio River Scenic Byway (State Route 7), southwest of Tiltonsville Substation. Changes to the visual aesthetics of the byway are not anticipated, as the Project proposes to replace existing conductor in the vicinity of the Ohio River Scenic Byway crossing.

Wetlands and streams were identified within the Project area, but no impacts are anticipated as these aquatic resources are anticipated to be spanned. Additionally, the Project is anticipated to span Short Creek and its designated 100-year floodplain and floodway at County Route 15 and Narrows Road (Township Road 1). Construction activities are not expected to impact these resources.

A local recreational park, Memorial Park, is located approximately 40 feet east of the Tiltonsville Substation and across Walter Street. No impacts to Memorial Park are anticipated by 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.**

According to the Jefferson County Auditor's Office, as of September 10, 2020, the Project crosses three registered Agricultural District parcels (41-02269-000, 41-02269-001, 41-00860-000). The existing ROW crosses 5.9 acres of Agricultural District land. Additional impacts to agricultural uses beyond the existing ROW are not anticipated. Additionally, the Project does not cross active agricultural row crop land (Appendix A, Map 2).

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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 archeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.**

The Company's consultant completed an archaeological and architectural resource literature review within a 1,000-foot radius of the Project. The Ohio State Historic Preservation Office ("SHPO") topographic maps identified one archaeological resource, a mound feature (33JE0003), located more than 500 feet south of the southern terminus of the Project. Additionally, the mound is mapped at a location currently used as athletic fields. The Ohio History Inventory ("OHI") listed two structures, the John Frier House (JEF00902-16), located approximately 450 feet southwest of the Township Road 16 crossing, and the Wheeling Pittsburg Steel Corporation Yorkville Plant (JEF00694-16), located approximately 950 feet east of the Tiltonsville Station (STR 18). Both of these previously recorded resources were disclosed in the archaeological and history/architectural resource reports that were coordinated with the Ohio Historic Preservation Office.

The Company's consultant completed Phase I archaeological and historical/architectural field work and reporting for the Project. These reports were submitted to and reviewed by the SHPO. No previously recorded or new archaeological sites were identified, SHPO agreed that no further archaeological survey is necessary. Additionally, due to the nature of the Project as a rebuild and that the visibility of the line should not be increased, the SHPO concurred with the consultant's recommendation that no further history/architectural investigations are necessary.

Correspondence with the SHPO is provided in 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 ("NOI") will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharge under NPDES General Permit for Discharges of Storm Water Associated with Construction Activity OHC000005, and the Company will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion and sediment to Project surface water quality.

The Company's consultant completed a wetland and stream identification field review for the Project (Appendix D). Six perennial, eight intermittent, and four ephemeral streams were identified within the study area. One palustrine forested ("PFO") wetland and seven palustrine emergent ("PEM") wetlands were also identified in the study area. These streams and wetlands will either be aerially spanned by the Project or avoided all together. Similarly, access roads are planned to avoid stream and wetland resources, and line stringing will be completed

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via helicopter. Therefore, impacts to aquatic resources are not anticipated and Clean Water Act Section 401/404 permits will not be needed.

The Project crosses a Federal Emergency Management Agency ("FEMA") 100-year floodplain area and Floodway associated with Short Creek (FEMA, Flood Insurance Rate Map, Panel 362D, Map Number 39081C0362D, Effective Date April 5, 2006; Panel 354D, Map Number 39081C0354D, Effective Date April 5, 2006; and Panel 358D, Map Number 39081C0358D, Effective Date April 5, 2006). However, the Project will cross the FEMA floodplain and floodway aerially, utilizing existing structures which are located outside the FEMA floodplain; therefore, no floodplain permitting is anticipated for the Project. These resources are shown on Figure 2 in Appendix D.

Coordination with the Federal Aviation Administration ("FAA") is anticipated based on the height of the shield wire above ground level and proximity to the Wheeling-Ohio County Airport. The Wheeling-Ohio County Airport is located in West Virginia, approximately 2-miles east of the Project. Coordination efforts with the FAA will be provided to OPSB once complete.

Additionally, the Project will require a stormwater permit from Jefferson County.

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

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

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

A coordination letter was submitted to the United States Fish and Wildlife Service ("USFWS") Ohio Ecological Services Field Office on August 3, 2020 seeking technical assistance on the Project for potential impacts to threatened or endangered species. In a response email dated August 17, 2020, the USFWS noted the potential for the federally listed Indiana bat and northern long-eared bat to occur within the Project area. The USFWS recommended that if tree removal was required for the Project, it be limited to the time between October 1 and March 31 to avoid the potential for take of the Indiana bat and northern long-eared bat. The Company is planning to complete tree clearing during the recommended timeframe but should implementation of the seasonal tree cutting recommendation not be feasible, the USFWS will be contacted for further guidance. The USFWS also stated that due to the Project type, size, and location, no other impacts to federally endangered, threatened, or proposed species or designated critical habitat are anticipated. Based on the USFWS Information for Planning and Consultation online tool, the Running Buffalo Clover was listed as being present in Jefferson County, however the review of the project area by the USFWS regional field office did not indicate Running Buffalo Clover as a concern in the project area therefore, the Project will not impact this species.

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A coordination letter was submitted to the Ohio Department of Natural Resources (“ODNR”) Division of Wildlife (“DOW”) on August 3, 2020 seeking technical assistance for potential impacts to threatened or endangered species in the vicinity of the Project area. In a response received on October 8, 2020, ODNR-DOW noted the potential for the Indiana bat (state endangered and federally endangered), northern long-eared bat (state endangered and federally threatened) and tri-colored bat (state endangered species) to occur within the Project area. ODNR-DOW recommended that if tree removal was required for the Project, it be limited to the time between October 1 and March 31 to avoid potential for take of these state-listed species. ODNR-DOW also recommended conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH  $\geq 20$  if possible. The Company is planning to complete tree clearing during the recommended timeframe but should implementation of the seasonal tree cutting recommendation not be feasible, the ODNR will be contacted for further guidance.

ODNR-DOW recommended that the Company conduct a desktop review of the Project area to identify portals and potential hibernacula for state and federally-listed bat species. The Company’s consultant completed a desktop review on November 18, 2020. According to the ODNR’s Ohio Mine data, there are thirty-five portals and two mines within a 0.25-mile radius of the Project area, however impacts to these elements are not anticipated due to the nature of the Project.

ODNR-DOW also noted the potential for the Northern Harrier to be present in the Project area. Critical habitat for the Northern Harrier will not be affected by the Project as there are no access roads planned through potential habitat areas and the Project will be constructed using helicopters. The Project will have a minimal ground footprint. Therefore the Project is not likely to impact this species. ODNR-DOW noted the potential for two mussel species, one amphibian species, and eight fish species to be present in the Project area, however impacts to these species are not anticipated as no in-water work is proposed.

Coordination letters from USFWS are provided in Appendix C.

### **B(10)(f) Areas of Ecological Concern**

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

Coordination letters were submitted to the USFWS and ODNR requesting a review of the Project and identification of areas of ecological concern. The USFWS response email dated August 17, 2020 (Appendix C), indicated there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the Project. The ODNR response received on October 8, 2020 (Appendix C) indicated that according to the Ohio Natural Heritage Database (ONHD), no known unique ecological sites, geologic features, scenic rivers, state wildlife areas, state natural preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas are located within the Project area. The ONHD has records of five fish species and one mussel species within a one-mile radius of the Project area. However, impacts to these species are not anticipated as no in-water work is proposed.

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A review the National Conservation Easement Database and the USACE Regulatory In-lieu Fee and Bank Information Tracking System did not identify mapped easements or mitigation sites in the Project area.

The Project crosses the FEMA 100-year floodplain area and floodway associated with Short Creek (FEMA, Flood Insurance Rate Map, Panel 362D, Map Number 39081C0362D, Effective Date April 5, 2006; Panel 354D, Map Number 39081C0354D, Effective Date April 5, 2006; and Panel 358D, Map Number 39081C0358D, Effective Date April 5, 2006). However, the Project will cross the FEMA floodplain and floodway aerially utilizing the existing structures which are located outside the FEMA floodplain, therefore no floodplain permitting is anticipated for the Project. These resources are shown on Figure 2 in Appendix D.

Wetland delineation and stream identification field reviews were completed within the existing ROW by the Company's consultant in April and November 2020. The results of the survey are presented in the Ecological Survey Report included in Appendix D. In general, the habitat encountered within the ROW consisted of maintained transmission line ROW bordered by mixed deciduous forest, open fields, residential areas and PEM/PFO wetlands. Six perennial, eight intermittent, and four ephemeral streams were identified within the study area. One PFO wetland and seven PEM wetlands were also identified in the study area. These streams and wetlands will either be aerially spanned by the Project or avoided all together. Similarly, access roads are planned to cross streams and wetlands using an air bridge if an alternative around the aquatic resource is not feasible. Therefore, no impacts to these resources are anticipate.

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

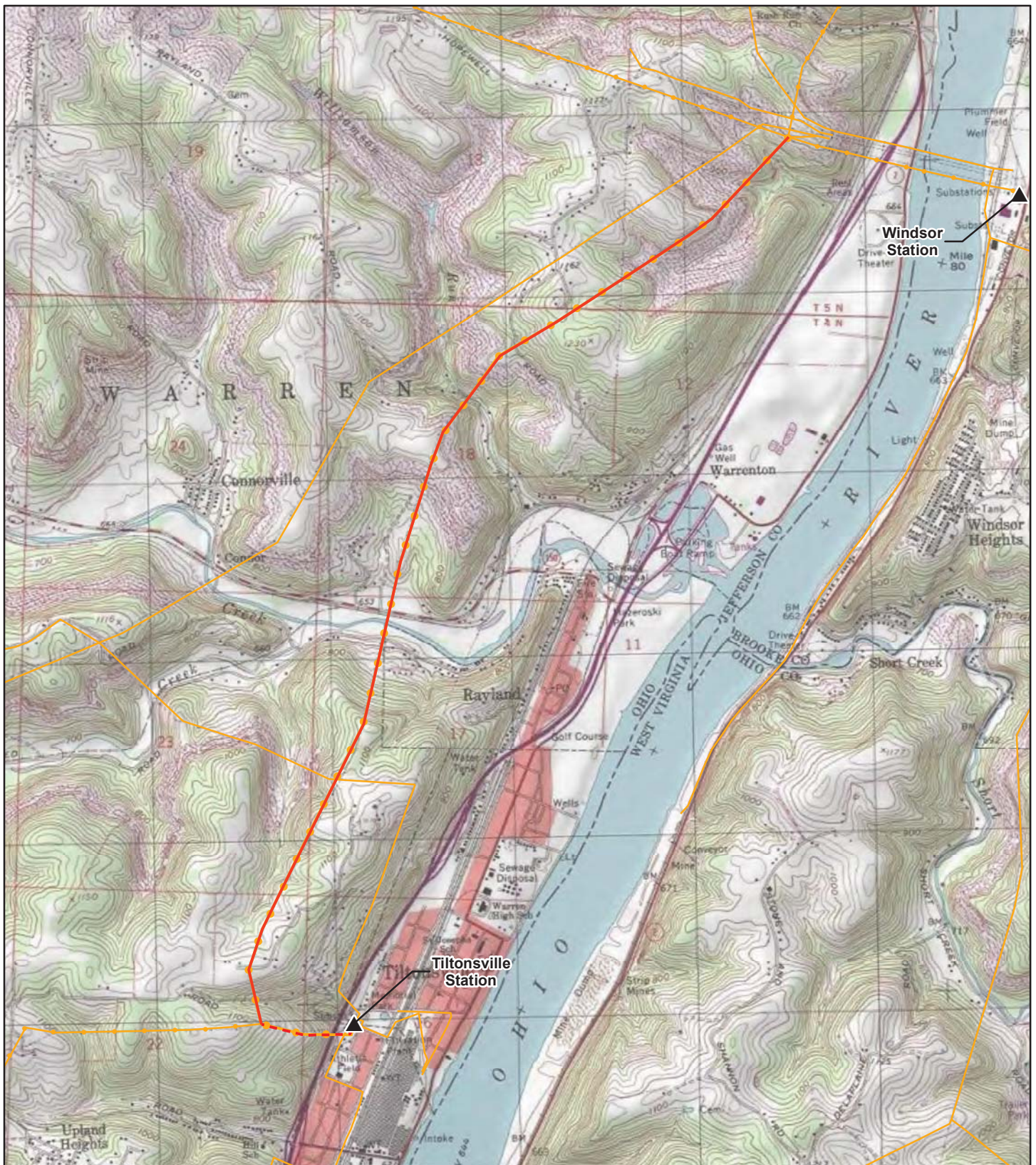
**Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.**

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

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**APPENDIX A**

Project Maps



#### Legend

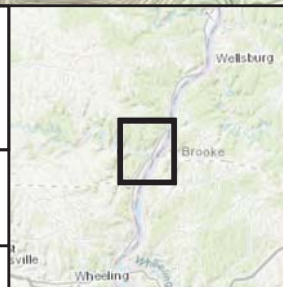
- ▲ Existing Station
- Existing Transmission
- String Additional Conductor
- - - Existing Transmission Reconductor
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line

USGS Topographic, Esri ArcGIS  
Online, Accessed 12/2020.

NAD 1983 State Plane  
Ohio North Feet



December 04, 2020

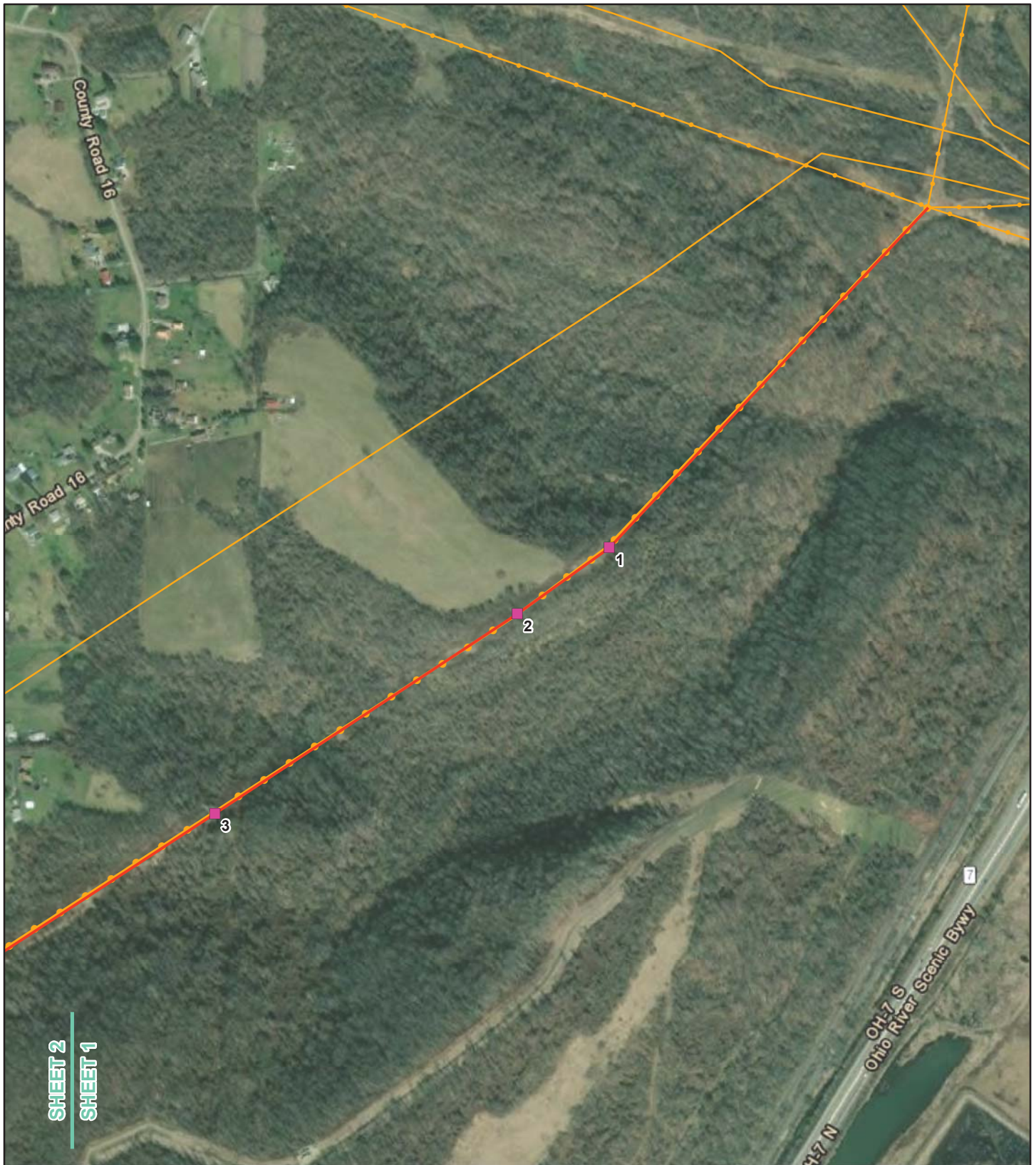


#### Map 1 Project Location Map



Windsor Junction-Tiltonville  
138 kV Ratings Increase Project

0 2,500  
Feet



#### Legend

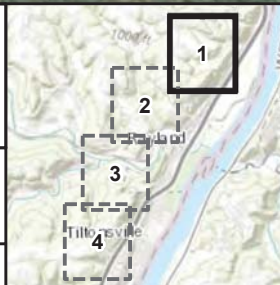
- ▲ Existing Station
- Proposed Structure
- Existing Structure
- Existing Transmission String Additional Conductor
- - - Existing Transmission Reconductor
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line

Esri World Imagery, Maxar, 2020,  
ArcGIS Online, Accessed 12/2020.  
Transportation, Esri ArcGIS Online,  
Accessed 12/2020.

NAD 1983 State Plane  
Ohio North Feet



December 04, 2020

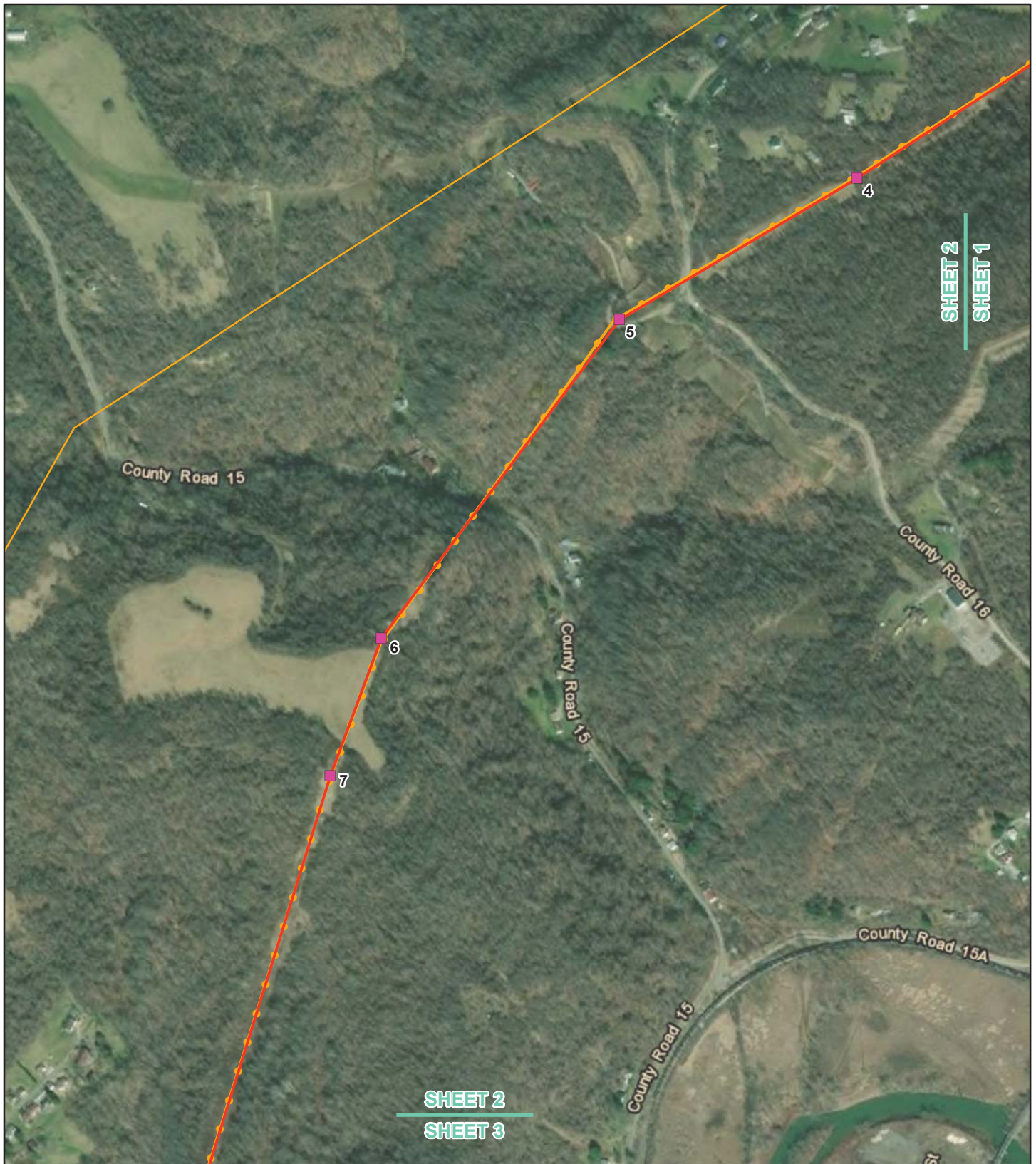


#### Map 2 Aerial Map Sheet 1 of 4



Windsor Junction-Tiltonsville  
138 kV Ratings Increase Project





#### Legend

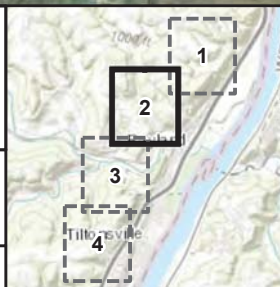
- ▲ Existing Station
- Proposed Structure
- Existing Structure
- Existing Transmission
- String Additional Conductor
- - - Existing Transmission Reconductor
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line

Esri World Imagery, Maxar, 2020,  
ArcGIS Online, Accessed 12/2020.  
Transportation, Esri ArcGIS Online,  
Accessed 12/2020.

NAD 1983 State Plane  
Ohio North Feet



December 04, 2020



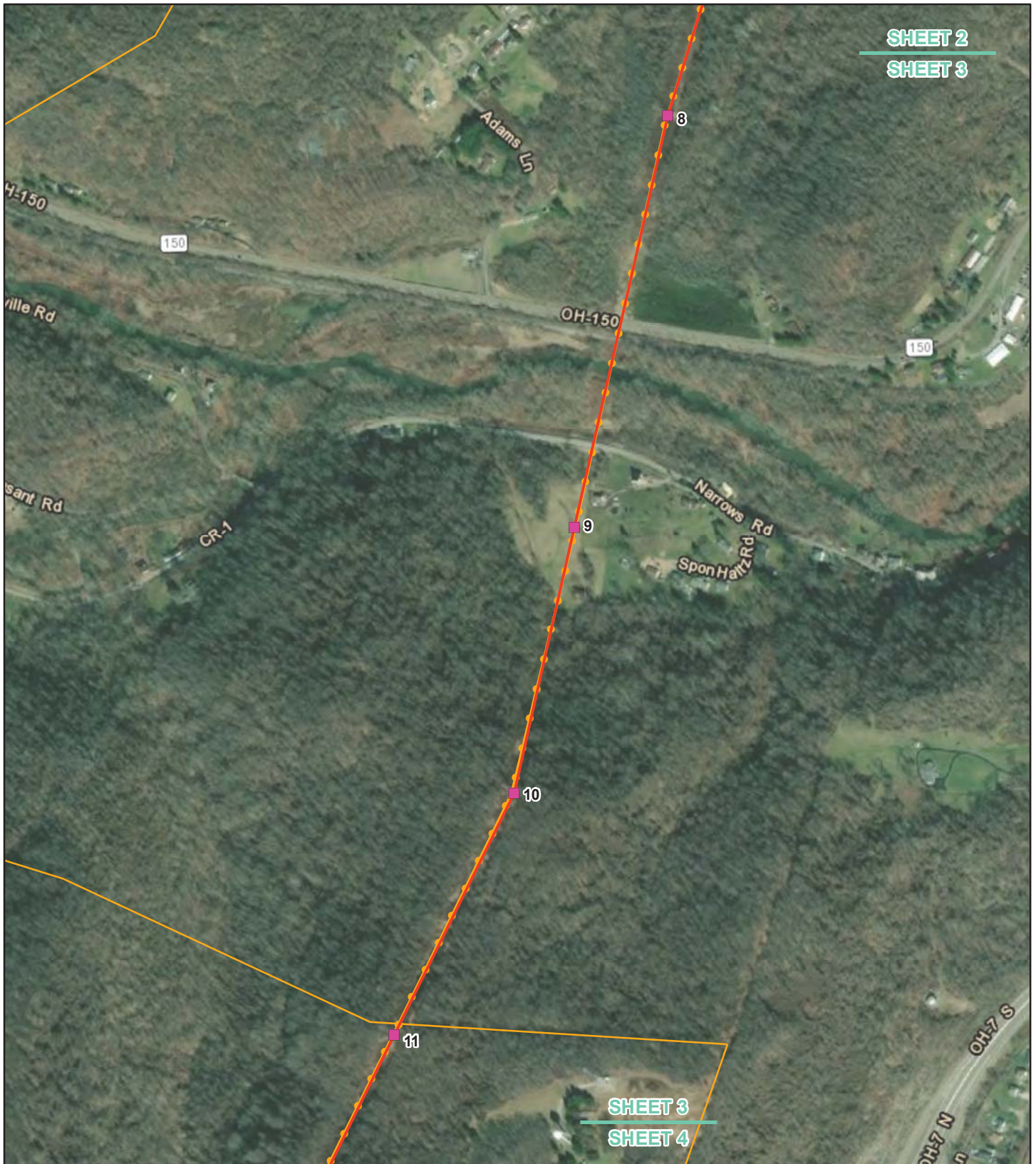
#### Map 2 Aerial Map Sheet 2 of 4



Windsor Junction-Tiltonville  
138 kV Ratings Increase Project



SHEET 2  
SHEET 3



#### Legend

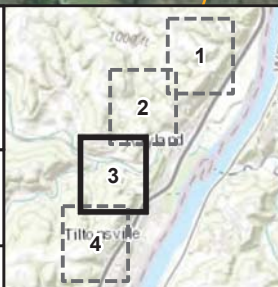
- ▲ Existing Station
- Proposed Structure
- Existing Structure
- Existing Transmission
- String Additional Conductor
- - - Existing Transmission Reconductor
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line

Esri World Imagery, Maxar, 2020,  
ArcGIS Online, Accessed 12/2020.  
Transportation, Esri ArcGIS Online,  
Accessed 12/2020.

NAD 1983 State Plane  
Ohio North Feet



December 04, 2020



#### Map 2 Aerial Map Sheet 3 of 4

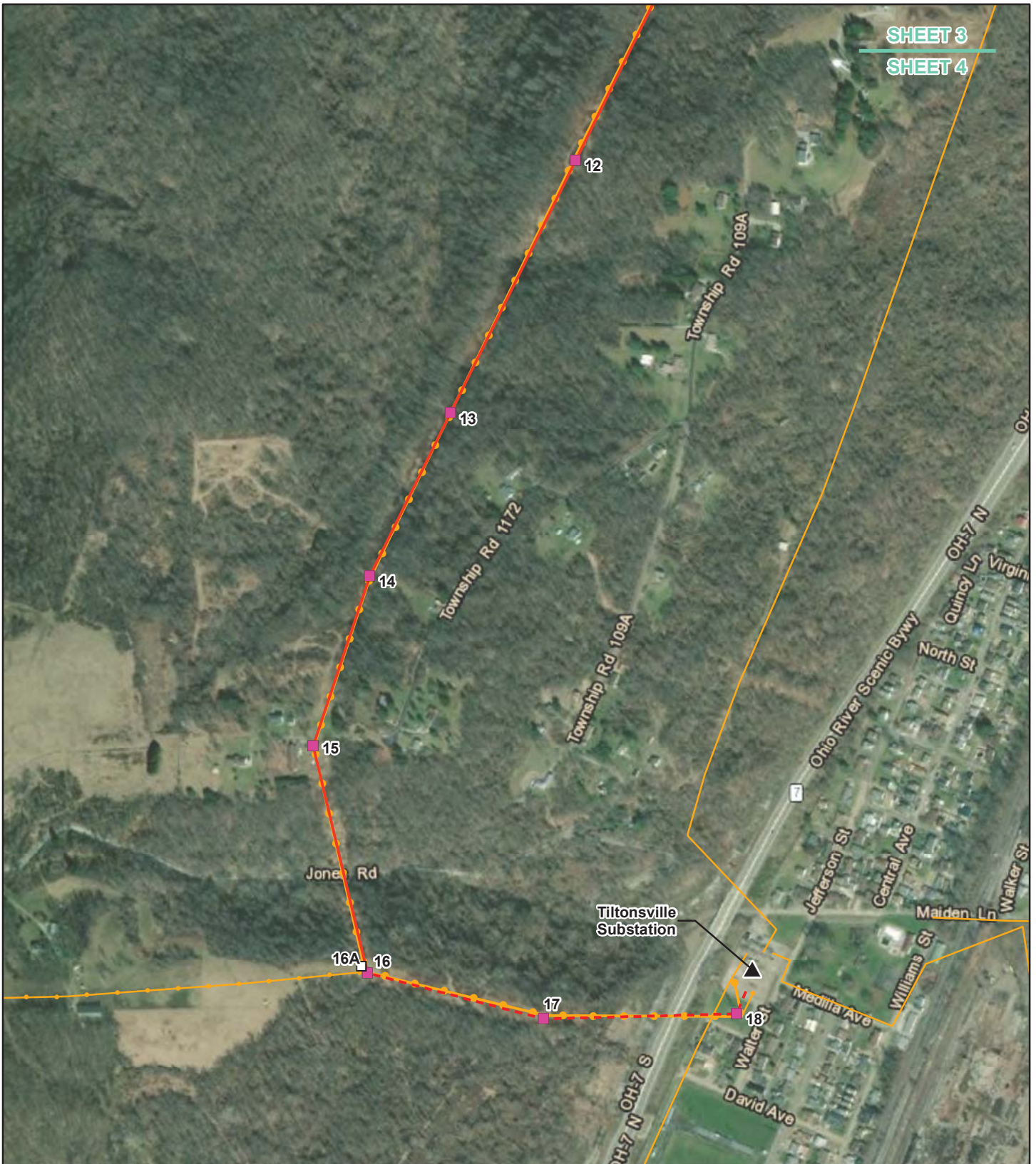


Windsor Junction-Tiltonville  
138 kV Ratings Increase Project



SHEET 3

SHEET 4



#### Legend

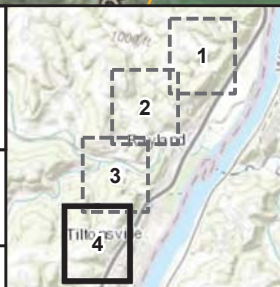
- ▲ Existing Station
- Proposed Structure
- Existing Structure
- Existing Transmission
- String Additional Conductor
- - - Existing Transmission Reconductor
- Existing 69-kV Transmission Line
- Existing 138-kV Transmission Line

Esri World Imagery, Maxar, 2020,  
ArcGIS Online, Accessed 12/2020.  
Transportation, Esri ArcGIS Online,  
Accessed 12/2020.

NAD 1983 State Plane  
Ohio North Feet



December 04, 2020



#### Map 2 Aerial Map Sheet 4 of 4



Windsor Junction-Tiltonsville  
138 kV Ratings Increase Project



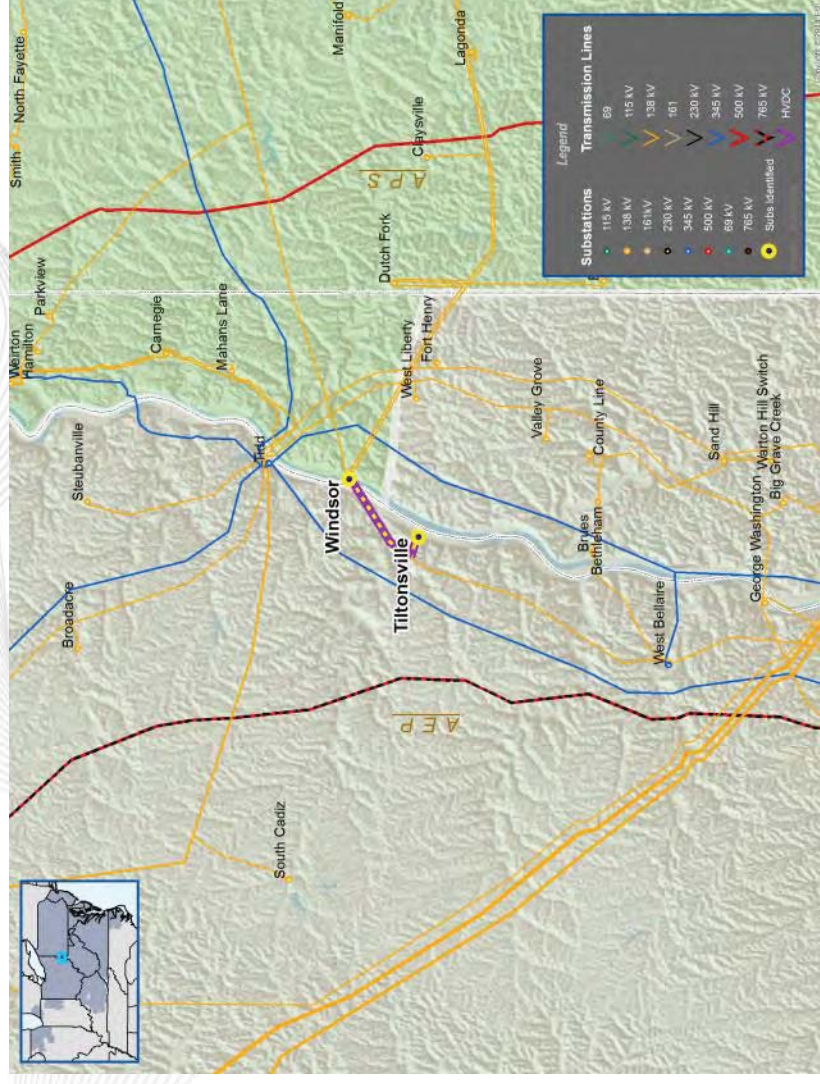
**LETTER OF NOTIFICATION FOR WINDSOR JUNCTION-TILTONSVILLE 138 KV  
CONDUCTOR PROJECT**

**APPENDIX B**

PJM Interconnection Submittal



# AEP/APS Transmission Zone



- **Baseline (FG# 133, 204, 205) and Generator Deliverability /Common Mode Outage**
- **2014 RTEP Proposal Window #1 Violation (FG# 232, 234, 799, 1042)**

- The Tilton – Windsor 138kV is overloaded for system normal and multiple contingencies.
- Recommended Solution: Reconductor 0.5 miles of Tiltonsville-Windsor 138 kV and string the vacant side of the 4.5 mile section using 556 ACSR in a six wire configuration. (B2555) (P2014\_1-2A)
- Estimated Project Cost: \$2.0M
- Required IS Date: 6/1/2019

**LETTER OF NOTIFICATION FOR WINDSOR JUNCTION-TILTONSVILLE 138 KV  
CONDUCTOR PROJECT**

**APPENDIX C**

Property Owner List

| <b>Property Parcel Number</b> | <b>Easement Agreement/Option Obtained (Yes/No)*</b> |
|-------------------------------|---|
| 41-01605-000                  | Yes   |
| 41-00388-000                  | Yes   |
| 41-05046-000                  | Yes   |
| 41-05045-000                  | Yes   |
| 41-00019-000                  | Yes   |
| 41-00022-000                  | Yes   |
| 41-00504-000                  | Yes   |
| 41-00806-000                  | Yes   |
| 42-00237-000                  | No  |
| 41-00806-003                  | Yes   |
| 41-00806-001                  | Yes   |
| 41-00806-002                  | Yes   |
| 41-01706-000                  | Yes   |
| 42-0000-000                   | No  |
| 41-02730-000                  | Yes   |
| 41-00860-000                  | Yes   |
| 41-01185-000                  | Yes   |
| 41-01183-000                  | Yes   |
| 41-00241-000                  | Yes   |
| 41-02800-000                  | Yes   |
| 42-00292-000                  | Yes   |
| 41-00698-000                  | Yes   |
| 41-01587-000                  | Yes   |
| 41-01587-001                  | Yes   |
| 41-00734-000                  | Yes   |
| 41-00734-003                  | Yes   |
| 41-01976-000                  | Yes   |
| 41-00269-000                  | Yes   |
| 41-00664-000                  | Yes   |
| 41-00362-000                  | Yes   |
| 41-02559-000                  | Yes   |
| 41-00776-000                  | Yes   |
| 41-02281-004                  | Yes   |
| 41-02281-000                  | Yes   |
| 41-02281-002                  | Yes   |
| 41-01029-000                  | Yes   |
| 41-02269-001                  | Yes   |

\*The Company may supplement its existing rights under all blanket and defined easements identified above.

**LETTER OF NOTIFICATION FOR WINDSOR JUNCTION-TILTONSVILLE 138 KV  
CONDUCTOR PROJECT**

**APPENDIX D**

Agency Correspondence



# 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

October 8, 2020

Kristen Vonderwish  
GAI Consultants  
6000 Town Center Blvd., Suite 300  
Canonsburg, PA 15317

**Re:** 20-789; Tiltonsville - Windsor 138 kV Ratings Increase Project

**Project:** The proposed project involves reconductoring the 0.5-mile single-circuit section and to string the vacant side of the 4.5-mile section of the Tiltonsville-Windsor 138 kV line in a six-wired configuration.

**Location:** The proposed project is located in Warren Township, Jefferson County, Ohio.

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

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

Tippecanoe darter (*Etheostoma Tippecanoe*), T  
Threehorn wartyback (*Obliquaria reflexa*), T  
Channel darter (*Percina copelandi*), T  
River darter (*Percina shumardi*), T  
Paddlefish (*Polyodon spathula*), T  
Longnose dace (*Rhinichthys cataractae*), SC

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

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

rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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

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

The project is within the vicinity of records for 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, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. Presence of listed bats has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. 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. However, limited summer tree cutting may be acceptable after further consultation with the DOW (contact Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us)).

In addition, 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 bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS “Range-wide Indiana Bat Survey Guidelines.” If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) 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 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:

State Threatened

black sandshell (*Ligumia recta*)

threehorn wartyback (*Obliquaria reflexa*)

This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

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

State Endangered

goldeye (*Hiodon alosoides*)

Ohio lamprey (*Ichthyomyzon bdellium*)

State Threatened

American eel (*Anguilla rostrata*)

channel darter (*Percina copelandi*)

paddlefish (*Polyodon spathula*)

river darter (*Percina shumardi*)

Tippecanoe darter (*Etheostoma tippecanoe*)

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

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, 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 May 15 to August 1. 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 U.S. Fish & Wildlife Service.

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

[http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\\_8\\_16.pdf](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

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

Mike Pettegrew  
Environmental Services Administrator (Acting)



In reply, refer to  
2020-JEF-48403

June 11, 2020

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

**RE: Tiltonsville-Windsor 138kV Rebuild Project, Warren Township, Jefferson County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received on May 13, 2020 regarding the proposed Tiltonsville-Windsor 138kV Rebuild Project, Warren Township, Jefferson 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 Tiltonsville-Windsor 138kV Rebuild Project in Warren Township, Jefferson County, Ohio* by Weller & Associates, Inc. (2020).

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

The following comments pertain to the *Phase I History/Architecture Survey Results for the Tiltonsville-Windsor Line Rebuild Project in Warren Township, Jefferson, Ohio, Brooke County, West Virginia* by Kramb Consulting, LLC (2020).

A literature review and field survey were completed as part of the investigations. 111 properties fifty years of age or older were identified within the project area and/or 1,000' study area that may have a direct line of sight to the project. Due to the nature of the project as a rebuild, it is Weller's recommendation that no further architectural investigations are necessary as the visibility of the existing transmission line should not increase. Our office agrees that no further architectural investigations are necessary.

Based on the information provided, we agree that the project as proposed will have no effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at [khorrocks@ohiohistory.org](mailto:khorrocks@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: 1084143, 1084144

**From:** Ohio, FW3 <ohio@fws.gov>  
**Sent:** Monday, August 17, 2020 10:19 AM  
**To:** Kristen Vonderwish; Joshua Noble  
**Cc:** nathan.reardon@dnr.state.oh.us; Parsons, Kate  
**Subject:** AEP Tiltonsville - Windsor 138kV Ratings Increase Project, Jefferson County

## EXTERNAL E-MAIL MESSAGE



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



TAILS# 03E15000-2020-TA-2047

Dear Ms. Vonderwish,

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are

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

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

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus 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,

A handwritten signature in blue ink, appearing to read "Patrice M. Ashfield". The signature is fluid and cursive, with a large initial "P" and a long, sweeping underline.

Patrice M. Ashfield  
Field Office Supervisor

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

**LETTER OF NOTIFICATION FOR WINDSOR JUNCTION-TILTONSVILLE 138 KV  
CONDUCTOR PROJECT**

**APPENDIX E**

Ecological Resources Inventory Report

# Ecological Survey Report

AEP Ohio Transmission Company  
Tiltonsville – Windsor 138 kV Ratings Increase Project  
Jefferson County, Ohio

GAI Project Number: C170352.92, Task 001

August 2020



Prepared by: GAI Consultants, Inc.  
Canton Office  
3720 Dressler Road Northwest  
Canton, Ohio 44718

Prepared for: American Electric Power Service Corporation  
1 Riverside Place  
22<sup>nd</sup> Floor  
Columbus, Ohio 43215-2373

# Ecological Survey Report

AEP Ohio Transmission Company  
Tiltonsville – Windsor 138 kV Ratings Increase Project  
Jefferson County, Ohio

GAI Project Number: C170352.92, Task 001

August 2020

Prepared for:  
American Electric Power Service Corporation  
1 Riverside Place  
22nd Floor  
Columbus, Ohio 43215-2373

Prepared by:  
GAI Consultants, Inc.  
Canton Office  
3720 Dressler Road Northwest  
Canton, Ohio 44718

Report Authors:

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Kristen L. Vonderwish  
Project Environmental Specialist

---

Joshua J. Noble, MS  
Senior Environmental Manager

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## 1.0 Introduction

GAI Consultants, Inc. (GAI), on behalf of American Electric Power Ohio Transmission Company (AEP), completed an ecological survey for the Tiltonsville – Windsor 138 Kilovolt (kV) Ratings Increase Project (Project) located in Jefferson County, Ohio (OH). The proposed Project is approximately 5 miles, with 4.5 miles constructed as a double circuit tower-line with only one side strung. The remaining 0.5 miles is constructed as a single circuit. AEP is proposing to reconductor the 0.5-mile single-circuit section and to string the vacant side of the 4.5-mile section in a six-wired configuration.

Ecological surveys were conducted on April 21 through April 24, 2020. The Project study area consisted of a 100-foot-wide corridor centered along the existing transmission line, as shown in Figure 1.

The Project study area is located within the Glenss Run - Ohio River (USGS HUC #050301061204), Little Short Creek (USGS HUC #050301060206), Dry Fork – Short Creek (USGS HUC #050301060207), Salt Run – Ohio River (USGS HUC #050301061202) watersheds.

This report details the results of the ecological surveys regarding the existence of aquatic resources within the Project area (Figure 2). The United States Army Corps of Engineers (USACE) Wetland Determination Data Forms are provided in Appendix B. Ohio Environmental Protection Agency (OEPA) Primary Headwater Habitat Evaluation (HHEI) Data Forms are provided in Appendix C and Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms are provided in Appendix D.

## 2.0 Methods

### 2.1 Wetlands

The 1987 USACE *Corps of Engineers Wetlands Delineation Manual* (Wetlands Delineation Manual) (USACE, 1987) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region, Version 2.0* (Regional Supplement) (USACE, 2012) describe the methods used to identify and delineate wetlands that fall under the jurisdiction of the USACE. This approach recognizes the three (3) parameters of wetland hydrology, hydrophytic vegetation, and hydric soils to identify and delineate wetland boundaries. In accordance with the Wetlands Delineation Manual and Regional Supplement, GAI completed preliminary data gathering and onsite inspections.

#### 2.1.1 Preliminary Data Gathering

The preliminary data gathering is used to compile and review information that may be helpful in identifying wetlands and/or areas that warrant further inspection during the investigation. The preliminary data gathering includes a review of the following:

- ▶ USGS 7.5-minute topographic mapping for Tiltonsville (1986), OH (Figure 1);
- ▶ United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping (USFWS, 2017) (Figure 2);
- ▶ Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2015) (Figure 2); and
- ▶ United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS, 2017) soil mapping (Figure 2).

Topographic mapping is used to identify mapped streams and the overall shape of the landscape in the Project area to determine potential locations for wetlands, such as floodplains and depressions. NWI mapping is used to determine locations where probable wetlands are

located based on infrared photography. Soil mapping is reviewed to determine the location and extent of mapped hydric soils that have a high probability of containing wetlands.

### 2.1.2 Onsite Inspection

The methodology described in the Regional Supplement identifies areas meeting the definition of a wetland by evaluating three parameters: hydrology, vegetation, and soil. During the on-site inspection, GAI staff traversed the Project study area on foot to determine if any indicators of wetlands were present. When indicators of wetlands are observed, an observation point is established, and a Wetland Determination Data Form (Data Form) is completed to determine if all three wetland indicators are present.

The presence of wetland hydrology is determined by examining the observation point for primary and secondary indicators of wetland hydrology. The presence of any primary indicator signifies the presence of wetland hydrology, or the presence of two (2) or more secondary indicators signifies the presence of wetland hydrology.

Vegetation is characterized by four (4) different strata. This includes trees (woody plants, excluding vines, three inches or more [ $\geq 3.0'$ ] in diameter at breast height [DBH]), saplings/shrubs (woody plants, excluding vines, less than three inches [ $< 3.0'$ ] DBH and greater than or equal to [ $\geq$ ] 3.28 feet tall), herbs (non-woody plants, regardless of size, and all other plants less than [ $<$ ] 3.28 feet tall), and woody vines (greater than 3.28 feet tall). In general, trees and woody vines are sampled within a thirty-foot (30.0') radius, saplings and shrubs are sampled within a fifteen-foot (15.0') radius, and herbs are sampled within a five-foot (5.0') radius.

When evaluating an area for the presence of hydrophytes, classification of the indicator status of vegetation is based on *The National Wetland Plant List: 2016 Update of Wetland Ratings* (Lichvar et al., 2016). The list of possible indicator statuses for plants is as follows:

- ▶ Obligate Wetland (OBL) - Obligate Wetland plants occur in standing water or in saturated soils;
- ▶ Facultative Wetland (FACW) - Facultative Wetland plants nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may on rare occasions, occur in non-wetlands;
- ▶ Facultative (FAC) - Facultative plants occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but often occur in standing water or saturated soils;
- ▶ Facultative Upland (FACU) - Facultative Upland plants typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils; and,
- ▶ Obligate Upland (UPL) - Obligate Upland plants almost never occur in water or saturated soils.

Presence of hydrophytic vegetation is determined by using a Rapid Test, Dominance Test or Prevalence Index. The Rapid Test finds a vegetation community to be hydrophytic if all dominant species are OBL or FACW. Hydrophytic vegetation is considered present based on the Dominance Test if more than fifty percent (50%) of dominant species are OBL, FACW, or FAC. The Prevalence Index weighs the total percent of vegetation cover based on the indicator status of each plant. Hydrophytic vegetation is considered present when the Prevalence Index is less than or equal to ( $\leq$ ) 3.0 (USACE, 2012).

To determine the presence of hydric soils, soil data is collected by digging a minimum sixteen inch (16.0”) deep soil pit. The soil profile is studied and described, while possible hydric indicators are examined. Soil indicators described in the Wetlands Delineation Manual and Regional Supplement are used to determine the presence of hydric soils. The presence of any of these indicators signifies a hydric soil.

If all three parameters including wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils are identified at a single observation point, the area is determined to be a wetland. Once a wetland is identified, the boundary is delineated.

Wetland boundaries are determined by looking for locations in which one of the three wetland indicators would transition into an upland characteristic. When the transition is identified, a Data Form is completed in the Upland Area. Wetland boundaries are then marked in the field using pink flagging labeled “WETLAND DELINEATION.” The locations of the flags are recorded using a Global Positioning System (GPS) unit. Each wetland is codified with a unique identifier indicating the feature type and number (e.g., W001).

Wetlands are then classified using the *Classification of Wetlands and Deepwater Habitats of the United States* as modified for NWI Mapping Convention. This system classifies wetlands based on topographic position and vegetation type. Palustrine system wetlands found within the study area are classified as Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS), Palustrine Forested (PFO), or Palustrine Unconsolidated Bottom (PUB) based on aerial coverage of the vegetative community across the extent of the wetland boundary (Cowardin et al., 1979).

## 2.2 Waterbodies

As with wetlands, Sections 404 and Section 401 of the Clean Water Act (CWA) and state regulations protect waterbodies in OH. Generally, waterbodies are defined as environmental features that have defined beds and banks, ordinary high water mark (OHWM), and contain flowing or standing water for at least a portion of the year.

### 2.2.1 Preliminary Data Gathering

During the preliminary data gathering, the USGS 7.5-minute topographic mapping is examined for the presence of mapped waterbodies including perennial and intermittent streams. In addition, the topographic mapping is used to identify areas likely to contain unmapped waterbodies including ephemeral streams (USGS, 1978, 1985) (Figure 1).

The OEPA 401 Water Quality Certification for the 2017 Nationwide Permits Stream Eligibility Web Map (OEPA, 2017) is used to determine eligibility for coverage under the 401 Water Quality Certification (WQC) for the 2017 Nationwide Permits (NWPs). Furthermore, the map is used to identify any ineligible areas that may require a CWA Section 401 individual permit from the OEPA should stream impacts occur within the Project area (OEPA, 2017) (Figure 3).

### 2.2.2 Onsite Inspection

During the onsite inspection, GAI staff traversed the study area, concurrently with the wetland inspection, whereby waterbodies are identified. Waterbodies are identified based on the morphological and hydrologic characteristics of the channel and the presence of aquatic macroinvertebrates.

When a waterbody is identified, field measurements are collected. The measurements include top of bank width, top of bank depth, pool depth, water depth, OHWM width, and OHWM depth. A detailed description of substrate composition is also recorded. Waterbodies are then delineated using white flagging marked with the GAI stream code (e.g., S001). The tops-of-

bank for streams wider than ten feet ( $>10.0'$ ) are delineated, while the centerline of smaller streams is delineated. The locations of the flags are recorded using a sub-meter-capable hand-held GPS unit.

## **2.3 Rare, Threatened, and Endangered Species**

GAI conducts a literature review of potential Rare, Threatened, and Endangered (RTE) species in the vicinity of the Project study area. Potential habitat for RTE species as a result of the literature review is noted during the ecological survey.

### **2.3.1 Preliminary Data Gathering**

A request for review of the Ohio Natural Heritage Database (ONHD) is submitted to the Ohio Department of Natural Resources (ODNR) to determine if any state-listed Threatened or Endangered species occur within a one-mile (1.0 mi) radius of the Project area. A request is also submitted to the USFWS Ohio Ecological Services Field Office to determine if any federally-listed Threatened or Endangered species occur within the vicinity of the Project area.

### **2.3.2 Onsite Inspection**

During the onsite inspection, GAI staff traverse the study area in conjunction with the wetland and waterbody inspections to determine if suitable habitat for state- and/or federally-listed RTE species is present within the study area.

## **3.0 Results**

### **3.1 Wetlands**

#### **3.1.1 Preliminary Data Gathering**

Desktop review of available USFWS NWI digital data for the Project revealed nine NWI mapped wetlands within the Project study Area. One wetland is classified as a palustrine, emergent, persistent, temporary flooded (PEM1A) which corresponds to W001. One is classified as palustrine, unconsolidated bottom, intermittently exposed (PUBG) which corresponds to W003. One wetland is classified as palustrine, emergent, persistent, seasonally flooded (PEM1Ch) and palustrine, emergent, persistent, seasonally flooded/ forested, dead, semipermanently flooded, diked/impounded (PEM1/F05Fh) which corresponds to W005. One wetland is classified as palustrine, emergent, persistent, seasonally flooded (PEM1Ch), palustrine, unconsolidated bottom, intermittently exposed, diked/impounded (PUBGh), and palustrine, forested, broad-leaved deciduous, seasonally flooded (PFO1Ch) which corresponds to W006. One is classified palustrine, emergent, persistent, seasonally flooded (PEM1Ch) and palustrine, aquatic bed, intermittently exposed, dike/impounded (PABGh) and corresponds to W008 (USFWS, 2017).

According to the USDA-NRCS soil mapping, twenty (20) soil map units are located within the Project study area (Figure 2). None of these are classified as hydric or are known to contain hydric inclusions.

#### **3.1.2 Onsite Inspection**

Eight (8) wetlands were identified and delineated within the Project study area. Six (6) wetlands are classified as PEM wetlands, one (1) wetland is classified as PFO wetland, and one (1) is classified as PEM and PFO wetland. In order to document site conditions, USACE Data Forms were completed for each wetland and upland reference. Information on the delineated wetlands can be found in Table 1 and photographs of the wetlands are included in Appendix A.

### 3.1.3 Regulatory Discussion

The USACE guidance divides waterbodies into three (3) groups: Traditionally Navigable Waters (TNWs), non-navigable Relatively Permanent Waters (RPWs), and non-navigable Non-RPWs. TNWs are waterbodies which have been, are, or may be susceptible to use in interstate commerce, including recreational use of the waterbody. RPWs are waterbodies that flow year-round, or at a minimum seasonally, by exhibiting continuous flow for at least three (3) consecutive months, but are not TNWs. Non-RPWs are waterbodies that do not flow continuously for at least three (3) consecutive months, are not TNWs or RPWs, but typically exhibit characteristic beds, banks, and OHWM (USACE, 2007).

The status of wetlands is determined partly based on the classification of the waterbody that the wetland is associated with, and the degree of that association. Wetlands that abut or are adjacent to TNWs are jurisdictional. Wetlands that abut RPWs are jurisdictional. Wetlands that are adjacent to RPWs and wetlands that abut or are adjacent to Non-RPWs must be subjected to the Significant Nexus Test (SNT) to determine their jurisdictional status. Generally, the USACE considers wetlands that are isolated, meaning that they are not associated with any other surface water feature, as non-jurisdictional; and wetlands that abut or are adjacent to Non-RPWs as needing further examination by the USACE to determine and verify whether they exhibit a significant nexus to waters of the United States. If these wetlands exhibit a significant nexus, they are jurisdictional; if not, they are not subject to USACE jurisdiction (USACE, 2007).

Wetlands that do not exhibit an association with any surface water are categorized as “isolated” under present USACE guidance and policy (USACE, 2007). These wetlands are regulated by the OEPA Division of Surface Water, and may require an Isolated Wetland Permit.

As regulated by Ohio Administrative Code (OAC) rules 3745-1-50 through 3745-1-54, wetlands were also evaluated using the ORAM to determine the appropriate wetland category. Any wetland score that fell within a gray zone between categories was scored one of two ways. Either the wetland was assigned to the higher of the two categories or it was assessed using a non-rapid method to determine its quality (Mack, 2001). The category assigned to a particular wetland determines the requirement, if any, for additional levels of protection administered by the OEPA.

## 3.2 Waterbodies

### 3.2.1 Preliminary Data Gathering

Desktop review of the available USGS topographic mapping revealed five (5) previously mapped stream segments located within the Project study area (Figure 1). Desktop review of OEPA’s Stream Eligibility Web Map revealed the Project is located within watersheds categorized as “Eligible” for automatic 401 WQC coverage (Figure 3).

### 3.2.2 Onsite Inspection

Twenty (20) stream segments were identified and delineated within the Project study area. Seven (7) stream segments were classified as having a perennial flow regime, six (6) were classified as intermittent, and four (4) were classified as having an ephemeral flow regime. Information on the delineated waterbodies and its classification can be found in Table 2, and photographs of the identified stream are included in Appendix A.

### 3.2.3 Regulatory Discussion

As with wetlands, present USACE guidance and policy determines the jurisdictional status of waterbodies identified during the Project. TNWs and RPWs are jurisdictional. Non-RPWs must be subjected to the SNT by USACE to determine their jurisdictional status. If Non-RPWs exhibit a Significant Nexus, as defined in USACE guidance documents, they are jurisdictional. If not, they do not fall under the jurisdiction of the USACE.

Streams are generally defined as environmental features that have defined beds and banks, an OHWM, and contain flowing or standing waters for at least a portion of the year (USACE 2005). Streams were classified as perennial, intermittent, or ephemeral based upon presence of flow, estimated duration of flow, stream bed characteristics, and presence of aquatic biota. The USACE *Jurisdictional Determination Form Instructional Guidebook* (USACE, 2007) was used to determine stream classification and flow status.

As regulated by OAC Chapter 3745-1-24, streams were also assessed according to OEPA guidance using either the HHEI for watersheds less than one square mile (<1.0 mi<sup>2</sup>) in size, or the Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and twenty square miles (1.0-20.0 mi<sup>2</sup>) in size.

## 3.3 Rare, Threatened, and Endangered Species

### 3.3.1 Preliminary Data Gathering

Desktop review of ODNR, Division of Wildlife's Ohio's Listed Species revealed 338 Endangered, Threatened, Species of Concern, and Species of Interest located in OH (ODNR, 2017). Eighteen (18) of the state-listed species are considered federally endangered, and four (4) are federally threatened.

A review of the USFWS *County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species for Ohio*, as well as the USFWS Information for Planning and Consultation (IPaC) website revealed three (3) federally Endangered or Threatened species that may occur within the Project study area (USFWS, 2017). The list of species includes the following:

- ▶ Indiana bat (*Myotis sodalis*) - Endangered;
- ▶ Northern long-eared bat (*Myotis septentrionalis*) - Threatened;
- ▶ Running Buffalo Clover (*Trifolium stoloniferum*) - Endangered.

In addition to the species listed above, there are three (3) migratory bird species that may occur within the Project study area.

### 3.3.2 Onsite Inspection

Potential habitat for RTE species was evaluated within the Project study area. In general, the habitat encountered within the study area consisted of maintained transmission line right-of-way with consistent presence of scrub vegetation (i.e. *Rubus allegheniensis*, *Rosa multiflora*) boarded by mixed deciduous forest, open fields, residential areas and PEM/PFO wetlands. Seven perennial, nine intermittent, and four ephemeral streams were identified within the study area. Representative photographs of the identified habitat types are included in Appendix A.

### 3.3.3 Regulatory Discussion

State-listed RTE species fall under the jurisdiction of the ODNR, Division of Wildlife, while federally-listed species are covered under Section 7 of the Endangered Species Act. The Bald and Golden Eagle Protection Act and Migratory Bird Act aim to extend protection to certain bird species that fall under the jurisdiction of the USFWS. Based on the desktop review and onsite inspection, informal consultation with the ODNR and USFWS has been initiated to determine if any activities associated with the proposed Project may affect state- and/or federally-listed RTE species. The ODNR and USFWS consultation letters were submitted on August 3, 2020 and are provided in Appendix E. The USFWS responded to the request for information on August 17, 2020 stating that due to the project type, size, and location, impacts to federally-listed species or critical habitat are not anticipated with the exception of the protected bat species. Impacts to bats and bat habitat have yet to be determined. The ODNR response will be appended once received.

## 4.0 Conclusions

An ecological survey was conducted within the Project study area on April 21 through April 24, 2020. Twenty streams (seven perennial, nine intermittent, and four ephemeral) were identified within the Project study area. Eight wetlands were identified within the Project study area. Summaries of the delineated aquatic features are provided in Tables 1 and 2, and a map of their locations is depicted on Figure 2. Photographs of the wetland and stream features are included in Appendix A. Wetland Determination Data Forms documenting the investigation are provided in Appendix B, with HHEI/QHEI and ORAM Data Forms provided in Appendix C and D, respectively.

The jurisdictional status of these features are considered preliminary and should be confirmed with the USACE and state agencies through the JD process.

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## TABLES

**Table 1**  
**Wetlands Identified Within the Project Study Area**

| Wetland I.D. <sup>1</sup> | Latitude <sup>2</sup> | Longitude <sup>2</sup> | Proximal Waterbody | USACE Classification <sup>3</sup> | Cowardin Classification <sup>4</sup> | Size <sup>5</sup><br>(acres) | ORAM<br>v. 5.0 Score <sup>6</sup> | ORAM<br>Category <sup>7</sup> | Figure 2<br>(sheet) |
|---------------------------|-----------------------|------------------------|--------------------|-----------------------------------|--------------------------------------|------------------------------|-----------------------------------|-------------------------------|---------------------|
| W001-PEM-CAT2             | 40.185101             | -80.70272              | Short Creek        | Adjacent                          | PEM                                  | 0.128047                     | 34                                | 2                             | 9                   |
| W002-PEM-CAT1             | 40.184548             | -80.703032             | Short Creek        | Adjacent                          | PEM                                  | 0.011152                     | 28                                | 1                             | 9                   |
| W003-PEM-CATMOD2          | 40.198502             | -80.69536              | Williamson Run     | Adjacent                          | PEM                                  | 0.05514                      | 43                                | Modified 2                    | 5, 6                |
| W004-PEM-CATMOD2          | 40.197831             | -80.695898             | Williamson Run     | Isolated                          | PEM                                  | 0.031657                     | 36                                | Modified 2                    | 6                   |
| W005-PEM-CATMOD2          | 40.186837             | -80.702182             | Short Run          | Adjacent                          | PEM                                  | 0.929223                     | 36                                | Modified 2                    | 8                   |
| W006-PEM-CAT2             | 40.208229             | -80.668833             | Ohio River         | Adjacent                          | PEM                                  | 0.217387                     | 46                                | 2                             | 1                   |
| W006-PFO-CAT2             | 40.208164             | -80.668612             | Ohio River         | Adjacent                          | PFO                                  | 0.13159                      |                                   |                               | 1                   |
| W007-PFO-CATMOD2          | 40.20335              | -80.68541              | UNT to Ohio River  | Adjacent                          | PFO                                  | 0.122985                     | 43                                | Modified 2                    | 4                   |
| W008-PEM-CATMOD2          | 40.208499             | -80.670188             | Ohio River         | Adjacent                          | PEM                                  | 0.584203                     | 37                                | Modified 2                    | 1, 3                |

Notes:

- <sup>1</sup> GAI map designation.
- <sup>2</sup> North American Datum, 1983.
- <sup>3</sup> Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process.
- <sup>4</sup> PEM - Palustrine Emergent, PFO - Palustrine Forested; PUB - Palustrine Unconsolidated Bottom
- <sup>5</sup> Total acreage of wetland located within the Project study area.
- <sup>6</sup> Interim scoring breakpoints for wetland regulatory categories for ORAM v 5.0 Score: Category 1 score 0 - 29.9; Category 1 or 2 gray zone ORAM score 30 - 34.9; Category modified 2 ORAM score 35 - 44.9; Category 2 ORAM score 45 - 59.9; Category 2 or 3 ORAM score 60 - 64.9; Category 3 ORAM score 65 - 100. OEPA Ecology Unit Division of Surface Water. *ORAM v. 5.0 Qualitative Score Calibration*. Dated August 15, 2000. [http://www.epa.gov/portals/35/401/oram50sc\\_s.pdf](http://www.epa.gov/portals/35/401/oram50sc_s.pdf).

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OAC Rule 3745-1-54(C)(2) defines Category 1 wetlands as wetlands which "...support minimal wildlife habitat, and minimal hydrological and recreation functions," and as wetlands which have "...hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions." Category 2 wetlands are defined as wetlands which "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Degraded but Restorable Category 2 Wetlands are according to OAC Rule 3745-1-54(C) states that wetlands that are assigned to Category 2 constitute the broad middle category that "...support moderate wildlife habitat, or hydrological or recreational functions," but also include "...wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." OAC Rule 3745-1-54(C)(2) defines Category 3 wetlands as wetlands which "...support superior habitat, or hydrological or recreational functions," and as wetlands which have "...high levels of diversity, a high proportion of native species, or high functional values."

**Table 2**  
**Waterbodies Identified Within the Project Study Area**

| Stream I.D. <sup>1</sup> | Waterbody Name            | OEPA WQ Designation <sup>2</sup> | OEPA Stream Eligibility <sup>3</sup> | Stream Type  | USACE Classification <sup>4</sup> | HHEI Score <sup>5</sup> | PHWH Class <sup>5</sup> | OHEI Score <sup>6</sup> | Width (feet) <sup>7</sup> | OHWM Width (feet) | OHWM Depth (inches) | Stream Length <sup>8</sup> (feet) | Latitude <sup>9</sup> | Longitude <sup>9</sup> | Figure 2 (sheet) |
|--------------------------|---------------------------|----------------------------------|--------------------------------------|--------------|-----------------------------------|-------------------------|-------------------------|-------------------------|---------------------------|-------------------|---------------------|-----------------------------------|-----------------------|------------------------|------------------|
| S001                     | Short Creek               | WWH                              | Eligible                             | Perennial    | RPW                               | -                       | -                       | -                       | 80                        | 75                | 48                  | 123                               | 40.185587             | -80.702601             | 8, 9             |
| S002                     | UNT to Little Short Creek | -                                | Eligible                             | Ephemeral    | NRPW                              | 32                      | Class II                | -                       | 4                         | 3.5               | 3                   | 127                               | 40.176812             | -80.706842             | 11               |
| S003                     | UNT to Little Short Creek | -                                | Eligible                             | Intermittent | RPW                               | 64                      | Class II                | -                       | 6                         | 5.5               | 4                   | 121                               | 40.174264             | -80.708585             | 11               |
| S004                     | UNT to Little Short Creek | -                                | Eligible                             | Intermittent | RPW                               | 37                      | Class II                | -                       | 3                         | 2.5               | 3                   | 110                               | 40.172971             | -80.709443             | 12               |
| S005                     | UNT to Little Short Creek | -                                | Eligible                             | Intermittent | RPW                               | 56                      | Class II                | -                       | 3                         | 2.5               | 4                   | 115                               | 40.171472             | -80.710449             | 12               |
| S006                     | UNT to Little Short Creek | -                                | Eligible                             | Intermittent | RPW                               | 67                      | Class II                | -                       | 4                         | 3.5               | 1.5                 | 146                               | 40.170015             | -80.711368             | 12               |
| S007                     | UNT to Little Short Creek | -                                | Eligible                             | Perennial    | RPW                               | 72                      | Class III               | -                       | 8                         | 7.5               | 8                   | 127                               | 40.166869             | -80.711625             | 13               |
| S008                     | UNT to Williamson Run     | -                                | Eligible                             | Intermittent | RPW                               | 76                      | Class III               | -                       | 5                         | 4.5               | 4                   | 485                               | 40.197508             | -80.696402             | 5, 6             |
| S009                     | Williamson Run            | WWH                              | Eligible                             | Perennial    | RPW                               | -                       | -                       | -                       | 18                        | 17.5              | 24                  | 122                               | 40.196914             | -80.696903             | 6                |
| S010                     | UNT to Short Creek        | -                                | Eligible                             | Ephemeral    | NRPW                              | 25                      | Class II                | -                       | 3                         | 2.5               | 3                   | 236                               | 40.190532             | -80.700926             | 7, 8             |
| S011                     | UNT to Short Creek        | -                                | Eligible                             | Intermittent | RPW                               | 40                      | Class II                | -                       | 4                         | 3.5               | 3                   | 185                               | 40.190124             | -80.700943             | 7, 8             |
| S012                     | Ohio River                | WWH                              | Eligible                             | Perennial    | RPW                               | -                       | -                       | -                       | 900                       | 900               | 48                  | 114                               | 40.207071             | -80.662866             | 1                |
| S013                     | UNT to Ohio River         | -                                | Eligible                             | Intermittent | RPW                               | 46                      | Class II                | -                       | 4                         | 1.5               | 4                   | 30                                | 40.201511             | -80.688893             | 5                |
| S014                     | UNT to Ohio River         | -                                | Eligible                             | Ephemeral    | NRPW                              | 19                      | Class I                 | -                       | 3                         | 2                 | 4                   | 70                                | 40.201708             | -80.688677             | 5                |
| S015                     | UNT to Ohio River         | -                                | Eligible                             | Intermittent | RPW                               | 62                      | Class II                | -                       | 5                         | 4                 | 6                   | 200                               | 40.203664             | -80.684878             | 4                |
| S016                     | UNT to Ohio River         | -                                | Eligible                             | Perennial    | RPW                               | 72                      | Class III               | -                       | 8                         | 7                 | 12                  | 129                               | 40.203724             | -80.684603             | 4                |
| S017                     | UNT to Ohio River         | -                                | Eligible                             | Perennial    | RPW                               | 77                      | Class III               | -                       | 10                        | 6                 | 12                  | 146                               | 40.207291             | -80.678709             | 3                |
| S018                     | UNT to Ohio River         | -                                | Eligible                             | Perennial    | RPW                               | 83                      | Class III               | -                       | 10                        | 8                 | 12                  | 185                               | 40.208743             | -80.676881             | 3                |
| S019                     | UNT to Ohio River         | -                                | Eligible                             | Intermittent | RPW                               | 55                      | Class II                | -                       | 4                         | 3                 | 5                   | 233                               | 40.210201             | -80.677493             | 2                |
| S020                     | UNT to Ohio River         | -                                | Eligible                             | Ephemeral    | NRPW                              | 19                      | Class I                 | -                       | 3                         | 1.5               | 4                   | 143                               | 40.212282             | -80.674888             | 2                |

**Notes:**

- GAT map designation.
- As defined by OAC Chapter 3745-1 Water Quality Standards, Water use designations and statewide criteria (OAC 3745-1-07). [http://www.epa.ohio.gov/dsw/rules/3745\\_1.aspx](http://www.epa.ohio.gov/dsw/rules/3745_1.aspx).
- As defined by the 401 WQC conditions for stream eligibility coverage under the 2017 NWP program. Streams located in Possibly Eligible areas are eligible for coverage if the pH is <6.5 or stream flow is ephemeral. Streams located in Possibly Eligible areas are also eligible for coverage if the HHEI score is <50, or if the HHEI score is between 50-69 and substrate composition is ≤ 10% coarse types (includes cumulative percentage of bedrock, boulders, boulder slabs, and cobble).
- Jurisdictional status is the opinion of GAT and must be confirmed by USACE and state agencies through the JD process. RPW - Relatively Permanent Waters.

- 5 Scoring for OEPA Headwater Habitat Evaluation Index (HHEI) Primary Headwater Habitats (PHWH). Class I = 0 - 29.9 and include "normally dry channels with little or no aquatic life present"; Class II = 30 - 69.9 and are equivalent to "warm water habitat"; Class III = 70 - 100 and typically have perennial flow with cool-cold water adapted native fauna.
- 6 Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHET). Excellent =  $\geq 70$ ; Good = 55 - 60; Fair = 43 - 54; Poor = 30 - 42; Very Poor =  $< 30$ .
- 7 Width in feet from tops of stream bank.
- 8 Total stream length (in feet) located within the Project study area.
- 9 North American Datum, 1983.

**Table 3<sup>1</sup>**  
**ODNR and USFWS RTE Species and Critical Habitat Review Results**

| Common Name             | Scientific Name                     | Habitat Type  | Listing Status <sup>1</sup> | Habitat Type Present Within the Project Area? | Impacts to Habitat/Species Anticipated?                         | Restricted Construction Dates |
|-------------------------|-------------------------------------|---|-----------------------------|---|---|-------------------------------|
| <b>Amphibians</b>       |                                     |   |                             |   |   |                               |
| Eastern Hellbender      | <i>Cryptobranchus alleganiensis</i> | Flooded agricultural fields or other water-holding depressions, underground burrows.  | E, FSC                      | No  | No; Known habitat types are not present within the Project area | -                             |
| Four-toed Salamander    | <i>Hemidactylium scutatum</i>       | Boggy woodland ponds and swamps; hides beneath logs, rocks, slabs of bark, and leaves.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| <b>Bats</b>             |                                     |   |                             |   |   |                               |
| Big Brown Bat           | <i>Eptesicus fuscus</i>             | Roost sites can be trees, caves, mines, and buildings.  | SC                          | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Indiana Bat             | <i>Myotis sodalis</i>               | Trees >3" dbh   | E, FE                       | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Hoary Bat               | <i>Lasiurus cinereus</i>            | Deciduous and coniferous forests and woodlands, including areas altered by humans. Roost sites are usually in foliage of large deciduous or coniferous trees. | SC                          | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Little Brown Bat        | <i>Myotis lucifugus</i>             | Roost sites can be trees, rock crevices, caves, mines, and buildings.   | SC                          | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Northern Long-eared Bat | <i>Myotis septentrionalis</i>       | Roost sites can be trees, caves, and mines.   | T, FT                       | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Red Bat                 | <i>Lasiurus borealis</i>            | Roost sites can be trees, shrubs, and clusters of herbaceous plants.  | SC                          | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| Silver-haired Bat       | <i>Lasionycteris noctivagans</i>    | Roost sites can be trees, rock crevices, caves, and buildings.  | SC                          | Yes   | No; Impacts are not anticipated                                 | April 1 to September 30       |
| <b>Birds</b>            |                                     |   |                             |   |   |                               |
| American Coot           | <i>Fulica americana</i>             | Shallows of freshwater lakes, ponds, or marshes.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |

| Common Name              | Scientific Name                  | Habitat Type   | Listing Status <sup>1</sup> | Habitat Type Present Within the Project Area? | Impacts to Habitat/Species Anticipated?                         | Restricted Construction Dates |
|--------------------------|----------------------------------|--|-----------------------------|---|---|-------------------------------|
| <b>Birds (continued)</b> |                                  |  |                             |   |   |                               |
| Barn Owl                 | <i>Tyto alba</i>                 | Old buildings, barns, silos or chimneys, and occasionally hollow trees; Dependent on open grassland for hunting prey.  | T                           | No  | No; Known habitat types are not present within the Project area | -                             |
| Black-billed Cuckoo      | <i>Coccyzus erythrophthalmus</i> | Woodlands, but prefers young forests and dense, scruffy thickets.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Bobolink                 | <i>Dolichonyx oryzivorus</i>     | Large fields with a mixture of grasses and broad-leaved plants like legumes and dandelions.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Cerulean Warbler         | <i>Setophaga cerulea</i>         | Large deciduous wooded tracts of at least 50 to 75 acres. Utilizes both interiors and edges of woodlands.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Common Nighthawk         | <i>Chordeiles minor</i>          | Various, can be found in cities and towns as well as logged forest; woodland clearings, prairies, plains, sagebrush, grasslands, open forests, and rock outcrops.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Eastern Whip-poor-will   | <i>Antrostomus vociferus</i>     | Open, deciduous woods and forages over open fields and brushy areas.   | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Grasshopper Sparrow      | <i>Ammodramus savannarum</i>     | Dry upland habitats. Prefers tall-grass habitats such as hayfields, lightly grazed pastures, reclaimed strip mines, and fields bordering airports. Can also be found in clover and alfalfa hayfields and fallow fields with interspersions of weeds and grasses. | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Henslow's Sparrow        | <i>Ammodramus henslowii</i>      | Large contiguous blocks of grassland habitat.  | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Northern Bobwhite        | <i>Colinus virginianus</i>       | Forest edges and open grasslands. Agricultural fields, grasslands, open pine or pine-hardwood forests, and grass-brush rangelands.   | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |

| Common Name              | Scientific Name                   | Habitat Type  | Listing Status <sup>1</sup> | Habitat Type Present Within the Project Area? | Impacts to Habitat / Species Anticipated?                       | Restricted Construction Dates |
|--------------------------|-----------------------------------|---|-----------------------------|---|---|-------------------------------|
| <b>Birds (continued)</b> |                                   |   |                             |   |   |                               |
| Red-headed Woodpecker    | <i>Melanerpes erythrocephalus</i> | Open deciduous woodlands, river bottoms, burned or recently cleared areas, swamps, orchards, parks, farmland, grasslands with scattered trees, forest edges, and roadsides. | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Sharp-shinned Hawk       | <i>Accipiter striatus</i>         | Forest edges and interior. Prefer dense forests for breeding but utilize more open forests in the winter. Occasionally in suburban areas with bird feeders.                 | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Vesper Sparrow           | <i>Poocetes gramineus</i>         | Open areas with short, sparse grass and scattered shrubs including old fields, pastures, weedy fence lines and roadsides, hayfields, and native grasslands.                 | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| <b>Insects</b>           |                                   |   |                             |   |   |                               |
| Riffle snaketail         | <i>Ophiogomphus carolus</i>       | Clear, cold, and rocky streams that are fast flowing with few pools. Stream sediment consists of fine gravel or sand.   | T                           | No  | No; Known habitat types are not present within the Project area | -                             |
| <b>Fish</b>              |                                   |   |                             |   |   |                               |
| Goldeye                  | <i>Hiodon alosoides</i>           | Occurs in deep, open pools and channels of turbid, lowland rivers; small lakes and impoundments.  | E                           | No  | No; Known habitat types are not present within the Project area | -                             |
| Ohio Lamprey             | <i>Ichthyomyzon bdellium</i>      | Inhabit warmwater habitats in backwaters and pools of smaller streams and rivers.   | E                           | Yes   | No; Impacts are not anticipated                                 | -                             |
| American Eel             | <i>Anguilla rostrata</i>          | Freshwater lakes, streams, and rivers.  | T                           | Yes   | No; Impacts are not anticipated                                 | -                             |
| Tippecanoe Darter        | <i>Etheostoma tippecanoe</i>      | Prefers riffle areas four to 20 inches deep, in clean rivers and large creeks with a bottom of pea-sized, clean gravel and a high bottom current velocity.                  | T                           | No  | No; Known habitat types are not present within the Project area | -                             |

| Common Name                    | Scientific Name               | Habitat Type   | Listing Status <sup>1</sup> | Habitat Type Present Within the Project Area? | Impacts to Habitat/Species Anticipated?                         | Restricted Construction Dates |
|--------------------------------|-------------------------------|--|-----------------------------|---|---|-------------------------------|
| <b><i>Fish (continued)</i></b> |                               |  |                             |   |   |                               |
| Channel Darter                 | <i>Percina copelandi</i>      | Large, coarse sand or fine gravel bars in large rivers.  | T                           | No  | No; Known habitat types are not present within the Project area | -                             |
| River Darter                   | <i>Percina shumardi</i>       | Very large rivers, typically in areas of swift current. Found over a gravel or rocky bottom in depths of three feet or more.                           | T                           | No  | No; Known habitat types are not present within the Project area | -                             |
| Muskellunge                    | <i>Esox masquinongy</i>       | Coldwater lakes with numerous submerged weed beds.   | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| Longnose Dace                  | <i>Rhinichthys cataractae</i> | Found in lakes, streams, springs. Preferred habitat is riffles with a rocky substrate.   | SC                          | No  | No; Known habitat types are not present within the Project area | -                             |
| <b><i>Mammals</i></b>          |                               |  |                             |   |   |                               |
| Black Bear                     | <i>Ursus americanus</i>       | Heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests. Prefers wooded cover with a dense understory. | E                           | Yes   | No; Impacts are not anticipated                                 | -                             |
| Woodland Jumping Mouse         | <i>Napaeozapus insignis</i>   | Woodlands, especially bordering lakes and streams.   | SC                          | Yes   | No; Impacts are not anticipated                                 | -                             |
| Woodland Vole                  | <i>Microtus pinetorum</i>     | Eastern deciduous forests, typically live on forest floor in thick layers of leaves and loose soil.  | SC                          | Yes   | No; Impacts are not anticipated                                 | -                             |
| <b><i>Mussels</i></b>          |                               |  |                             |   |   |                               |
| Black Sandshell                | <i>Ligumia recta</i>          | Rivers with strong currents and lakes with a firm substrate of gravel or sand.   | T                           | Yes   | No; Impacts are not anticipated                                 | -                             |
| Threethorn Wartback            | <i>Oblivaria reflexa</i>      | Medium to large rivers, with slackwater conditions to swift currents and gravel to muddy sand.   | T                           | Yes   | No; Impacts are not anticipated                                 | -                             |

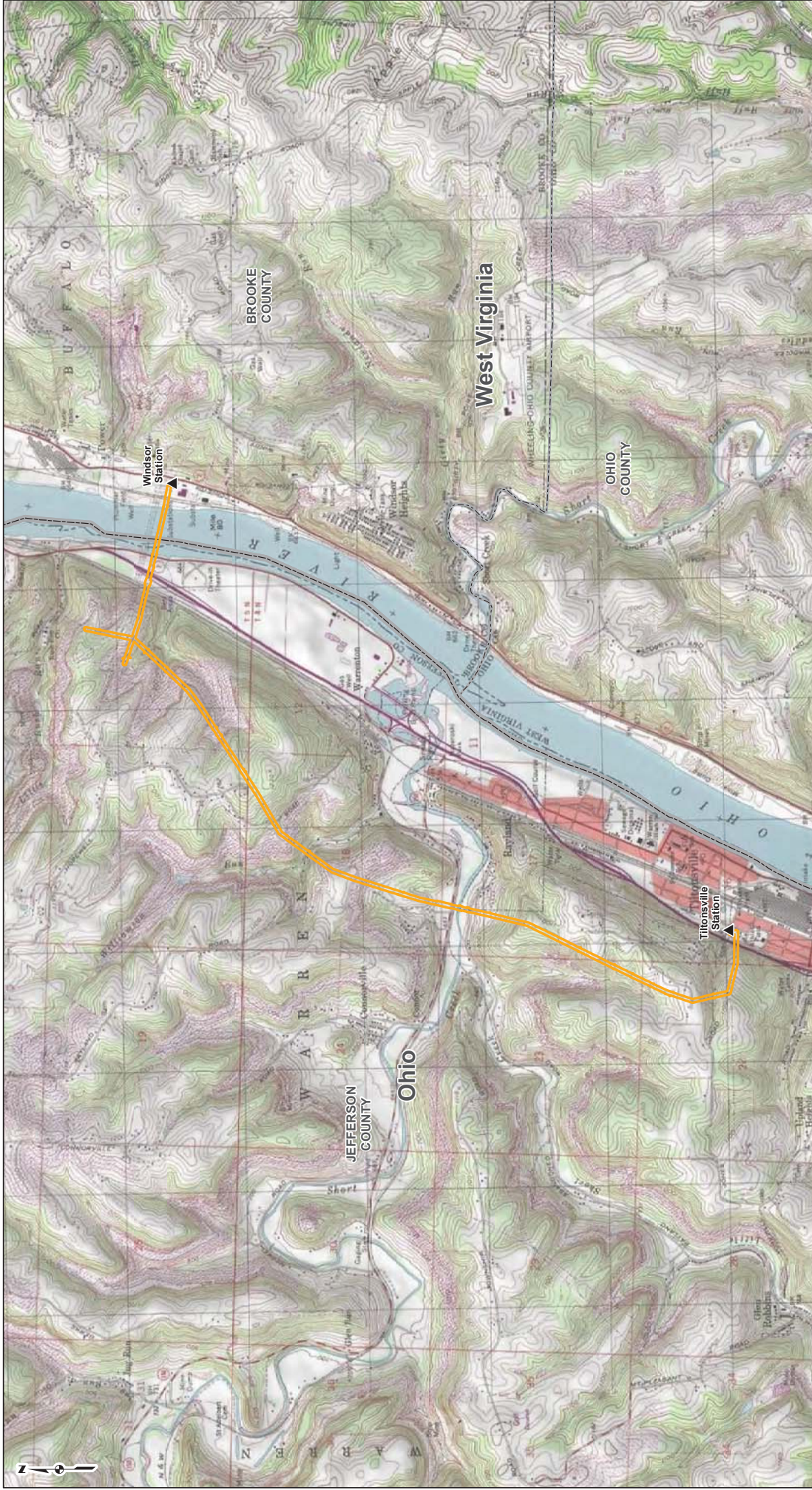
| Common Name        | Scientific Name                    | Habitat Type  | Listing Status <sup>1</sup> | Habitat Type Present Within the Project Area? | Impacts to Habitat/Species Anticipated? | Restricted Construction Dates |
|--------------------|------------------------------------|---|-----------------------------|---|---|-------------------------------|
| <b>Reptiles</b>    |                                    |   |                             |   |   |                               |
| Eastern Box Turtle | <i>Terrapene carolina carolina</i> | Various woodlands, typically found beneath rotting logs, decaying leaves, and other plant debris.   | SC                          | Yes   | No; Impacts are not anticipated         | -                             |
| Queensnake         | <i>Regina septemvittata</i>        | Require moving water and are usually found along aquatic plants, overhanging shrubs, or among or under rocks at the water's edge. Warm, shallow streams with shrubs and trees nearby are the preferred habitat. | SC                          | Yes   | No; Impacts are not anticipated         | -                             |

Notes:

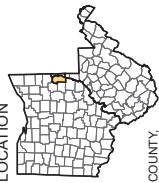
<sup>1</sup> E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern; FC = federal candidate.

<sup>2</sup> Natural Heritage Database record at or within a one-mile radius of the Project area.

## FIGURES



PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: USGS 7.5' TOPOGRAPHIC  
QUADRANGLES DILLONVILLE (1985), BERNARDY (1983),  
WHEELING-OHIO COUNTY AIRPORT (1985),  
ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO  
AND USGS, ACCESSED 08/2020.

LEGEND

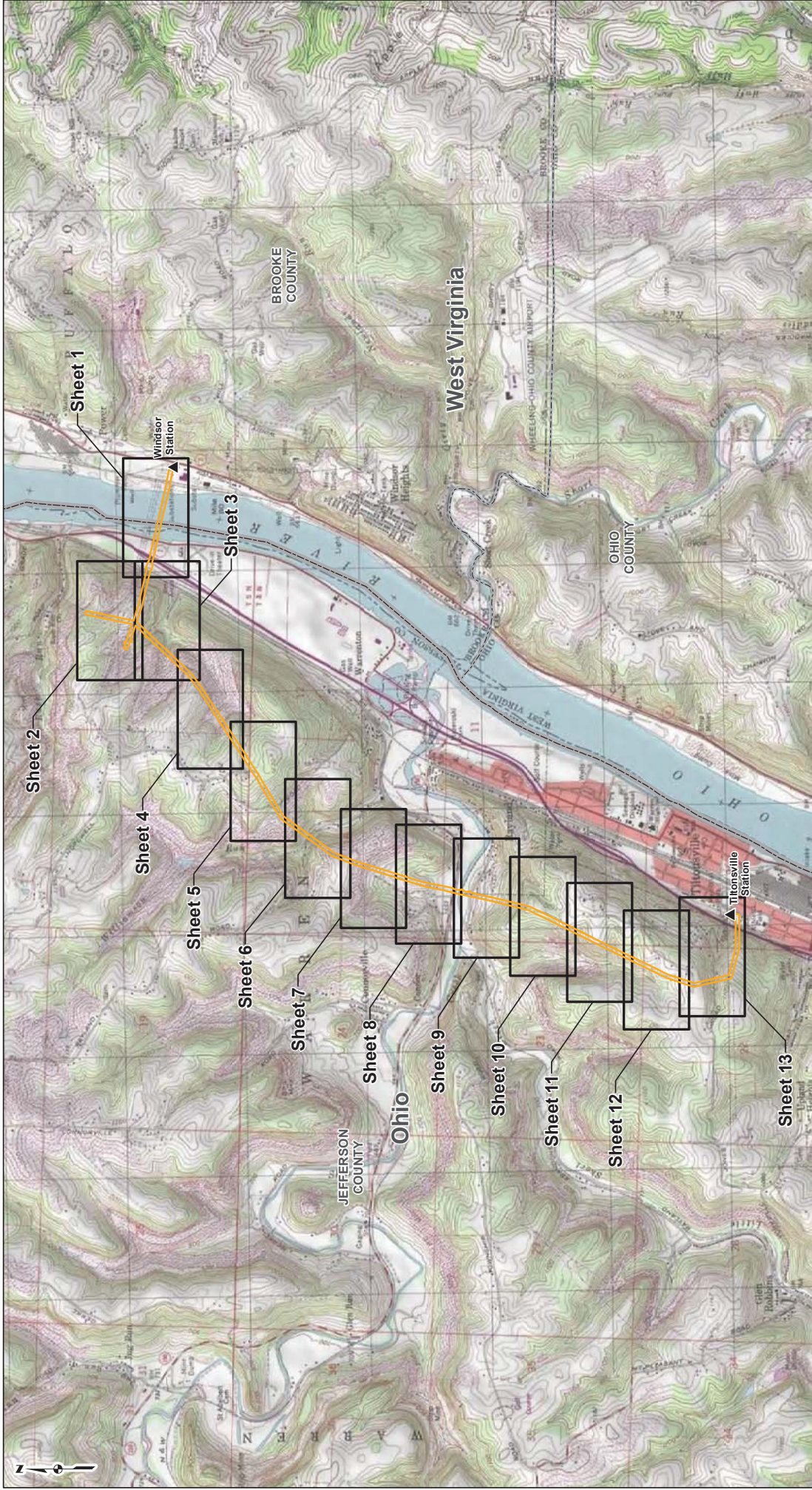
- Substation
- Study Area
- State Boundary
- County Boundary



FIGURE 1  
PROJECT LOCATION MAP

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/2/2020  
APPROVED:  
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# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: USGS 7.5' TOPOGRAPHIC  
QUADRANGLES DILLONVILLE (1985), BERNARDY (1983),  
AND COLUMBIANA (1983).  
ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO  
AND USGS, ACCESSED 08/2020.

# LEGEND

- Substation
- Study Area
- Sheet Index
- State Boundary
- County Boundary



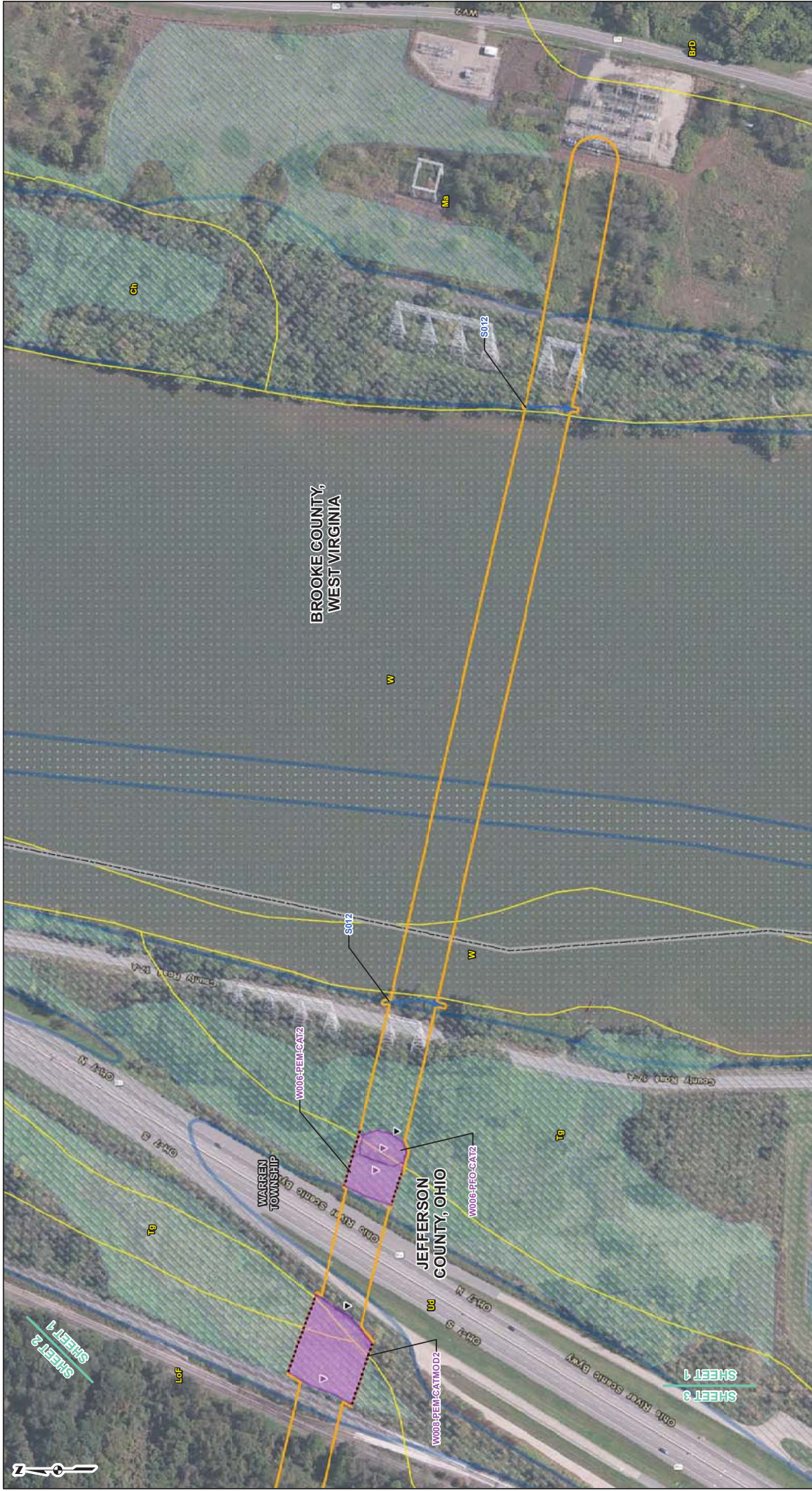
# FIGURE 2 RESOURCE LOCATION MAP SHEET INDEX

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

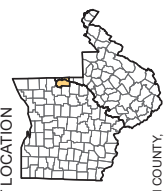
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CHECKED:

DATE: 8/2/2020  
APPROVED:

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# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USDA NATIONAL WETLANDS INVENTORY (NWI),  
TRANSPORTATION ESRI DELORME, HERE,  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA/NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

# LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

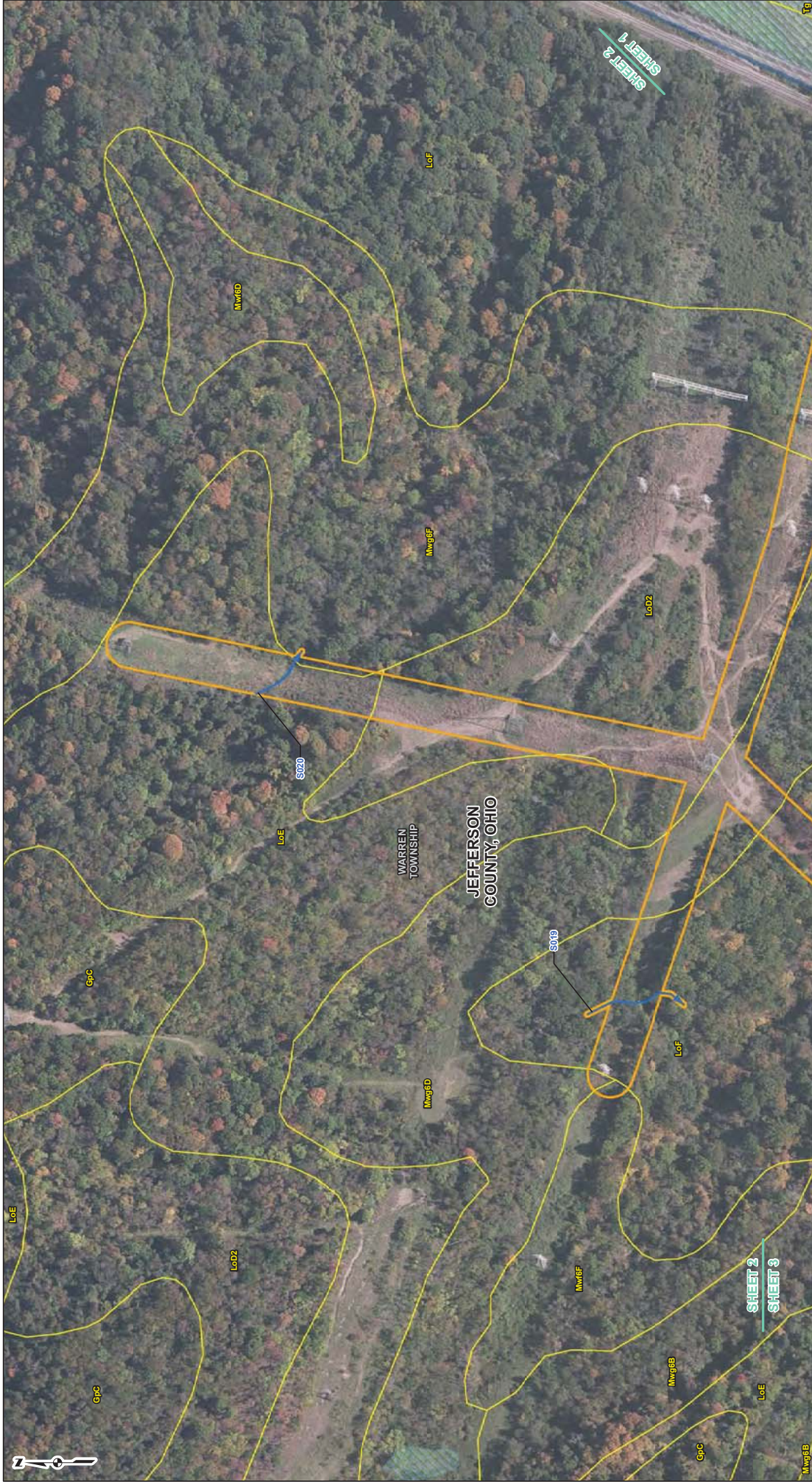


# FIGURE 2 RESOURCE LOCATION MAP SHEET 1 OF 13

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

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DATE: 8/3/2020  
APPROVED:



**FIGURE 2**  
**RESOURCE LOCATION MAP**  
**SHEET 2 OF 13**

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

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CHECKED: \_\_\_\_\_  
DATE: 8/3/2020  
APPROVED: \_\_\_\_\_

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**LEGEND**

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

0 100 200 400 Feet

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USDA NATIONAL WETLAND DATA, 2001,  
TRANSPORTATION ESRI DELORME, HERE,  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA/NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

**PROJECT LOCATION**

JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA





**PROJECT LOCATION**



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
NATIONAL FLOOD HAZARD DATA (NFHD),  
TRANSPORTATION ESRI DELORME, HERE,  
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CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL FLOOD HAZARD  
WETLANDS, USFWS 2019 NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019 NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA/NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

**LEGEND**

|                    |                     |                       |
|--------------------|---------------------|-----------------------|
| Culvert            | Open-Ended Boundary | NMI Wetland           |
| Upland Data Point  | Wetland             | 100-Year Floodplain   |
| Wetland Data Point | Study Area          | FEMA Floodway         |
| Stream             | Soil Type Boundary  | State/County Boundary |

0 100 200 400 Feet

**FIGURE 2**  
**RESOURCE LOCATION MAP**  
**SHEET 4 OF 13**

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

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APPROVED:







**PROJECT LOCATION**

JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

**LEGEND**

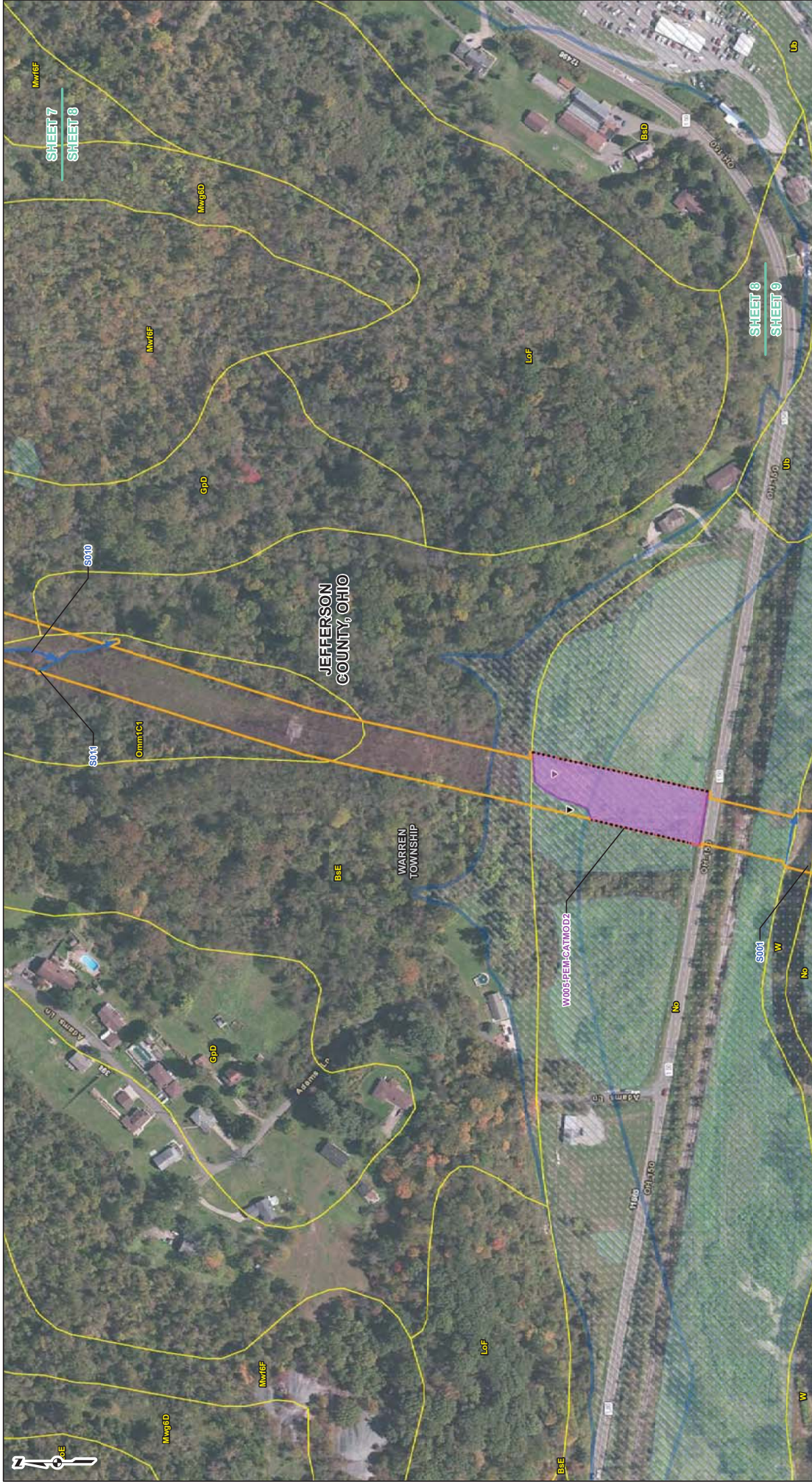
- Culvert
- ▼ Upland Data Point
- ▼ Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NMI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

**FIGURE 2**  
**RESOURCE LOCATION MAP**  
**SHEET 7 OF 13**

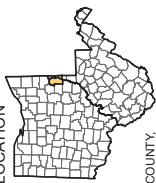
TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

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DATE: 8/3/2020  
APPROVED:   
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REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USGS NATIONAL WETLAND DATA, 2001  
TRANSPORTATION ESRI DELOMIE, HERE  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA/NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.



# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
CULVERTS AND WETLANDS DATA PROVIDED BY  
TRANSPORTATION ESRI DELORME, HERE  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

# LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
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- NWI Wetland
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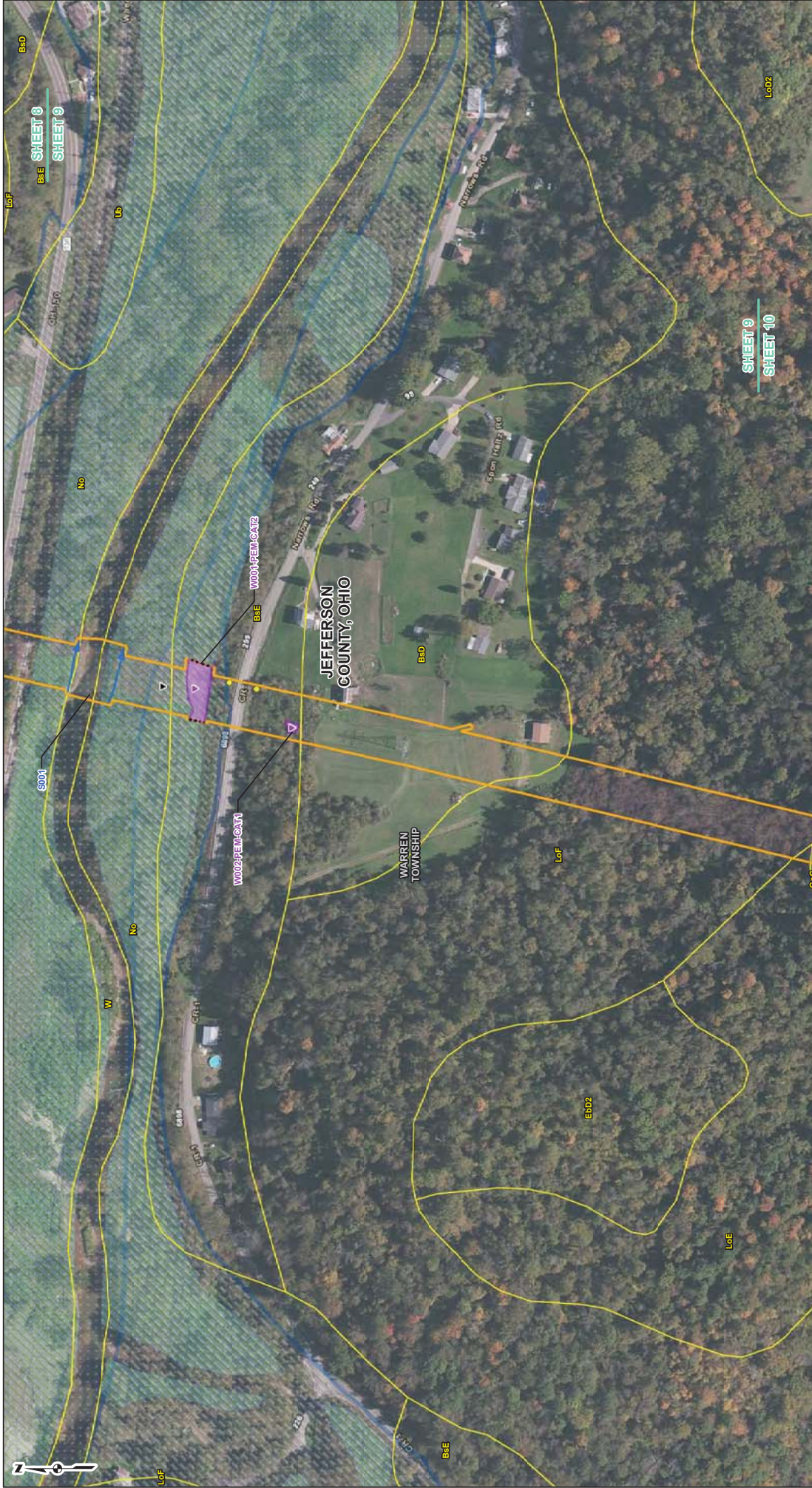
0 100 200 400  
Feet

# FIGURE 2 RESOURCE LOCATION MAP SHEET 8 OF 13

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

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CHECKED:  
DATE: 8/3/2020  
APPROVED:

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# PROJECT LOCATION

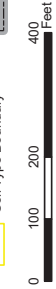


JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USDA NATIONAL WETLANDS DATA, FIELD  
TRANSPORTATION ESRI DELORME, HERE,  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD INVENTORY (NFI),  
(SSURGO) DATABASE, USDA NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

# LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary



# FIGURE 2 RESOURCE LOCATION MAP SHEET 9 OF 13

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:

G:\C170352-92 - GIS\WDX\WDS\IR\Resource\_Location\_Map\_2020\_08\_02.mxd



**FIGURE 2**  
**RESOURCE LOCATION MAP**  
**SHEET 10 OF 13**

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED: \_\_\_\_\_  
DATE: 8/3/2020  
APPROVED: \_\_\_\_\_

**LEGEND**

- ..... Open-Ended Boundary
- Welland
- Study Area
- Soil Type Boundary
- Culvert
- Upland Data Point
- Welland Data Point
- Stream
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

0 100 200 400 Feet

**PROJECT LOCATION**

JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USDA NATIONAL WETLANDS DATA, FIELD  
TRANSPORTATION ESRI DELORME, HERE,  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, US DNR 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.



PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USGS NATIONAL WETLAND DATA, 2018  
TRANSPORTATION ESRI DELORME, HERE  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI)  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, USDA/NRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary



FIGURE 2  
RESOURCE LOCATION MAP  
SHEET 11 OF 13



TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:



PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),

USDA NATIONAL WETLANDS DATA, FIELD  
TRANSPORTATION ESRI DELORME, HERE  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL WETLAND INVENTORY (NWI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD HAZARD  
(SSURGO) DATABASE, US DNR 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

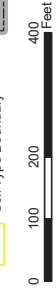
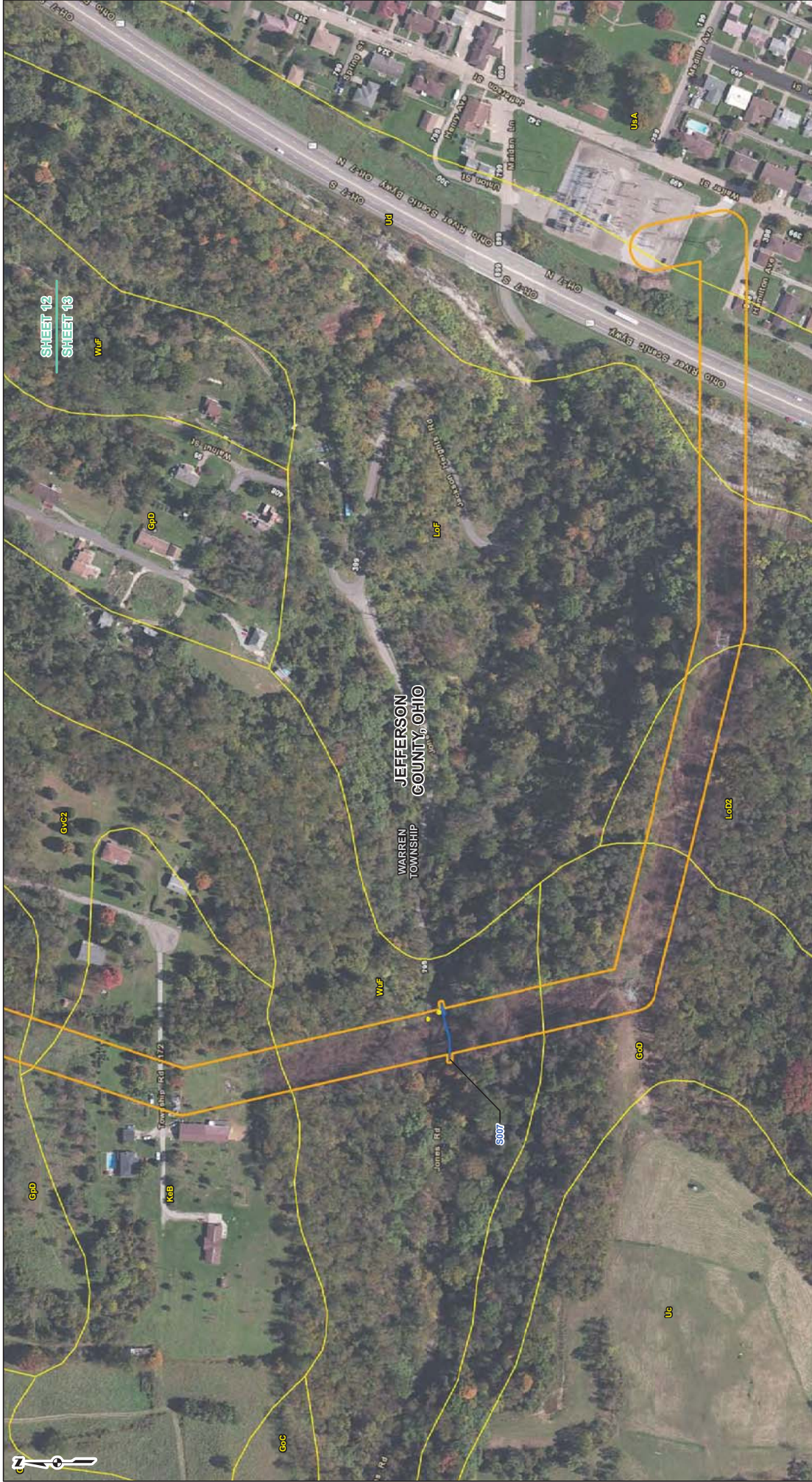


FIGURE 2  
RESOURCE LOCATION MAP  
SHEET 12 OF 13

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:



# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY (CLARITY),  
USGS NATIONAL FLOOD DATA CENTER,  
TRANSPORTATION ESRI DELORME, HERE,  
MAPMYINDIA, TOMTOM, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
08/2020, NATIONAL FLOOD INVENTORY (NFI),  
WETLANDS, USFWS 2019, NATIONAL FLOOD HAZARD  
LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY  
(FEMA) 2019, NATIONAL FLOOD INVENTORY (NFI),  
(SSURGO) DATABASE, USANRCS 2019, OHIO  
DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND,  
2018.

## LEGEND

- Culvert
- Upland Data Point
- Wetland Data Point
- Stream
- Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- State/County Boundary

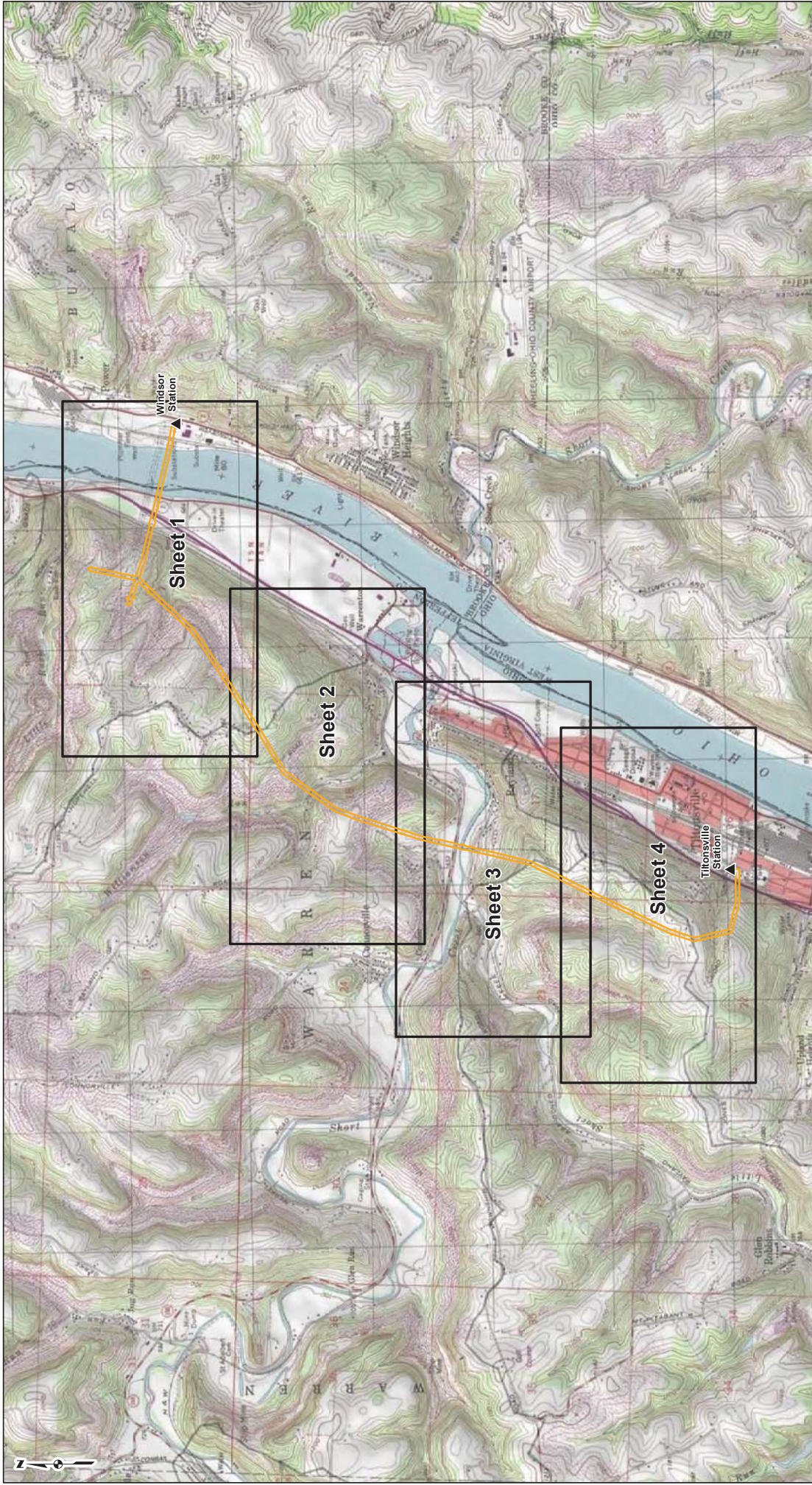


## FIGURE 2 RESOURCE LOCATION MAP SHEET 13 OF 13

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:

G:\C170352 92 - GIS\WXD\WDS\IR\Resource\_Location\_Map\_2020\_08\_02.mxd



**FIGURE 3**  
**STREAM ELIGIBILITY MAP**  
**SHEET INDEX**

**TILTNSVILLE - WINDSOR 138KV**  
**RATINGS INCREASE PROJECT**  
**AMERICAN ELECTRIC POWER**

**LEGEND**  
 ▲ Substation  
 Study Area  
 Sheet Index  
 Ohio EPA Stream Eligibility:  
 Ineligible  
 Possibly Eligible  
 Eligible

0 1,250 2,500 5,000  
 Feet

REFERENCES: USGS 7.5' TOPOGRAPHIC  
 QUADRANGLES DILLONVILLE (1985), BERNARDY (1983),  
 COLUMBIANA (1983), COLUMBIANA (1983),  
 ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO  
 AND USGS, ACCESSED 08/2020, STREAM ELIGIBILITY,  
 OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA),  
 2017.

**PROJECT LOCATION**  
  
 JEFFERSON COUNTY  
 OHIO AND BROOKE COUNTY, WEST VIRGINIA

DRAWN BY: EFJ  
 CHECKED:  
 DATE: 8/3/2020  
 APPROVED:



# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY, MAXAR (2018),  
ARCGIS ONLINE, ACCESSED 08/20/2020, WORLD  
MAPS ONLINE, ACCESSED 08/20/2020, HERE  
MAPS/INDIA, TONTO, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
OBTAINED THROUGH ESRI ARCGIS ONLINE, ACCESSED  
08/20/2020. STREAM ELIGIBILITY, OHIO ENVIRONMENTAL  
PROTECTION AGENCY (OEPA), 2017. NHD STREAMS,  
NATIONAL HYDROGRAPHY DATASET (NHD), USGS, 2018.  
WQS STREAMS, OHIO WATER QUALITY STANDARDS,  
2010.

# LEGEND

- Stream
- NHD Stream
- OH WQS Stream
- Study Area
- Ohio EPA Stream Eligibility:
  - Ineligible
  - Possibly Eligible
  - Eligible



# FIGURE 3 STREAM ELIGIBILITY MAP SHEET 1 OF 4

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:







# PROJECT LOCATION



JEFFERSON COUNTY  
OHIO AND BROOKE COUNTY, WEST VIRGINIA

REFERENCES: ESRI WORLD IMAGERY, MAXAR (2018),  
ARCGIS ONLINE, ACCESSED 08/20/2020, WORLD  
MAPS ONLINE, ACCESSED 08/20/2020, HERE  
MAPS/INDIA, TONTO, © OPENSTREETMAP  
CONTRIBUTORS, AND THE GIS USER COMMUNITY.  
OBTAINED THROUGH ESRI ARCGIS ONLINE, ACCESSED  
08/20/2020. STREAM ELIGIBILITY, OHIO ENVIRONMENTAL  
PROTECTION AGENCY (OEPA), 2017. NHD STREAMS,  
NATIONAL HYDROGRAPHY DATASET (NHD), USGS, 2018.  
WQS STREAMS, OHIO WATER QUALITY STANDARDS,  
2010.

## LEGEND

- Stream
  - NHD Stream
  - OH WQS Stream
  - Study Area
- Ohio EPA Stream Eligibility:
- Ineligible
  - Possibly Eligible
  - Eligible



## FIGURE 3 STREAM ELIGIBILITY MAP SHEET 4 OF 4

TILTONSVILLE - WINDSOR 138KV  
RATINGS INCREASE PROJECT  
AMERICAN ELECTRIC POWER

DRAWN BY: EFJ  
CHECKED:  
DATE: 8/3/2020  
APPROVED:

## **APPENDIX A**

### **Photographs**



**Photograph 1. Wetland W001-PEM-CATM2, Facing West**



**Photograph 2. Wetland W001-PEM-CAT2, Facing South**



**Photograph 3. Wetland W002-PEM-CAT1 Facing East**



**Photograph 4. Wetland W002-PEM-CAT1, Facing West**



**Photograph 5. Wetland W003-PEM-CATMOD2, Facing North**



**Photograph 6. Wetland W003-PEM-CATMOD2, Facing South**



**Photograph 7. Wetland W004-PEM-CATMOD2, Facing South**



**Photograph 8. Wetland W004-PEM-CATMOD2, Facing North**



**Photograph 9. Wetland W005-PEM-CATMOD2, Facing South**



**Photograph 10. Wetland W005-PEM-CATMOD2, Facing East**



**Photograph 11. Wetland W006-PEM-CAT2, Facing East**



**Photograph 12. Wetland W006-PEM-CAT2, Facing West**



**Photograph 13. Wetland W006-PFO-CAT2, Facing East**



**Photograph 14. Wetland W006-PFO-CAT2, Facing West**



**Photograph 15. Wetland W007-PFO-CATMOD2, Facing East**



**Photograph 16. Wetland W007-PFO-CATMOD2, Facing West**



**Photograph 17. Wetland W008-PEM-CATMOD2, Facing East**



**Photograph 18. Wetland W008-PEM-CATMOD2, Facing West**



**Photograph 19. Stream S001 (Short Creek), Upstream, Facing West**



**Photograph 20. Stream S001 (Short Creek), Downstream, Facing East**



**Photograph 21. Stream S002, Upstream, Facing Southeast**



**Photograph 22. Stream S002, Downstream, Facing Northwest**



**Photograph 23. Stream S003, Upstream, Facing East**



**Photograph 24. Stream S003, Downstream, Facing West**



**Photograph 25. Stream S004, Upstream, Facing Southeast**



**Photograph 26. Stream S004, Downstream, Facing Northwest**



**Photograph 27. Stream S005, Upstream, Facing Southeast**



**Photograph 28. Stream S005, Downstream, Facing Northwest**



**Photograph 29. Stream S006, Upstream, Facing Southeast**



**Photograph 30. Stream S006, Downstream, Facing North**



**Photograph 31. Stream S007, Upstream, Facing Northwest**



**Photograph 32. Stream S007, Downstream, Facing Southeast**



**Photograph 33. Stream S008, Upstream, Facing Northeast**



**Photograph 34. Stream S008, Downstream, Facing Southwest**



**Photograph 35. Stream S009 (Williamson Run), Upstream, Facing Northwest**



**Photograph 36. Stream S009, Downstream, Facing Southeast**



**Photograph 37. Stream S010, Upstream, Facing Northeast**



**Photograph 38. Stream S010, Downstream, Facing Southwest**



**Photograph 39. Stream S011, Upstream, Facing North**



**Photograph 40. Stream S011, Downstream, Facing South**



**Photograph 41. Stream S012 (Ohio River), Upstream, Facing North**



**Photograph 42. Stream S012 (Ohio River), Downstream, Facing South**



**Photograph 43. Stream S013, Upstream, Facing Northwest**



**Photograph 44. Stream S013, Downstream, Facing Southeast**



**Photograph 45. Stream S014, Upstream, Facing North**



**Photograph 46. Stream S014, Downstream, Facing South**



**Photograph 47. Stream S015, Upstream, Facing West**



**Photograph 48. Stream S015, Downstream, Facing Southeast**



**Photograph 49. Stream S016, Upstream, Facing South**



**Photograph 50. Stream S016, Downstream, Facing North**



**Photograph 51. Stream S017, Upstream, Facing Northwest**



**Photograph 52. Stream S017, Downstream, Facing Southeast**



**Photograph 53. Stream S018, Upstream, Facing North**



**Photograph 54. Stream S018, Downstream, Facing South**



**Photograph 55. Stream S019, Upstream, Facing North**



**Photograph 56. Stream S019, Downstream, Facing South**



**Photograph 57. Stream S020, Upstream, Facing North**



**Photograph 58. Stream S020, Downstream, Facing South**



**Photograph 59. Representative upland habitat, Facing South**



**Photograph 60. Representative upland habitat, Facing North**

## **APPENDIX B**

### **Wetland Determination Data Forms**

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor City/County: Jefferson County Sampling Date: 04/21/2020  
 Applicant/Owner: AEP State: OH Sampling Point: W001  
 Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR-N Lat: 40.185120 Long: -80.702716 Datum: NAD83  
 Soil Map Unit Name: Brookside silty clay loam, 25 to 40 percent slopes (BsE) NWI classification: PEM1A

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><b>W001-PEM-CAT2</b><br><b>Boundary open ended.</b><br><b>Mapped NWI.</b>  |  |

## HYDROLOGY

|  |  |  |
|--|--|--|
| <b>Wetland Hydrology Indicators:</b><br><u>Primary Indicators (minimum of one is required; check all that apply)</u><br><input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14)<br>_____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1)<br>_____ Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3)<br>_____ Water Marks (B1) _____ Presence of Reduced Iron (C4)<br>_____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6)<br>_____ Drift Deposits (B3) _____ Thin Muck Surface (C7)<br>_____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks)<br>_____ Iron Deposits (B5)<br>_____ Inundation Visible on Aerial Imagery (B7)<br>_____ Water-Stained Leaves (B9)<br>_____ Aquatic Fauna (B13) |  | <u>Secondary Indicators (minimum of two required)</u><br>_____ Surface Soil Cracks (B6)<br>_____ Sparsely Vegetated Concave Surface (B8)<br><input checked="" type="checkbox"/> Drainage Patterns (B10)<br>_____ Moss Trim Lines (B16)<br>_____ Dry-Season Water Table (C2)<br>_____ Crayfish Burrows (C8)<br>_____ Saturation Visible on Aerial Imagery (C9)<br>_____ Stunted or Stressed Plants (D1)<br><input checked="" type="checkbox"/> Geomorphic Position (D2)<br>_____ Shallow Aquitard (D3)<br>_____ Microtopographic Relief (D4)<br><input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <b>Field Observations:</b><br>Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3</u><br>Water Table Present? Yes _____ No _____ Depth (inches): _____<br>Saturation Present? Yes _____ No _____ Depth (inches): _____<br>(includes capillary fringe)   | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____ |  |

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

N/A

Remarks:

Adjacent to stream SOH-CDK-001.

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W001

| Tree Stratum (Plot size: <u>30' r</u> )                               | Absolute % Cover | Dominant Species? | Indicator Status |  |
|---|------------------|-------------------|------------------|--|
| 1. Absent   |                  |                   |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2.  |                  |                   |                  |  |
| 3.  |                  |                   |                  |  |
| 4.  |                  |                   |                  |  |
| 5.  |                  |                   |                  |  |
| 6.  |                  |                   |                  |  |
| 7.  |                  |                   |                  |  |
| 8.  |                  |                   |                  |  |
|   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
| 0 = Total Cover   |                  |                   |                  |  |
| <b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>               |                  |                   |                  |  |
| 1. Absent   |                  |                   |                  |  |
| 2.  |                  |                   |                  |  |
| 3.  |                  |                   |                  |  |
| 4.  |                  |                   |                  |  |
| 5.  |                  |                   |                  |  |
| 6.  |                  |                   |                  |  |
| 7.  |                  |                   |                  |  |
| 8.  |                  |                   |                  |  |
| 9.  |                  |                   |                  |  |
| 10.   |                  |                   |                  |  |
| 0 = Total Cover   |                  |                   |                  |  |
| <b>Herb Stratum (Plot size: <u>5' r</u> )</b>                         |                  |                   |                  |  |
| 1. <i>Phalaris arundinacea</i>  | 90               | Y                 | FACW             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 - Dominance Test is >50%<br><input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 2. <i>Impatiens capensis</i>  | 10               | N                 | FACW             |  |
| 3.  |                  |                   |                  |  |
| 4.  |                  |                   |                  |  |
| 5.  |                  |                   |                  |  |
| 6.  |                  |                   |                  |  |
| 7.  |                  |                   |                  |  |
| 8.  |                  |                   |                  |  |
| 9.  |                  |                   |                  |  |
| 10.   |                  |                   |                  |  |
| 11.   |                  |                   |                  |  |
| 12.   |                  |                   |                  |  |
| _____ = Total Cover   |                  |                   |                  |  |
| <b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>                  |                  |                   |                  |  |
| 1. Absent   |                  |                   |                  |  |
| 2.  |                  |                   |                  |  |
| 3.  |                  |                   |                  |  |
| 4.  |                  |                   |                  |  |
| 5.  |                  |                   |                  |  |
| 6.  |                  |                   |                  |  |
| 0 = Total Cover   |                  |                   |                  |  |
| Remarks: (Include photo numbers here or on a separate sheet.)<br>None |                  |                   |                  | <b>Definitions of Four Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vine</b> – All woody vines greater than 3.28 ft in height.<br><br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |

## SOIL

Sampling Point: W001

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

[illegible]<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>:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (**LRR N**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (**LRR N**,  
**MLRA 147, 148**)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- ☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- ☐ Umbric Surface (F13) (**MLRA 136, 122**)
- ☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- ☐ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**  
☐ Coast Prairie Redox (A16)  
**(MLRA 147, 148)**  
☐ Piedmont Floodplain Soils (F19)  
**(MLRA 136, 147)**  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ✓ No       

Remarks:

None.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor City/County: Jefferson County Sampling Date: 04/21/2020  
Applicant/Owner: AEP State: OH Sampling Point: W002  
Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 10  
Subregion (LRR or MLRA): LRR-N Lat: 40.184547 Long: -80.703037 Datum: NAD83  
Soil Map Unit Name: Brookside silty clay loam, 25 to 40 percent slopes (BsE) NWI classification: None  
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>W002-PEM-CAT1<br>Open existing ROW.  |  |

## HYDROLOGY

| Wetland Hydrology Indicators:  |  | Secondary Indicators (minimum of two required)              |
|--|--|---|
| Primary Indicators (minimum of one is required; check all that apply)  |  | _____ Surface Soil Cracks (B6)                              |
| <input checked="" type="checkbox"/> Surface Water (A1)   | _____ True Aquatic Plants (B14)  | _____ Sparsely Vegetated Concave Surface (B8)               |
| <input checked="" type="checkbox"/> High Water Table (A2)  | _____ Hydrogen Sulfide Odor (C1)   | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3)  | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | _____ Moss Trim Lines (B16)                                 |
| _____ Water Marks (B1)   | _____ Presence of Reduced Iron (C4)  | _____ Dry-Season Water Table (C2)                           |
| _____ Sediment Deposits (B2)   | _____ Recent Iron Reduction in Tilled Soils (C6)                               | _____ Crayfish Burrows (C8)                                 |
| _____ Drift Deposits (B3)  | _____ Thin Muck Surface (C7)   | _____ Saturation Visible on Aerial Imagery (C9)             |
| _____ Algal Mat or Crust (B4)  | _____ Other (Explain in Remarks)   | _____ Stunted or Stressed Plants (D1)                       |
| _____ Iron Deposits (B5)   |  | _____ Geomorphic Position (D2)                              |
| _____ Inundation Visible on Aerial Imagery (B7)  |  | _____ Shallow Aquitard (D3)                                 |
| _____ Water-Stained Leaves (B9)  |  | _____ Microtopographic Relief (D4)                          |
| _____ Aquatic Fauna (B13)  |  | <input checked="" type="checkbox"/> FAC-Neutral Test (D5)   |
| Field Observations:  |  |   |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u>                             |  |   |
| Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>                               |  |   |
| Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u><br>(includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____    |   |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:<br>N/A            |  |   |
| Remarks:<br>Fed by residential drainage tile.<br>Adjacent to S001.   |  |   |

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W002

| Tree Stratum (Plot size: <u>30' r</u> )          | Absolute % Cover | Dominant Species? | Indicator Status |
|--|------------------|-------------------|------------------|
| 1. Absent  |                  |                   |                  |
| 2.   |                  |                   |                  |
| 3.   |                  |                   |                  |
| 4.   |                  |                   |                  |
| 5.   |                  |                   |                  |
| 6.   |                  |                   |                  |
| 7.   |                  |                   |                  |
| 8.   |                  |                   |                  |
|  | 0                | = Total Cover     |                  |
| Sapling/Shrub Stratum (Plot size: <u>15' r</u> ) | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. Sambucus nigra                                | 10               | Y                 | FAC              |
| 2. Rhus typhina                                  | 10               | Y                 | UPL              |
| 3.   |                  |                   |                  |
| 4.   |                  |                   |                  |
| 5.   |                  |                   |                  |
| 6.   |                  |                   |                  |
| 7.   |                  |                   |                  |
| 8.   |                  |                   |                  |
| 9.   |                  |                   |                  |
| 10.  |                  |                   |                  |
|  | 20               | = Total Cover     |                  |
| Herb Stratum (Plot size: <u>5' r</u> )           | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. Impatiens capensis                            | 20               | Y                 | FACW             |
| 2. Typha latifolia                               | 20               | Y                 | OBL              |
| 3. Poa sp*                                       | 20*              | *                 | *                |
| 4. Rumex crispus                                 | 10               | N                 | FAC              |
| 5. Verbesina alternifolia                        | 10               | N                 | FAC              |
| 6. Vernonia noveboracensis                       | 10               | N                 | FACW             |
| 7. Carex vulpinoidea                             | 10               | N                 | OBL              |
| 8.   |                  |                   |                  |
| 9.   |                  |                   |                  |
| 10.  |                  |                   |                  |
| 11.  |                  |                   |                  |
| 12.  |                  |                   |                  |
|  | 80               | = Total Cover     |                  |
| Woody Vine Stratum (Plot size: <u>30' r</u> )    | Absolute % Cover | Dominant Species? | Indicator Status |
| 1. Absent  |                  |                   |                  |
| 2.   |                  |                   |                  |
| 3.   |                  |                   |                  |
| 4.   |                  |                   |                  |
| 5.   |                  |                   |                  |
| 6.   |                  |                   |                  |
|  | 0                | = Total Cover     |                  |

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (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

☒ 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.

**Definitions of Four Vegetation Strata:**

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

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

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

\*Species not identified beyond genus level have been omitted from dominance and prevalence index calculations.

## SOIL

Sampling Point: W002

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

[illegible]<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>:

- \_\_\_ Histosol (A1)
- \_\_\_ Histic Epipedon (A2)
- \_\_\_ Black Histic (A3)
- \_\_\_ Hydrogen Sulfide (A4)
- \_\_\_ Stratified Layers (A5)
- \_\_\_ 2 cm Muck (A10) (**LRR N**)
- \_\_\_ Depleted Below Dark Surface (A11)
- \_\_\_ Thick Dark Surface (A12)
- \_\_\_ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- \_\_\_ Sandy Gleyed Matrix (S4)
- \_\_\_ Sandy Redox (S5)
- \_\_\_ Stripped Matrix (S6)

- \_\_\_ Dark Surface (S7)
- \_\_\_ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- \_\_\_ Thin Dark Surface (S9) (**MLRA 147, 148**)
- \_\_\_ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- \_\_\_ Redox Dark Surface (F6)
- \_\_\_ Depleted Dark Surface (F7)
- \_\_\_ Redox Depressions (F8)
- \_\_\_ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- \_\_\_ Umbria Surface (F13) (**MLRA 136, 122**)
- \_\_\_ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- \_\_\_ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**  
☐ Coast Prairie Redox (A16)  
**(MLRA 147, 148)**  
☐ Piedmont Floodplain Soils (F19)  
**(MLRA 136, 147)**  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

## Restrictive Layer (if observed):

Type: None

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

None.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor City/County: Jefferson County Sampling Date: 04/23/2020  
 Applicant/Owner: AEP State: OH Sampling Point: W003  
 Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR-N Lat: 40.198471 Long: -80.695257 Datum: NAD83  
 Soil Map Unit Name: Morristown channery silty clay loam, 8 to 25 percent slopes, unreclaimed, highwall (Mwg6D) NWI classification: None

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br><b>W003-PEM-CATMOD2</b><br>Man-made strip mine bench; soil disturbed.<br>Severe acid mine drainage.  |  |

## HYDROLOGY

|   |  |  |
|---|--|--|
| <b>Wetland Hydrology Indicators:</b><br><u>Primary Indicators (minimum of one is required; check all that apply)</u><br><input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14)<br><input type="checkbox"/> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3)<br><input type="checkbox"/> Water Marks (B1) _____ Presence of Reduced Iron (C4)<br><input type="checkbox"/> Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6)<br><input type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7)<br><input type="checkbox"/> Algal Mat or Crust (B4) _____ Other (Explain in Remarks)<br><input checked="" type="checkbox"/> Iron Deposits (B5) _____<br><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Water-Stained Leaves (B9)<br><input type="checkbox"/> Aquatic Fauna (B13) |  | <u>Secondary Indicators (minimum of two required)</u><br><input type="checkbox"/> Surface Soil Cracks (B6)<br><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Moss Trim Lines (B16)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Crayfish Burrows (C8)<br><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)<br><input type="checkbox"/> Stunted or Stressed Plants (D1)<br><input checked="" type="checkbox"/> Geomorphic Position (D2)<br><input type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> Microtopographic Relief (D4)<br><input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <b>Field Observations:</b><br>Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12</u><br>Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____<br>Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____<br>(includes capillary fringe)   |  | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____   |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:<br><b>N/A</b>  |  |  |
| Remarks:<br><b>Adjacent.</b>  |  |  |

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W003

| Tree Stratum (Plot size: <u>30' r</u> )          | Absolute % Cover | Dominant Species? | Indicator Status | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>6</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3</u> (A/B)  |
|--|------------------|-------------------|------------------|---|
| 1. Absent  |                  |                   |                  |   |
| 2.   |                  |                   |                  |   |
| 3.   |                  |                   |                  |   |
| 4.   |                  |                   |                  |   |
| 5.   |                  |                   |                  |   |
| 6.   |                  |                   |                  |   |
| 7.   |                  |                   |                  |   |
| 8.   |                  |                   |                  |   |
| 0 = Total Cover                                  |                  |                   |                  |   |
| Sapling/Shrub Stratum (Plot size: <u>15' r</u> ) |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____   |
| 1. Salix nigra                                   | 10               | Y                 | FAC              |   |
| 2. Acer negundo                                  | 5                | Y                 | FAC              |   |
| 3. Lonicera morrowii                             | 5                | Y                 | FACU             |   |
| 4.   |                  |                   |                  |   |
| 5.   |                  |                   |                  |   |
| 6.   |                  |                   |                  |   |
| 7.   |                  |                   |                  |   |
| 8.   |                  |                   |                  |   |
| 9.   |                  |                   |                  |   |
| 10.  |                  |                   |                  |   |
| 20 = Total Cover                                 |                  |                   |                  |   |
| Herb Stratum (Plot size: <u>5' r</u> )           |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  |
| 1. Onoclea sensibilis                            | 10               | Y                 | FACW             |   |
| 2. Glyceria striata                              | 10               | Y                 | OBL              |   |
| 3. Scirpus cyperinus                             | 5                | Y                 | FACW             |   |
| 4.   |                  |                   |                  |   |
| 5.   |                  |                   |                  |   |
| 6.   |                  |                   |                  |   |
| 7.   |                  |                   |                  |   |
| 8.   |                  |                   |                  |   |
| 9.   |                  |                   |                  |   |
| 10.  |                  |                   |                  |   |
| 11.  |                  |                   |                  |   |
| 12.  |                  |                   |                  |   |
| 25 = Total Cover                                 |                  |                   |                  |   |
| Woody Vine Stratum (Plot size: <u>30' r</u> )    |                  |                   |                  | <b>Definitions of Four Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vine</b> – All woody vines greater than 3.28 ft in height.<br><br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____ |
| 1. Absent  |                  |                   |                  |   |
| 2.   |                  |                   |                  |   |
| 3.   |                  |                   |                  |   |
| 4.   |                  |                   |                  |   |
| 5.   |                  |                   |                  |   |
| 6.   |                  |                   |                  |   |
| 0 = Total Cover                                  |                  |                   |                  |   |

Remarks: (Include photo numbers here or on a separate sheet.)  
Open water: 75% of plot.

## SOIL

Sampling Point: W003

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

[illegible]

<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>:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☒ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (**LRR N**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (**LRR N**,  
**MLRA 147, 148**)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- \_\_\_ Dark Surface (S7)
- \_\_\_ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- \_\_\_ Thin Dark Surface (S9) (**MLRA 147, 148**)
- \_\_\_ Loamy Gleyed Matrix (F2)
- \_\_\_ Depleted Matrix (F3)
- \_\_\_ Redox Dark Surface (F6)
- \_\_\_ Depleted Dark Surface (F7)
- \_\_\_ Redox Depressions (F8)
- \_\_\_ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- \_\_\_ Umbric Surface (F13) (**MLRA 136, 122**)
- \_\_\_ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- \_\_\_ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**  
☐ Coast Prairie Redox (A16)  
**(MLRA 147, 148)**  
☐ Piedmont Floodplain Soils (F19)  
**(MLRA 136, 147)**  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

## Restrictive Layer (if observed):

Type: None

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ✓ No       

Remarks:

None.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor City/County: Jefferson County Sampling Date: 04/23/2020  
 Applicant/Owner: AEP State: OH Sampling Point: W004  
 Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Bench Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): LRR-N Lat: 40.197887 Long: -80.695859 Datum: NAD83  
 Soil Map Unit Name: Morristown channery silty clay loam, 25 to 70 percent slopes, unreclaimed, highwall (Mwg6F) NWI classification: None

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

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

|   |  |
|---|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____  | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____             |  |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____       |  |
| Remarks:<br><b>W004-PEM-CATMOD2</b><br>Possible old slip area.<br>Soil disturbed. |  |

## HYDROLOGY

|  |   |   |  |
|--|---|---|--|
| <b>Wetland Hydrology Indicators:</b>   |   | <b>Secondary Indicators (minimum of two required)</b>                       |  |
| <u>Primary Indicators (minimum of one is required; check all that apply)</u> |   |   |  |
| <input checked="" type="checkbox"/> Surface Water (A1)                       | <input type="checkbox"/> True Aquatic Plants (B14)                  | <input type="checkbox"/> Surface Soil Cracks (B6)                           |  |
| <input checked="" type="checkbox"/> High Water Table (A2)                    | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)            |  |
| <input checked="" type="checkbox"/> Saturation (A3)                          | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Drainage Patterns (B10)                            |  |
| <input type="checkbox"/> Water Marks (B1)                                    | <input type="checkbox"/> Presence of Reduced Iron (C4)              | <input type="checkbox"/> Moss Trim Lines (B16)                              |  |
| <input type="checkbox"/> Sediment Deposits (B2)                              | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Dry-Season Water Table (C2)                        |  |
| <input type="checkbox"/> Drift Deposits (B3)                                 | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input type="checkbox"/> Crayfish Burrows (C8)                              |  |
| <input type="checkbox"/> Algal Mat or Crust (B4)                             | <input type="checkbox"/> Other (Explain in Remarks)                 | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)          |  |
| <input checked="" type="checkbox"/> Iron Deposits (B5)                       |   | <input type="checkbox"/> Stunted or Stressed Plants (D1)                    |  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)           |   | <input checked="" type="checkbox"/> Geomorphic Position (D2)                |  |
| <input type="checkbox"/> Water-Stained Leaves (B9)                           |   | <input type="checkbox"/> Shallow Aquitard (D3)                              |  |
| <input type="checkbox"/> Aquatic Fauna (B13)                                 |   | <input type="checkbox"/> Microtopographic Relief (D4)                       |  |
|  |   | <input type="checkbox"/> FAC-Neutral Test (D5)                              |  |
| <b>Field Observations:</b>   |   |   |  |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No _____      | Depth (inches): <u>&lt;1</u>  | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |  |
| Water Table Present? Yes <input checked="" type="checkbox"/> No _____        | Depth (inches): <u>11</u>   |   |  |
| Saturation Present? Yes <input checked="" type="checkbox"/> No _____         | Depth (inches): <u>0</u><br>(includes capillary fringe)             |   |  |

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

N/A

Remarks:

Seep in existing ROW.

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W004

| Tree Stratum (Plot size: <u>30' r</u> )                 | Absolute % Cover | Dominant Species? | Indicator Status            | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>2</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
|---|------------------|-------------------|-----------------------------|--|
| 1. Absent   |                  |                   |                             |  |
| 2.  |                  |                   |                             |  |
| 3.  |                  |                   |                             |  |
| 4.  |                  |                   |                             |  |
| 5.  |                  |                   |                             |  |
| 6.  |                  |                   |                             |  |
| 7.  |                  |                   |                             |  |
| 8.  |                  |                   |                             |  |
|   |                  |                   | <u>0</u> = Total Cover      | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
|   |                  |                   |                             |  |
| <b>Sapling/Shrub Stratum</b> (Plot size: <u>15' r</u> ) |                  |                   |                             | <b>Hydrophytic Vegetation Indicators:</b><br>___ 1 - Rapid Test for Hydrophytic Vegetation<br>✓ 2 - Dominance Test is >50%<br>___ 3 - Prevalence Index is ≤3.0 <sup>1</sup><br>___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br>___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 1. Absent   |                  |                   |                             |  |
| 2.  |                  |                   |                             |  |
| 3.  |                  |                   |                             |  |
| 4.  |                  |                   |                             |  |
| 5.  |                  |                   |                             |  |
| 6.  |                  |                   |                             |  |
| 7.  |                  |                   |                             |  |
| 8.  |                  |                   |                             |  |
| 9.  |                  |                   |                             |  |
| 10.   |                  |                   |                             |  |
|   |                  |                   | <u>0</u> = Total Cover      | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.   |
|   |                  |                   |                             |  |
| <b>Herb Stratum</b> (Plot size: <u>5' r</u> )           |                  |                   |                             | <b>Definitions of Four Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vine</b> – All woody vines greater than 3.28 ft in height. |
| 1. Equisetum arvense                                    | 70               | Y                 | FAC                         |  |
| 2. Typha latifolia                                      | 20               | Y                 | OBL                         |  |
| 3. Epilobium hirsutum                                   | 10               | N                 | FACW                        |  |
| 4.  |                  |                   |                             |  |
| 5.  |                  |                   |                             |  |
| 6.  |                  |                   |                             |  |
| 7.  |                  |                   |                             |  |
| 8.  |                  |                   |                             |  |
| 9.  |                  |                   |                             |  |
| 10.   |                  |                   |                             |  |
| 11.   |                  |                   |                             |  |
| 12.   |                  |                   |                             |  |
|   |                  |                   | <u>      </u> = Total Cover | <b>Hydrophytic Vegetation Present?</b> Yes <u>✓</u> No <u>      </u>   |
|   |                  |                   |                             |  |
| <b>Woody Vine Stratum</b> (Plot size: <u>30' r</u> )    |                  |                   |                             |  |
| 1. Absent   |                  |                   |                             |  |
| 2.  |                  |                   |                             |  |
| 3.  |                  |                   |                             |  |
| 4.  |                  |                   |                             |  |
| 5.  |                  |                   |                             |  |
| 6.  |                  |                   |                             |  |
|   |                  |                   | <u>0</u> = Total Cover      |  |

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

None

## SOIL

Sampling Point: W004

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

| Depth<br>(inches) | Matrix        |    | Redox Features |    |                   |                  | Texture | Remarks                   |
|-------------------|---------------|----|----------------|----|-------------------|------------------|---------|---------------------------|
|                   | Color (moist) | %  | Color (moist)  | %  | Type <sup>1</sup> | Loc <sup>2</sup> |         |                           |
| 0-4               | 2.5Y 4/2      | 70 | 10YR 5/4       | 20 | C                 | M                | SL      | Gravel and coal fragments |
|                   |               |    | 7.5YR 4/6      | 10 | C                 | M                |         |                           |
| 4-16              | 2.5Y 4/1      | 65 | 10YR 5/4       | 20 | C                 | M                | SCL     | Gravel and coal fragments |
|                   |               |    | 7.5YR 4/6      | 10 | C                 | M                |         |                           |
|                   |               |    | 7.5YR 3/4      | 5  | C                 | M                |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |
|                   |               |    |                |    |                   |                  |         |                           |

<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:**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (**LRR N**)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)  
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)  
☐ Loamy Gleyed Matrix (F2)  
☒ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)  
☐ Umbric Surface (F13) (**MLRA 136, 122**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 148**)  
☐ Red Parent Material (F21) (**MLRA 127, 147**)

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

- ☐ 2 cm Muck (A10) (**MLRA 147**)  
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)  
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: None  
 Depth (inches): -

Hydric Soil Present? Yes ☒ No ☐

Remarks:

None.

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor City/County: Jefferson County Sampling Date: 04/23/2020  
Applicant/Owner: AEP State: OH Sampling Point: W005  
Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1  
Subregion (LRR or MLRA): LRR-N Lat: 40.187258 Long: -80.701982 Datum: NAD83  
Soil Map Unit Name: Nolin silt loam, 0 to 3 percent slopes, occasionally flooded (No) NWI classification: PEM1Ch/PEM1/FO5Fh  
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No \_\_\_\_\_ (If no, explain in Remarks.)  
Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No \_\_\_\_\_  
Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____<br>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____<br>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Remarks:<br>W005-PEM-CATMOD2<br>Open existing electric ROW next to road.<br>Boundary open ended.<br>Mapped NWI wetland.  |  |

### HYDROLOGY

| Wetland Hydrology Indicators:  |   | Secondary Indicators (minimum of two required)                   |
|--|---|--|
| Primary Indicators (minimum of one is required; check all that apply)  |   | _____ Surface Soil Cracks (B6)                                   |
| <input checked="" type="checkbox"/> Surface Water (A1)   | _____ True Aquatic Plants (B14)   | _____ Sparsely Vegetated Concave Surface (B8)                    |
| <input checked="" type="checkbox"/> High Water Table (A2)  | _____ Hydrogen Sulfide Odor (C1)  | _____ Drainage Patterns (B10)                                    |
| <input checked="" type="checkbox"/> Saturation (A3)  | _____ Oxidized Rhizospheres on Living Roots (C3)                            | _____ Moss Trim Lines (B16)                                      |
| _____ Water Marks (B1)   | _____ Presence of Reduced Iron (C4)   | _____ Dry-Season Water Table (C2)                                |
| _____ Sediment Deposits (B2)   | _____ Recent Iron Reduction in Tilled Soils (C6)                            | _____ Crayfish Burrows (C8)                                      |
| _____ Drift Deposits (B3)  | _____ Thin Muck Surface (C7)  | _____ Saturation Visible on Aerial Imagery (C9)                  |
| _____ Algal Mat or Crust (B4)  | _____ Other (Explain in Remarks)  | _____ Stunted or Stressed Plants (D1)                            |
| <input checked="" type="checkbox"/> Iron Deposits (B5)   |   | <input checked="" type="checkbox"/> Geomorphic Position (D2)     |
| _____ Inundation Visible on Aerial Imagery (B7)  |   | _____ Shallow Aquitard (D3)                                      |
| _____ Water-Stained Leaves (B9)  |   | <input checked="" type="checkbox"/> Microtopographic Relief (D4) |
| _____ Aquatic Fauna (B13)  |   | <input checked="" type="checkbox"/> FAC-Neutral Test (D5)        |
| Field Observations:  |   |  |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>2</u>                             |   |  |
| Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u>                               |   |  |
| Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0</u><br>(includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |  |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:<br>N/A            |   |  |
| Remarks:<br>Adjacent to SOH-CDK-001.<br>Microtopographic relief: Carex vulpinoidea tussocks.                                 |   |  |

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W005

| Tree Stratum (Plot size: <u>30' r</u> ) | Absolute % Cover | Dominant Species? | Indicator Status |   |
|---|------------------|-------------------|------------------|---|
| 1. Absent                               |                  |                   |                  | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)   |
| 2.                                      |                  |                   |                  |   |
| 3.                                      |                  |                   |                  |   |
| 4.                                      |                  |                   |                  |   |
| 5.                                      |                  |                   |                  |   |
| 6.                                      |                  |                   |                  |   |
| 7.                                      |                  |                   |                  |   |
| 8.                                      |                  |                   |                  |   |
|   |                  |                   |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 - Dominance Test is >50%<br><input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  | <b>Definitions of Four Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vine</b> – All woody vines greater than 3.28 ft in height.  |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>  |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  | Remarks: (Include photo numbers here or on a separate sheet.)<br><br>None   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |
|   |                  |                   |                  |   |

## SOIL

Sampling Point: W005

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

[illegible]<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>:

- \_\_\_ Histosol (A1)
- \_\_\_ Histic Epipedon (A2)
- \_\_\_ Black Histic (A3)
- \_\_\_ Hydrogen Sulfide (A4)
- \_\_\_ Stratified Layers (A5)
- \_\_\_ 2 cm Muck (A10) (**LRR N**)
- \_\_\_ Depleted Below Dark Surface (A11)
- \_\_\_ Thick Dark Surface (A12)
- \_\_\_ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- \_\_\_ Sandy Gleyed Matrix (S4)
- \_\_\_ Sandy Redox (S5)
- \_\_\_ Stripped Matrix (S6)

- \_\_\_ Dark Surface (S7)
- \_\_\_ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- \_\_\_ Thin Dark Surface (S9) (**MLRA 147, 148**)
- \_\_\_ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- \_\_\_ Redox Dark Surface (F6)
- \_\_\_ Depleted Dark Surface (F7)
- \_\_\_ Redox Depressions (F8)
- \_\_\_ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- \_\_\_ Umbritic Surface (F13) (**MLRA 136, 122**)
- \_\_\_ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- \_\_\_ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**  
☐ Coast Prairie Redox (A16)  
**(MLRA 147, 148)**  
☐ Piedmont Floodplain Soils (F19)  
**(MLRA 136, 147)**  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

## Restrictive Layer (if observed):

Type: None

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

None.

# WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltsville to Windsor City/County: Jefferson County Sampling Date: 04/23/2020  
 Applicant/Owner: AEP State: OH Sampling Point: W006  
 Investigator(s): CDK/JJP Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): <1  
 Subregion (LRR or MLRA): LRR-N Lat: 40.208206 Long: -80.668783 Datum: NAD83  
 Soil Map Unit Name: Udorthents-Urban land complex (Ud) NWI classification: PFO1Ch/PEM1Ch

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

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

|  |  |
|--|--|
| Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____   | Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____ |
| Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____  |  |
| Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____  |  |
| Remarks:<br>W006-PEM-CAT2 section of PEM/PFO complex.<br>Situated between existing road and Ohio River.<br>Boundary open ended.<br>Mapped NWI wetland. |  |

## HYDROLOGY

| Wetland Hydrology Indicators:   |   | Secondary Indicators (minimum of two required)                              |
|---|---|---|
| Primary Indicators (minimum of one is required; check all that apply)   |   |   |
| <input checked="" type="checkbox"/> Surface Water (A1)                  | <input type="checkbox"/> True Aquatic Plants (B14)                  | <input type="checkbox"/> Surface Soil Cracks (B6)                           |
| <input checked="" type="checkbox"/> High Water Table (A2)               | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)            |
| <input checked="" type="checkbox"/> Saturation (A3)                     | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Drainage Patterns (B10)                            |
| <input type="checkbox"/> Water Marks (B1)                               | <input type="checkbox"/> Presence of Reduced Iron (C4)              | <input type="checkbox"/> Moss Trim Lines (B16)                              |
| <input type="checkbox"/> Sediment Deposits (B2)                         | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Dry-Season Water Table (C2)                        |
| <input type="checkbox"/> Drift Deposits (B3)                            | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input type="checkbox"/> Crayfish Burrows (C8)                              |
| <input type="checkbox"/> Algal Mat or Crust (B4)                        | <input type="checkbox"/> Other (Explain in Remarks)                 | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)          |
| <input type="checkbox"/> Iron Deposits (B5)                             |   | <input type="checkbox"/> Stunted or Stressed Plants (D1)                    |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)      |   | <input checked="" type="checkbox"/> Geomorphic Position (D2)                |
| <input type="checkbox"/> Water-Stained Leaves (B9)                      |   | <input type="checkbox"/> Shallow Aquitard (D3)                              |
| <input type="checkbox"/> Aquatic Fauna (B13)                            |   | <input type="checkbox"/> Microtopographic Relief (D4)                       |
|   |   | <input checked="" type="checkbox"/> FAC-Neutral Test (D5)                   |
| Field Observations:   |   |   |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ | Depth (inches): <u>12</u>   | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ |
| Water Table Present? Yes <input checked="" type="checkbox"/> No _____   | Depth (inches): <u>0</u>  |   |
| Saturation Present? Yes <input checked="" type="checkbox"/> No _____    | Depth (inches): <u>0</u>  |   |
| (includes capillary fringe)   |   |   |

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

N/A

Remarks:

Adjacent to S012.

# VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W006

| Tree Stratum (Plot size: <u>30' r</u> )                       | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status |  |
|---|---------------------|----------------------|---------------------|--|
| 1. Absent   |                     |                      |                     | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)<br><br>Total Number of Dominant Species Across All Strata: <u>1</u> (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)  |
| 2.  |                     |                      |                     |  |
| 3.  |                     |                      |                     |  |
| 4.  |                     |                      |                     |  |
| 5.  |                     |                      |                     |  |
| 6.  |                     |                      |                     |  |
| 7.  |                     |                      |                     |  |
| 8.  |                     |                      |                     |  |
|   |                     |                      |                     | <b>Prevalence Index worksheet:</b><br>Total % Cover of: _____ Multiply by: _____<br>OBL species _____ x 1 = _____<br>FACW species _____ x 2 = _____<br>FAC species _____ x 3 = _____<br>FACU species _____ x 4 = _____<br>UPL species _____ x 5 = _____<br>Column Totals: _____ (A) _____ (B)<br><br>Prevalence Index = B/A = _____  |
|   |                     |                      |                     | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation<br><input checked="" type="checkbox"/> 2 - Dominance Test is >50%<br><input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup><br><input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)              |
|   |                     |                      |                     |  |
|   |                     |                      |                     | <b>Definitions of Four Vegetation Strata:</b><br><br><b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><br><b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><br><b>Woody vine</b> – All woody vines greater than 3.28 ft in height. |
|   |                     |                      |                     |  |
|   |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |
|   |                     |                      |                     |  |
| Remarks: (Include photo numbers here or on a separate sheet.) |                     |                      |                     |  |
| None  |                     |                      |                     |  |

## SOIL

Sampling Point: W006

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

[illegible]<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>:

- \_\_\_ Histosol (A1)
- \_\_\_ Histic Epipedon (A2)
- \_\_\_ Black Histic (A3)
- \_\_\_ Hydrogen Sulfide (A4)
- \_\_\_ Stratified Layers (A5)
- \_\_\_ 2 cm Muck (A10) (**LRR N**)
- \_\_\_ Depleted Below Dark Surface (A11)
- \_\_\_ Thick Dark Surface (A12)
- \_\_\_ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- \_\_\_ Sandy Gleyed Matrix (S4)
- \_\_\_ Sandy Redox (S5)
- \_\_\_ Stripped Matrix (S6)

- \_\_\_ Dark Surface (S7)
- \_\_\_ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- \_\_\_ Thin Dark Surface (S9) (**MLRA 147, 148**)
- \_\_\_ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- \_\_\_ Redox Dark Surface (F6)
- \_\_\_ Depleted Dark Surface (F7)
- \_\_\_ Redox Depressions (F8)
- \_\_\_ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- \_\_\_ Umbritic Surface (F13) (**MLRA 136, 122**)
- \_\_\_ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- \_\_\_ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**  
☐ Coast Prairie Redox (A16)  
**(MLRA 147, 148)**  
☐ Piedmont Floodplain Soils (F19)  
**(MLRA 136, 147)**  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

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

## Restrictive Layer (if observed):

Type: None

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

None.

**This foregoing document was electronically filed with the Public Utilities**

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**in**

**Case No(s). 20-1735-EL-BLN**

Summary: Notice Notification Application for the Windsor Junction-Tiltonsville 138 kV Conductor Project- PART A electronically filed by Tanner Wolfram on behalf of Ohio Power Company