LETTER OF NOTIFICATION FOR WINDSOR EXTENSION (OH) 138-kV TRANSMISSION LINE PROJECT



BOUNDLESS ENERGY"

PUCO Case No. 21-0173-EL-BLN

Submitted to:

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

Submitted by:

AEP Ohio Transmission Company, Inc.

LETTER OF NOTIFICATION

AEP Ohio Transmission Company, Inc. Windsor Extension (OH) 138 kV Transmission Line Project

4906-6-05

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

4906-6-05(B) General Information

B(1) Project Description

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

The Company proposes to construct the Windsor Extension (OH) 138-kilovolt ("kV") Transmission Line Project (the "Project") in Warren Township, Jefferson County, Ohio. The Project consists of rebuilding approximately 0.4 mile of the existing Windsor-Canton 138-kV Transmission Line between the existing Windsor Junction-Tiltonsville 138-kV Transmission Line and the Ohio River. The Project is planned to be rebuilt approximately 115 feet south of the existing Windsor-Canton 138-kV centerline and renamed the Windsor Extension (OH) 138-kV Transmission Line, which is the subject of this filing. The rebuilt line will also cross the Ohio River and continue approximately 0.4 mile to FirstEnergy's Windsor Station, located in Brooke County, West Virginia.

The Project is part of the overall Tiltonsville-Windsor 138-kV Upgrade Project. In association with this Project, Ohio Power Company filed a separate application for the Windsor Junction-Tiltonsville 138 kV Conductor Project under separate cover (Case No. 20-1735-EL-BLN).

The Project will use existing right-of-way ("ROW"), but will require additional ROW easements, and is planned to be constructed with new steel lattice tower structures and a two-pole structure. The location of the Project is shown on Map 1 in Appendix A.

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

(1) New construction, extension or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:

(b) Line(s) greater than 0.2 miles in length but not greater than two miles in length

The Project has been assigned PUCO Case No. 21-0173-EL-BLN.

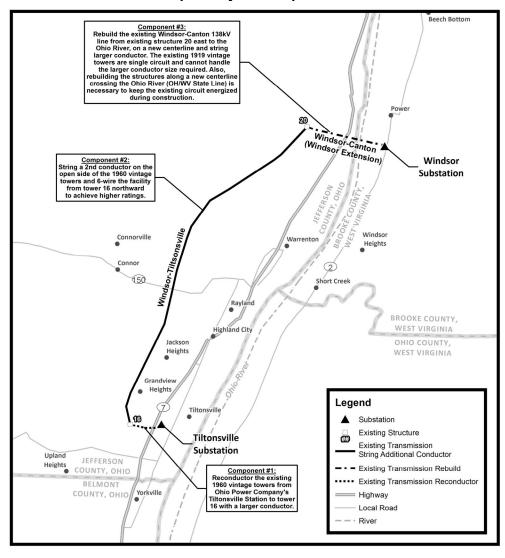
B(2) Statement of Need

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 138-kV 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 high ratings; and
- 3) Rebuild the existing Windsor-Canton 138-kV 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 138-kV 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.



Map 1 Project Components

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.

Figure 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 OH-WV, 1997). Figure 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 unable to be constructed along the existing Windsor-Canton 138-kV transmission line centerline, as the existing line cannot be taken out-of-service. Additionally, the existing structures from 1919 are not able to support the larger conductor size required for the Project. Therefore, the Project is required to be constructed offset from the existing transmission line. An alternative route to the north of the existing Windsor-Canton 138-kV transmission line was not feasible because of existing adjacent electric transmission lines and buried pipeline. Therefore, the Project's alignment south of the existing Windsor-Canton 138-kV transmission line was the most appropriate solution for the Project.

There are no known residences, commercial/industrial buildings, barns, garages, or other aboveground structures located within 1,000 feet of the proposed Windsor Extension (OH) 138-kV transmission line. In addition, by overlapping the new ROW with the existing, the amount of tree clearing required to maintain the proposed 155-foot-wide ROW is reduced. Should a complete greenfield route be pursued, the amount of tree clearing is anticipated to increase above that required for the Project. Finally, the Project is short, efficient, direct, and represents the most suitable location and most appropriate solution for meeting the Company's needs in the area.

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 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 ROW 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 October 2021, with an in-service date of March 2022.

B(7) Area Map

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

Figure 1 included in Appendix A identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map (Tiltonsville OH-WV, 1997). Figure 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. Take 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 7 miles, take the exit for County Road 80, then turn left onto County Road 80 and continue 0.2 mile. Turn right onto County Road 17-A and continue 1.6 miles to a point where the Project crosses County Road 17-A. The coordinates of this location are latitude 40.207732, longitude -80.668051.

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.

Property Parcel Number	Easement Agreement/Option Obtained (Yes/No)
41-01605-000	No
41-02243-001	Yes
41-05058-000	No
41-05059-000	No
41-02191-000	No
41-02243-000	No
41-02191-000	No
41-02243-000	No

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 Extension (OH) 138-KV Transmission Line is planned to include:

Voltage: 138 kV

Conductors: 595 kCM DRAKE ACSS 26/7 Static Wire: (1) 96 FIBER OPGW .646"

Insulators: CERAMIC ROW Width: 155 feet

Structure Types: (2) steel dead end towers with pier foundations and (1) steel two pole dead

end with pier foundation

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

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

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 \$2,500,000 (Class 4). Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company Inc.'s FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Economic Impacts

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

B(10)(a) Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project is located in Warren Township, Jefferson County, Ohio. Land use in the Project area consists of wooded slopes and valleys, existing transmission line ROWs, and transportation corridors (i.e., Norfolk Southern Corporation railroad, Wheeling and Lake Erie Railway Company, and State Route OH-7). Impacts to the visual aesthetics of State Route OH-7, a Scenic Byway (Ohio River Scenic Byway), are not anticipated to change because the Project proposes to rebuild the existing transmission line in the same area. The Project is located on the southern side of multiple overhead transmission line ROWs, which cross the Ohio River.

There are no known residences within 1,000 feet of the Project. Approximately 750 feet south of proposed Structure 2 are industrial impoundments. Impacts to these impoundments are not anticipated to occur as a result of the Project. Wetlands and streams are located within the planned ROW, but the Project anticipates spanning these aquatic resources and thus no impacts are expected. The Project also crosses the Ohio River, a traditionally navigable waterway. The Ohio River will be aerially spanned with no planned disturbance to the bed and banks. The Project is not anticipated to alter the recreational, commercial, or industrial use of the Ohio River. The Project will require approximately 6.4 acres of tree clearing, which abuts and partially overlaps existing cleared ROW.

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 February 8, 2021, the parcels crossed by the Project are not registered as Agricultural District land. Additionally, the Project does not cross active agricultural row crop land (Appendix A, Map 2).

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. One previously identified archaeological resource is located south of the Project in the floodplain terrace of the Ohio River's west bank (*An Archaeological Atlas of Ohio; Mills, 1914*). The identified archaeological resource is located outside of the Project area and is not anticipated to be impacted. A review of the National Register of Historic Places (NRHP) files and Ohio Historic Preservation Office consensus determination of eligibility was completed. There were no NRHP properties or Determination of Eligibility resources located within the Project area or its study area. The literature review conducted for this Project did not identify previously recorded archaeological or architectural resources or surveys within the

Project area or its study area. The archaeological field investigations for this Project were primarily visual inspections as steep slopes and disturbances were prevalent. The archaeological field investigations for this Project did not result in the identification of cultural materials. Besides the existing lattice structures and associated power infrastructure, there are no history/architecture resources within 1,000 feet of the Project. The Ohio Historic Preservation Office ("SHPO") agreed that no further archaeological and architectural survey is 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 General Permit OHC000005. 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 waters during storm events. Additionally, the Project will require a stormwater permit from Jefferson County.

The Company's consultant completed a wetland delineation and stream identification field review of the existing and planned ROW for the Project (Appendix D). One perennial stream (the Ohio River), one palustrine forested ("PFO")/palustrine emergent ("PEM") wetland complex, and one PEM wetland were identified within the study area. The identified stream and wetlands are located within and adjacent to the existing transmission line ROW and are proposed to be aerially spanned by the Project or avoided all together. Therefore, impacts to aquatic resources are not anticipated and Clean Water Act Section 401/404 permits will not be needed. The Company plans to submit a Section 10 application to the U.S. Army Corps of Engineers ("USACE") Pittsburgh District for the Ohio River crossing.

The Project crosses the Federal Emergency Management Agency ("FEMA") 100-year floodplain and floodway associated with the Ohio River (FEMA, Flood Insurance Rate Map, Panel 358D, Map Number 39081C0358D, Effective Date April 5, 2006). One lattice tower structure (Structure 2) is proposed to be built within the FEMA 100-year floodplain. The Company will obtain a floodplain permit from Jefferson County for the construction of Structure 2. Floodplains and floodways are shown on Figure 2 in Appendix D.

In addition to easement acquisition, state and county road, and railroad crossing authorizations are required. Right of entry applications and supporting plan and profile drawings will be provided prior to starting construction. Additional authorizations for the crossing of the Ohio River Scenic Byway are not anticipated.

The Company filed Project structure and span specifications with the Federal Aviation Administration ("FAA") on December 9, 2020 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. FAA No Hazard Determination letters were received by the Company on February 8, 2021. Coordination efforts with the FAA are ongoing and letters will be provided once coordination is complete.

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

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) 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 ≥ 20 if possible. The Company anticipates completing 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 consultants completed a desktop review on November 18, 2020. According to the ODNR's Ohio Mine data, there is one portal and one mine 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. Breeding 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 and ODNR-DOW 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 four threatened and one special concern fish species and one threatened 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.

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 and floodway associated with the Ohio River (FEMA, Flood Insurance Rate Map, Panel 358D, Map Number 39081C0358D, Effective Date

AEP Ohio Transmission Company, Inc.

April 5, 2006). One lattice tower structure is proposed to be built in the FEMA 100-year floodplain and the Company plans to obtain a floodplain permit from Jefferson County for the construction of this structure. Floodplains and floodways are shown on Figure 2 in Appendix D.

A wetland delineation and stream identification field review was completed within the existing and planned ROW by the Company's consultant in April 2020 and January 2021. The results of the survey are presented in the Ecological Survey Report included in Appendix D. In general, the habitat encountered within the study area consisted of maintained transmission line ROW bordered by mixed deciduous forest, transportation infrastructure, and aquatic resources. One perennial stream (the Ohio River), one PFO/PEM wetland compound, and one PEM wetland were identified within the study area. The stream and wetlands are located within the planned transmission line ROW and are proposed to be aerially spanned and therefore, will not be impacted by the Project.

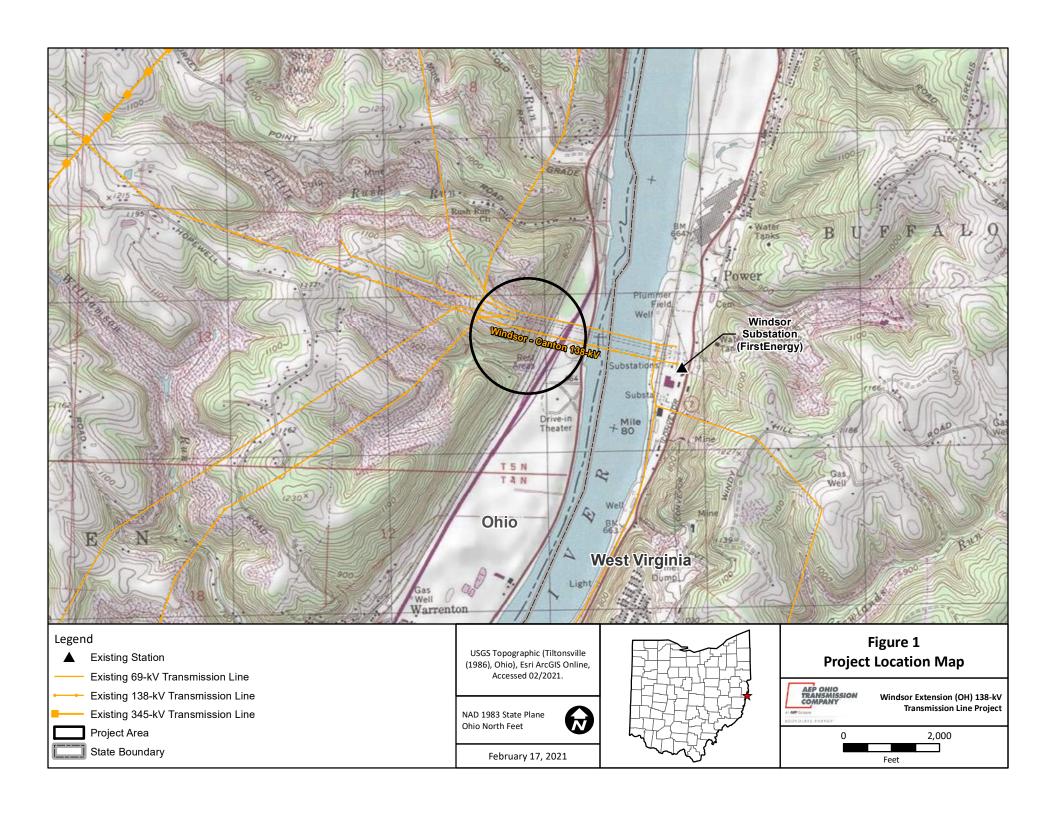
B(10)(g) Unusual Conditions

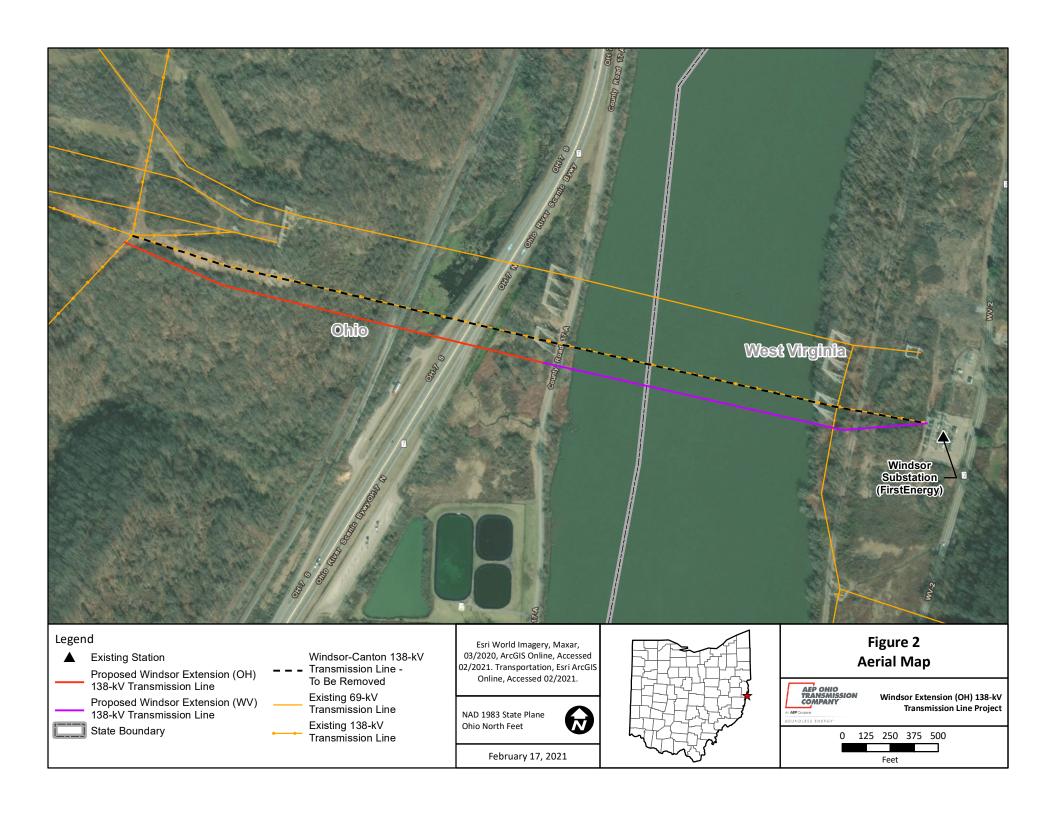
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

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

APPENDIX A

Project Maps





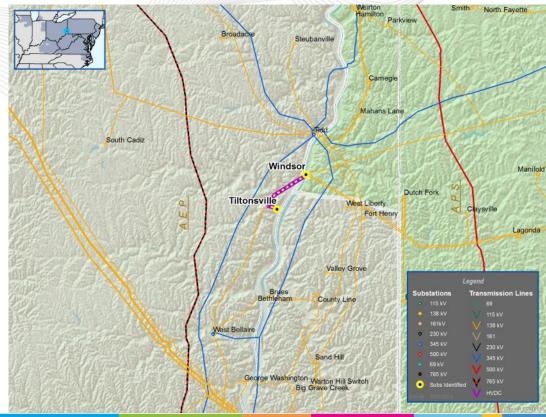
APPENDIX B

PJM Interconnection Submittal



- 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

AEP/APS Transmission Zone



APPENDIX C

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 sixwired 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).

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 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:

<u>State Threatened</u> 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:

 $\frac{http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses\%20\&\%20permits/OH\%20Mussel\%20Survey\%20Protocol.pdf}{}$

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

<u>State Endangered</u>
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.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf}{20Contact%20List_8_16.pdf}$

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 if you have questions about these comments or need additional information.

Mike Pettegrew Environmental Services Administrator (Acting) 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 ≥ 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 ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are

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

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

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). 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.

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

Sincerely,

Patrice M. Ashfield Field Office Supervisor

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



In reply, refer to 2020-JEF-48403

RPR Serial No: 1084143, 1084144

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, or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

APPENDIX D

Ecological Survey Report

Ecological Survey Report

AEP Ohio Transmission Company Tiltonsville – Windsor 138 kV Ratings Increase Project Jefferson County, Ohio & Brooke County, West Virginia

GAI Project Number: C170352.92, Task 001

September 2020

BOUNDLESS ENERGYSM



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

Ecological Survey Report

AEP Ohio Transmission Company Tiltonsville – Windsor 138 kV Ratings Increase Project Jefferson County, Ohio & Brooke County, West Virginia

GAI Project Number: C170352.92, Task 001

September 2020

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

Prepared by:
GAI Consultants, Inc.
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Canton, Ohio 44718

Report Authors:

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) and Brooke County, West Virginia (WV). The proposed Project is approximately 5.0 miles in total, with approximately 4.5 miles located in OH and 0.5 mile located in WV. Currently, approximately 4.5 miles of the existing line is 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, as well as replacement of aged structures.

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 Glenns 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. Coordination with state and federal agencies for protected species is provided in Appendix E.

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 onsite 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 [≥ 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 and WV. 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 (OPEA, 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 handheld 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

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.

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 in OH and WV.

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, broadleaved 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 ($<1.0~\text{mi}^2$) in size, or the Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and twenty square miles (1.0- $20.0~\text{mi}^2$) 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 in OH (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 in OH.

A review of the USFWS IPaC website revealed three (3) federally Endangered or Threatened species that may occur within the Project study area in West Virginia (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.

No migratory bird species are expected to occur within the Project study area in WV.

The ODNR and USFWS consultation letters were submitted on August 3, 2020 and are provided in Appendix E. A response from USFWS was received on August 17, 2020. The response from ODNR will be appended once received. Agency coordination requests and the USFWS responses are included in Appendix E.

The USFWS identified two bat species that may be present in vicinity of the Project. Potential impacts to these species will be determined by the schedule of Project construction and extent of tree clearing that is needed.

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 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.

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. ¹	Latitude ²	Longitude ²	Proximal Waterbody	USACE Classification ³	Cowardin Classification ⁴	Size⁵ (acres)	ORAM v. 5.0 Score ⁶	ORAM Category ⁷	Figure 2 (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	46	2	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:

- ¹ GAI map designation.
- North American Datum, 1983.
- Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process.
- ⁴ PEM Palustrine Emergent, PFO Palustrine Forested; PUB Palustrine Unconsolidated Bottom
- Total acreage of wetland located within the Project study area.
- 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.ohio.gov/portals/35/401/oram50sc_s.pdf.



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. ¹	Waterbody Name	OEPA WQ Designation ²	OEPA Stream Eligibility ³	Stream Type	USACE Classification⁴	HHEI Score⁵	PHWH Class⁵	QHEI Score ⁶	Width (feet) ⁷	OHWM Width (feet)	OHWM Depth (inches)	Stream Length ⁸ (feet)	Latitude ⁹	Longitude ⁹	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:

- GAI 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.
- 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 GAI and must be confirmed by USACE and state agencies through the JD process. RPW Relatively Permanent Waters.



- 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.
- Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHEI). Excellent = ≥70; Good = 55 60; Fair = 43 54; Poor = 30 42; Very Poor = <30.
- Width in feet from tops of stream bank.
- Total stream length (in feet) located within the Project study area.
- 9 North American Datum, 1983.



Table 3¹
ODNR and USFWS RTE Species and Critical Habitat Review Results

Common Name	Scientific Name	Habitat Type	Listing Status ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates			
Amphibians									
Eastern Hellbender	Cryptobranchus alleganiensis	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	Hemidactylium scutatum	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	-			
Bats									
Big Brown Bat	Eptesicus fuscus	Roost sites can be trees, caves, mines, and buildings.	SC	Yes	No; Impacts are not anticipated	April 1 to September 30			
Indiana Bat	Myotis sodalis	Trees >3" dbh	E, FE	Yes	No; Impacts are not anticipated	April 1 to September 30			
Hoary Bat	Lasiurus cinereus	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	Myotis lucifugus	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	Myotis septentrionalis	Roost sites can be trees, caves, and mines.	T, FT	Yes	No; Impacts are not anticipated	April 1 to September 30			
Red Bat	Lasiurus borealis	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	Lasionycteris noctivagans	Roost sites can be trees, rock crevices, caves, and buildings.	SC	Yes	No; Impacts are not anticipated	April 1 to September 30			
Birds	Birds								
American Coot	Fulica americana	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 ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Birds (continued)						
Barn Owl	Tyto alba	Old buildings, barns, silos or chimneys, and occasionally hollow trees; Dependent on open grassland for hunting prey.	Т	No	No; Known habitat types are not present within the Project area	-
Black-billed Cuckoo	Coccyzus erythropthalmus	Woodlands, but prefers young forests and dense, scruffy thickets.	SC	No	No; Known habitat types are not present within the Project area	-
Bobolink	Dolichonyx oryzivorus	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	Setophaga cerulea	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	Chordeiles minor	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	Antrostomus vociferus	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	Ammodramus savannarum	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	Ammodramus henslowii	Large contiguous blocks of grassland habitat.	SC	No	No; Known habitat types are not present within the Project area	-
Northern Bobwhite	Colinus virginianus	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 ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Birds (continued)						
Red-headed Woodpecker	Melanerpes erythrocephalus	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	Accipiter striatus	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	Pooecetes gramineus	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	-
Insects						
Riffle snaketail	Ophiogomphus carolus	Clear, cold, and rocky streams that are fast flowing with few pools. Stream sediment consists of fine gravel or sand.	Т	No	No; Known habitat types are not present within the Project area	-
Fish						
Goldeye	Hiodon alosoides	Occurs in deep, open pools and channels of turbid, lowland rivers; small lakes and impoundments.	Е	No	No; Known habitat types are not present within the Project area	-
Ohio Lamprey	Ichthyomyzon bdellium	Inhabit warmwater habitats in backwaters and pools of smaller streams and rivers.	Е	Yes	No; Impacts are not anticipated	-
American Eel	Anguilla rostrata	Freshwater lakes, streams, and rivers.	Т	Yes	No; Impacts are not anticipated	-
Tippecanoe Darter	Etheostoma tippecanoe	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.	Т	No	No; Known habitat types are not present within the Project area	-



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



Common Name	Scientific Name	Habitat Type	Listing Status ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates		
Reptiles								
Eastern Box Turtle	Terrapene carolina carolina	Various woodlands, typically found beneath rotting logs, decaying leaves, and other plant debris.	SC	Yes	No; Impacts are not anticipated	-		
Queensnake	Regina septemvittata	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	-		
Plants								
Running buffalo clover	Trifolium stoloniferum	Rich soils in periodically disturbed areas partially shaded areas between open forest and prairie.	FE	Yes	No; Impacts are not anticipated	-		

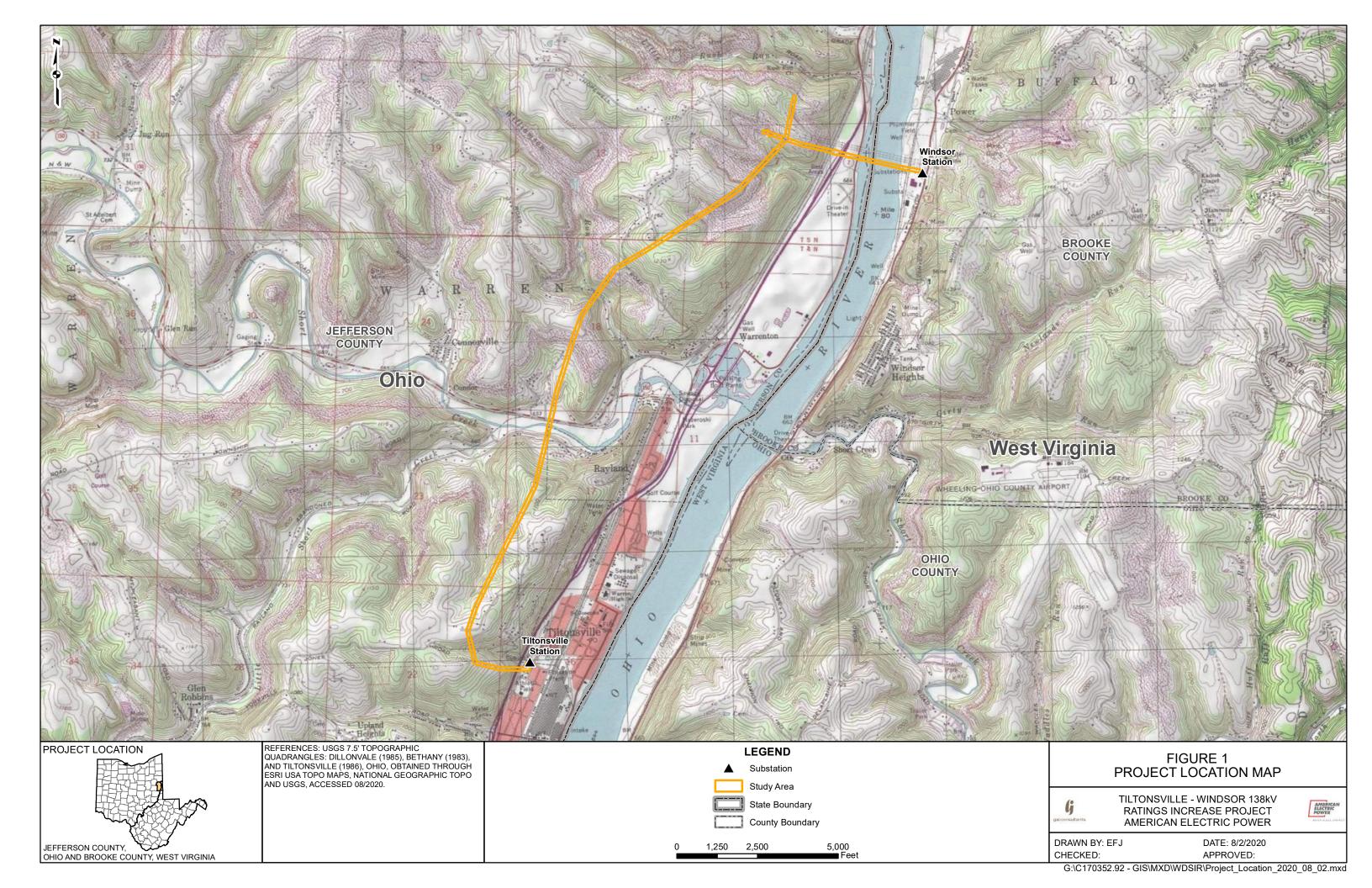
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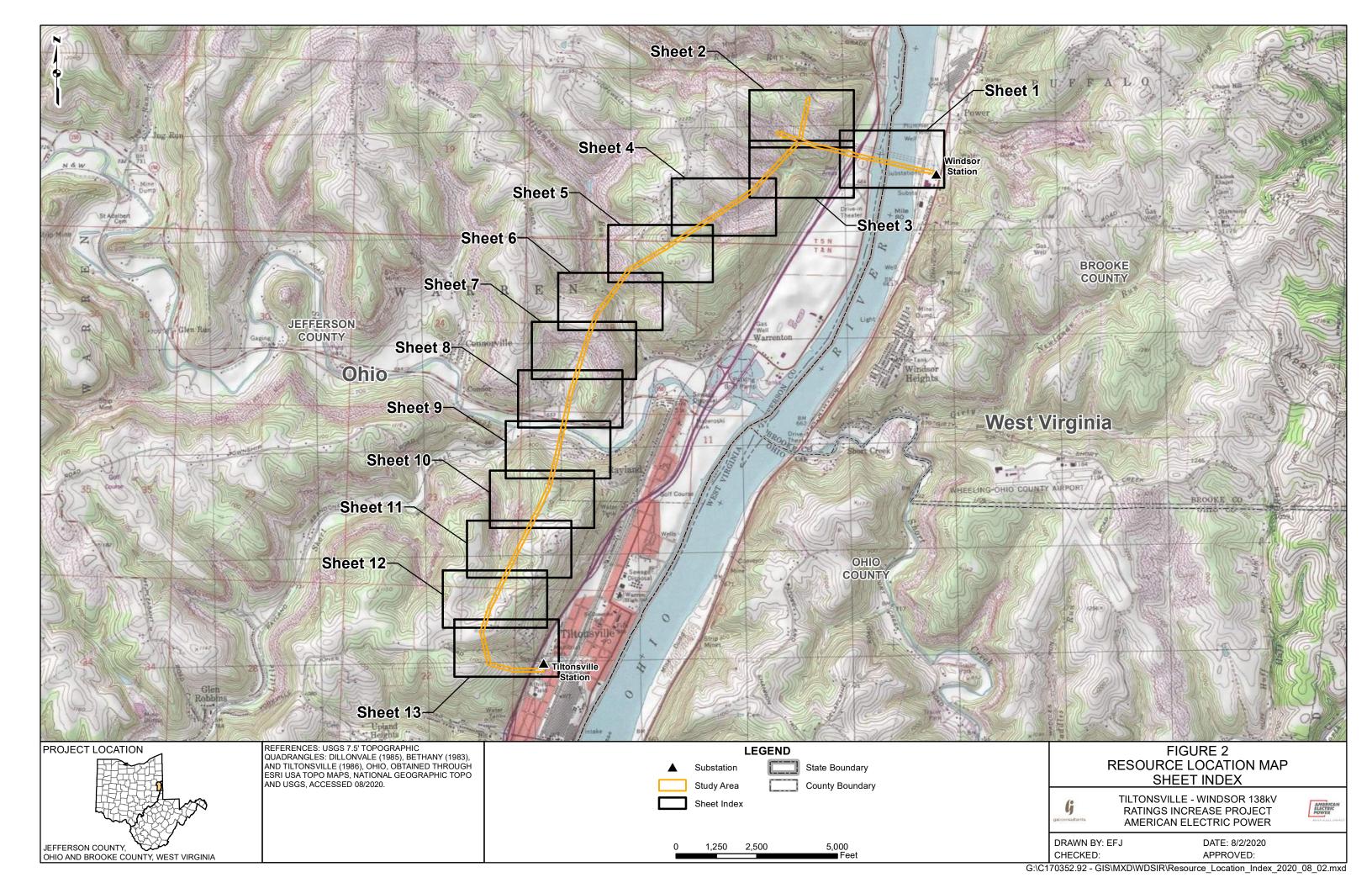
- E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern; FC = federal candidate.
- Natural Heritage Database record at or within a one-mile radius of the Project area.

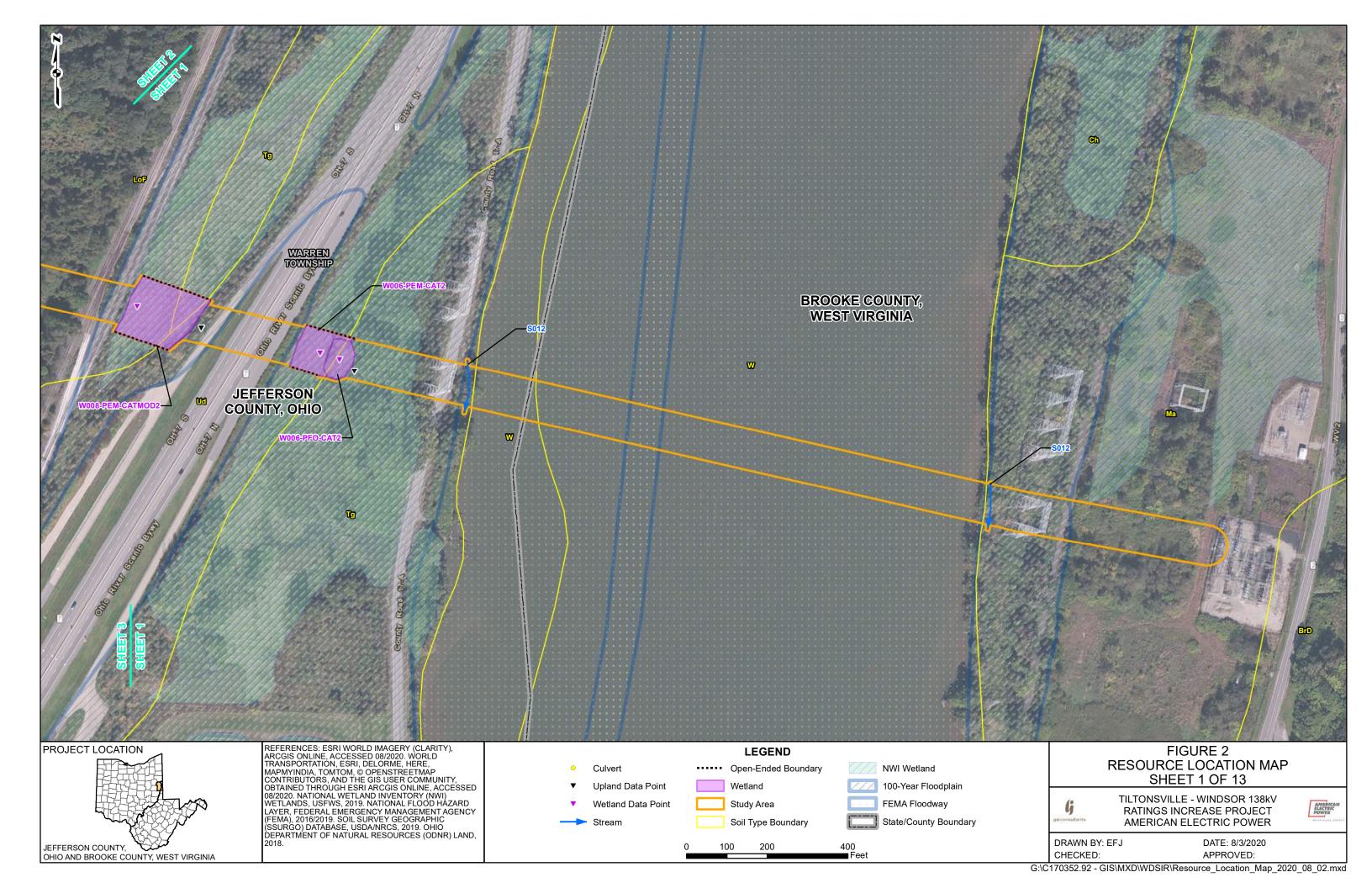


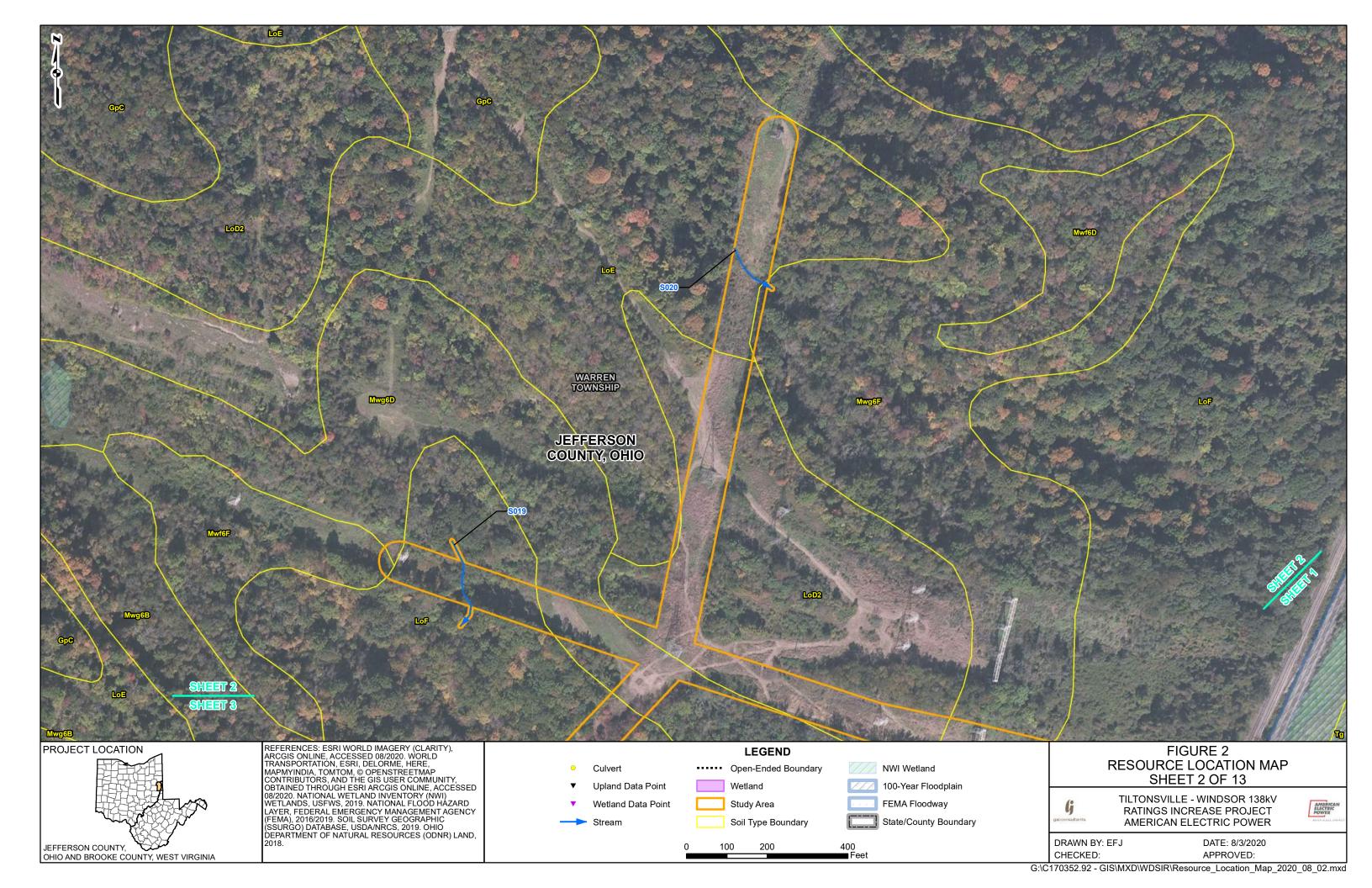
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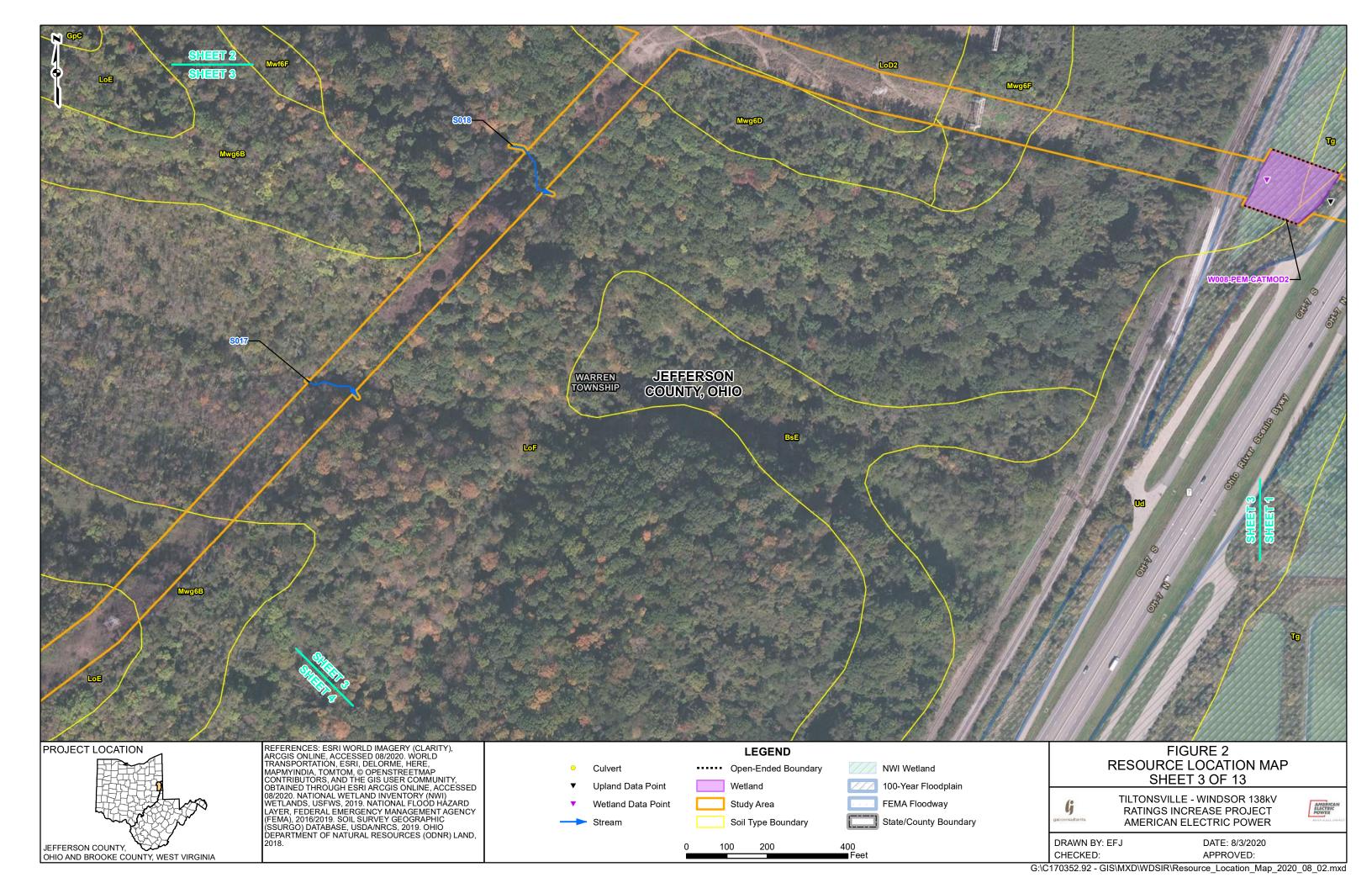


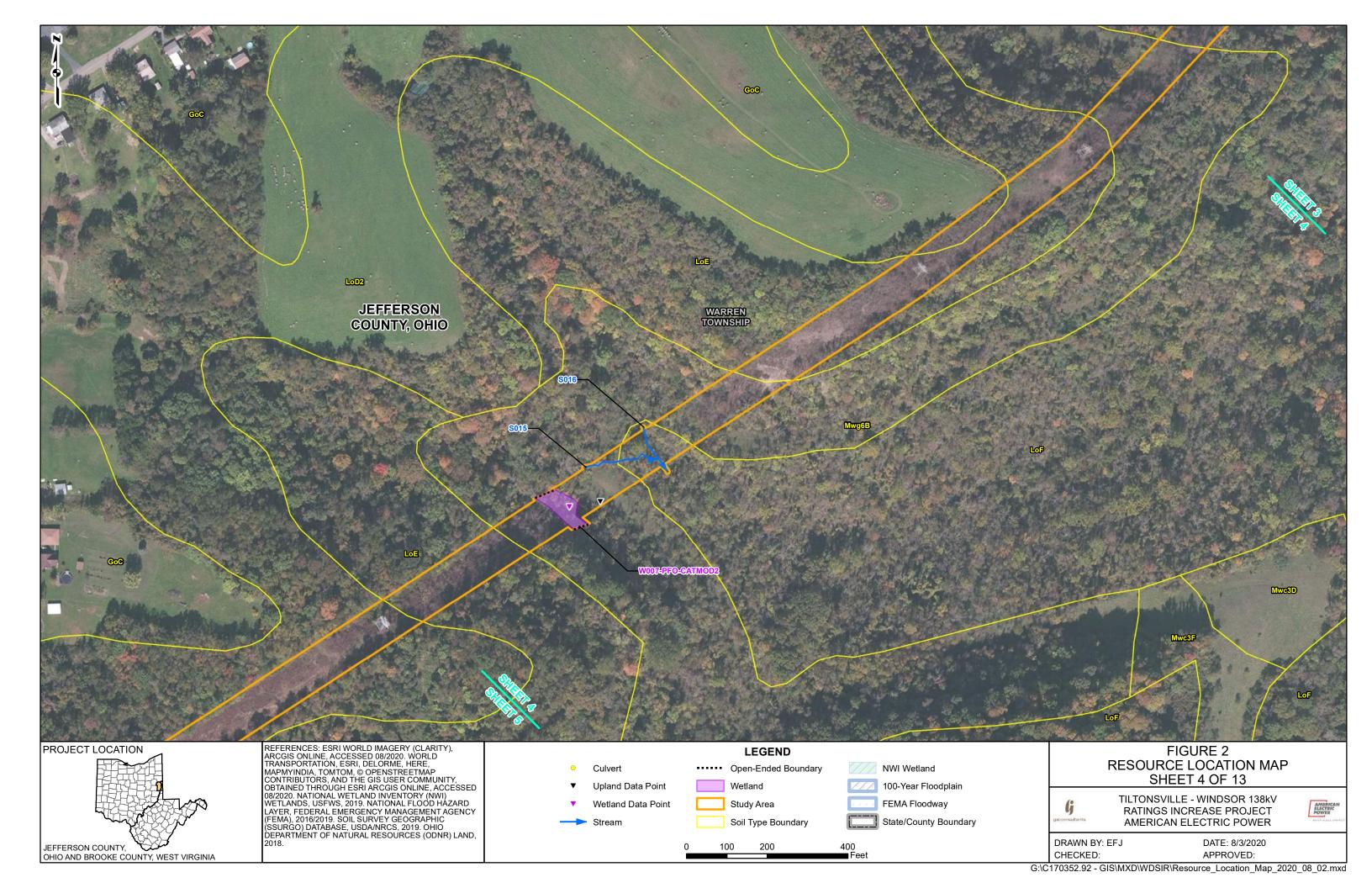


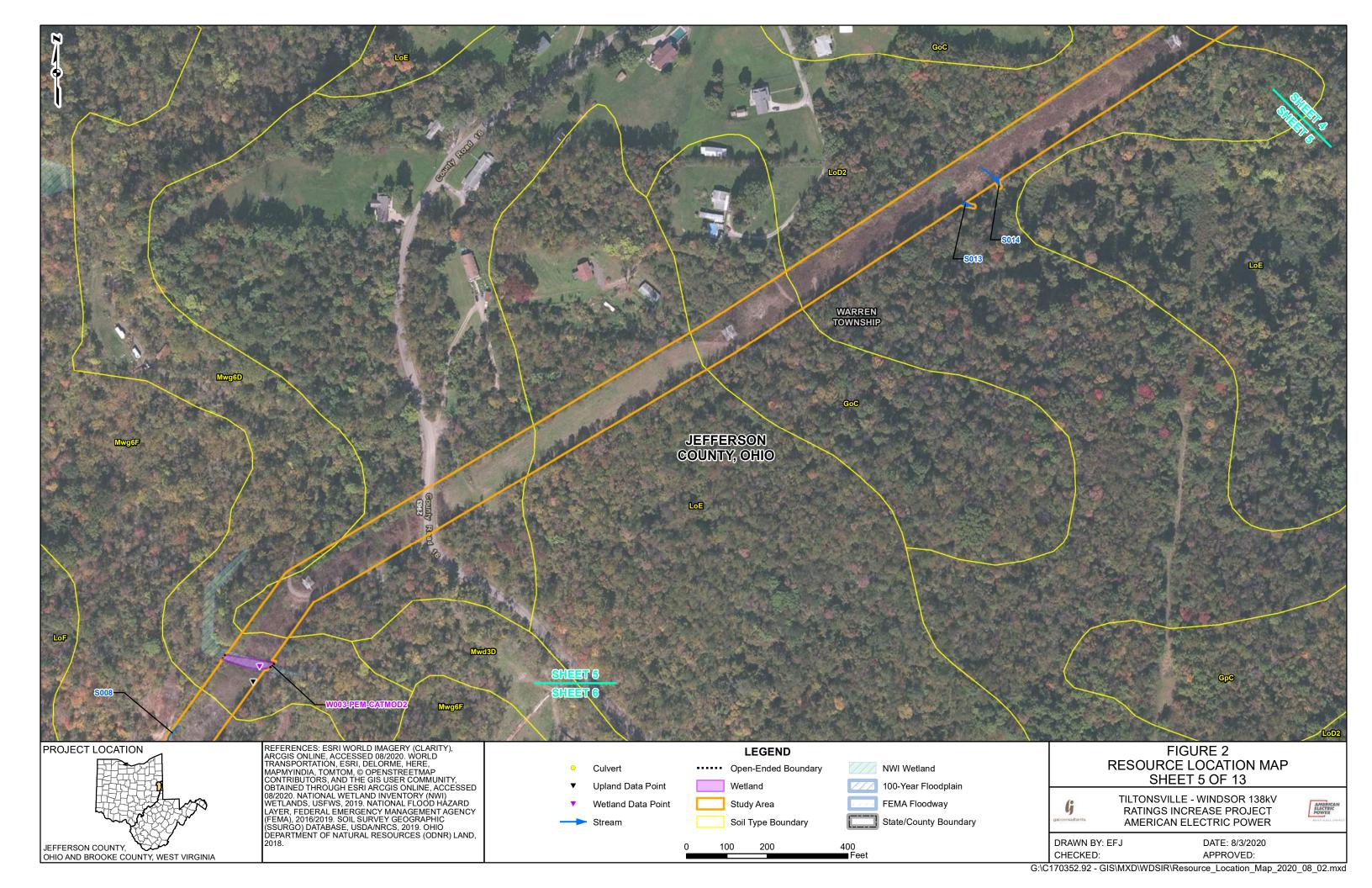


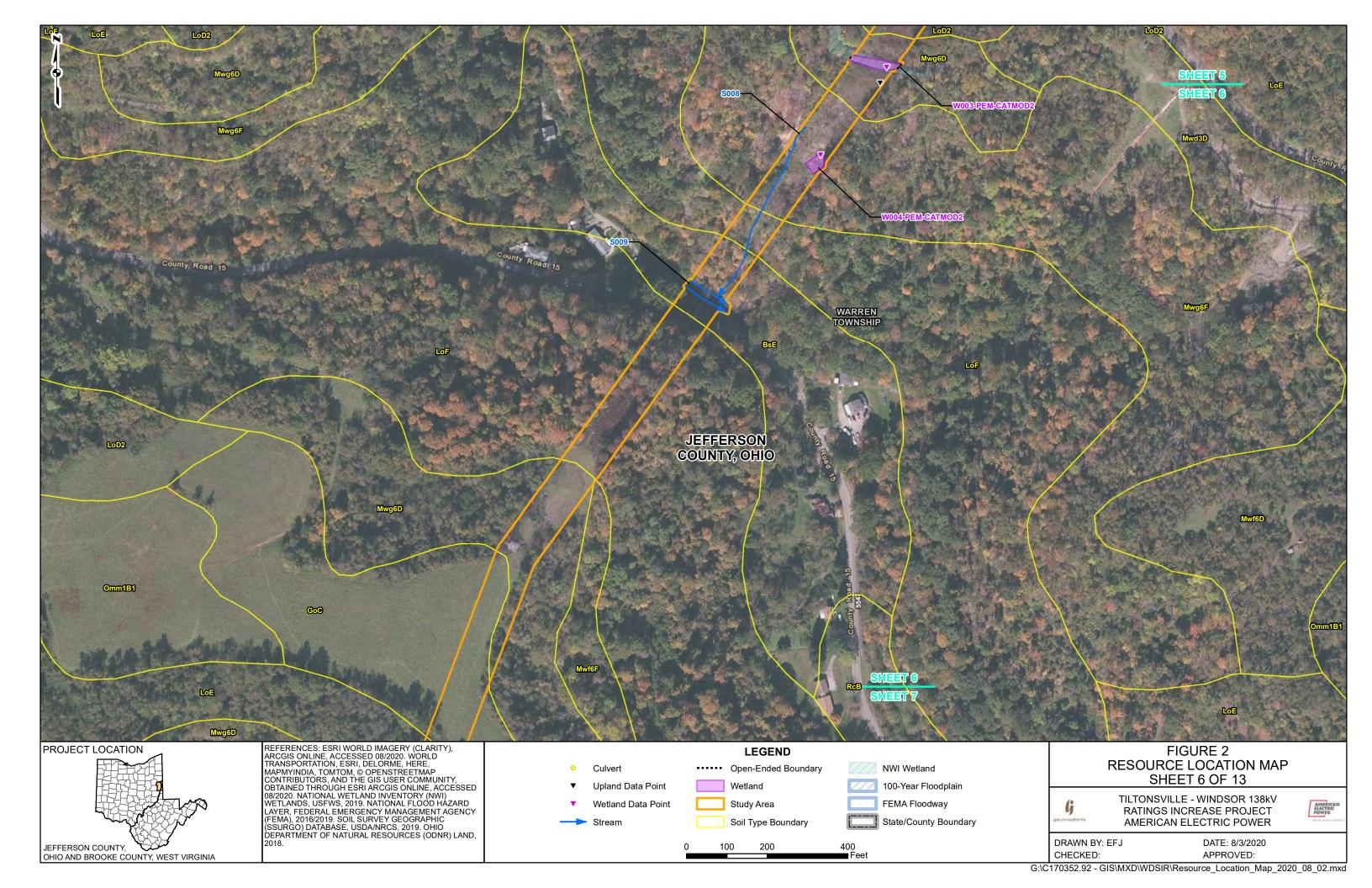


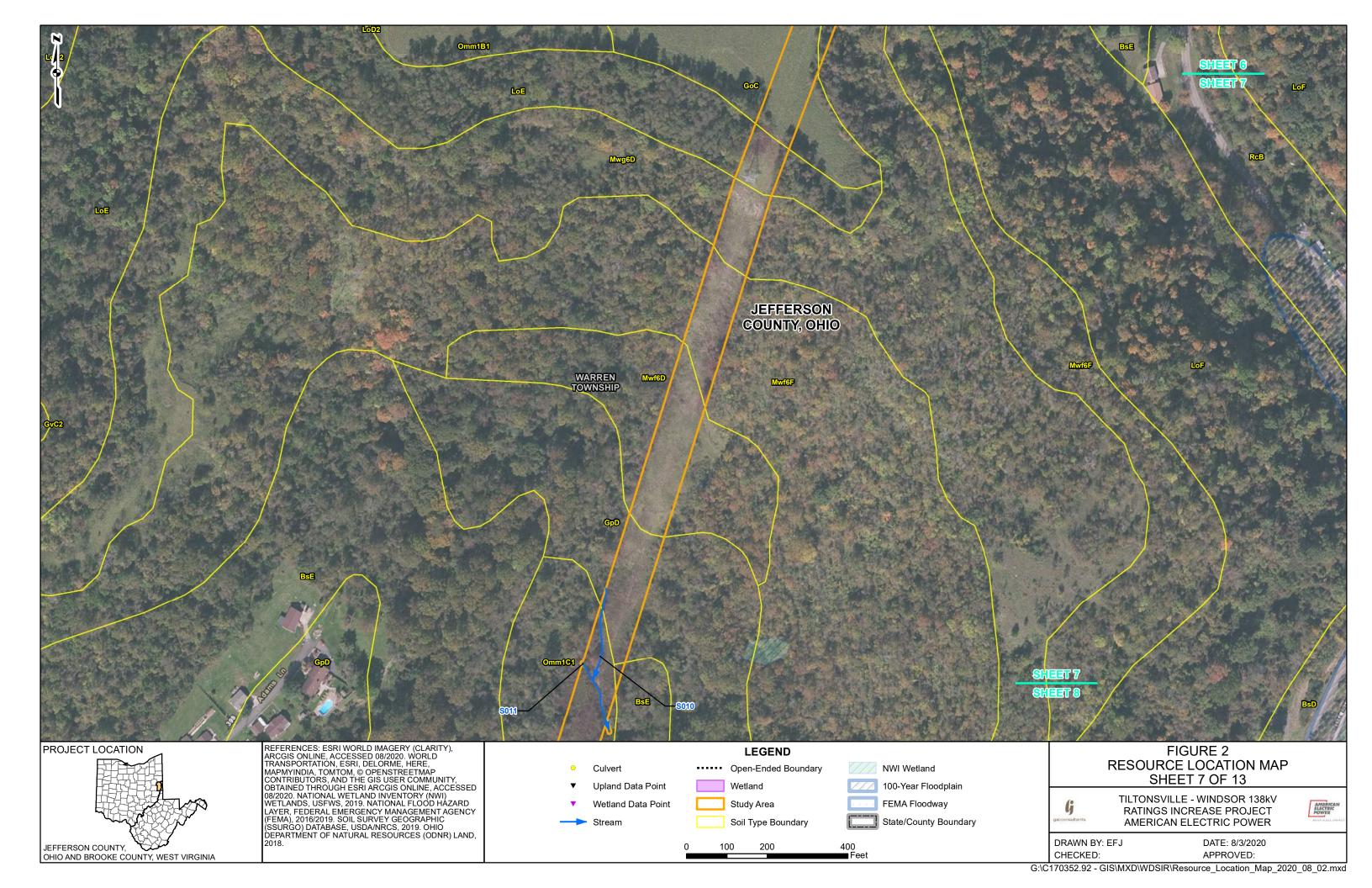


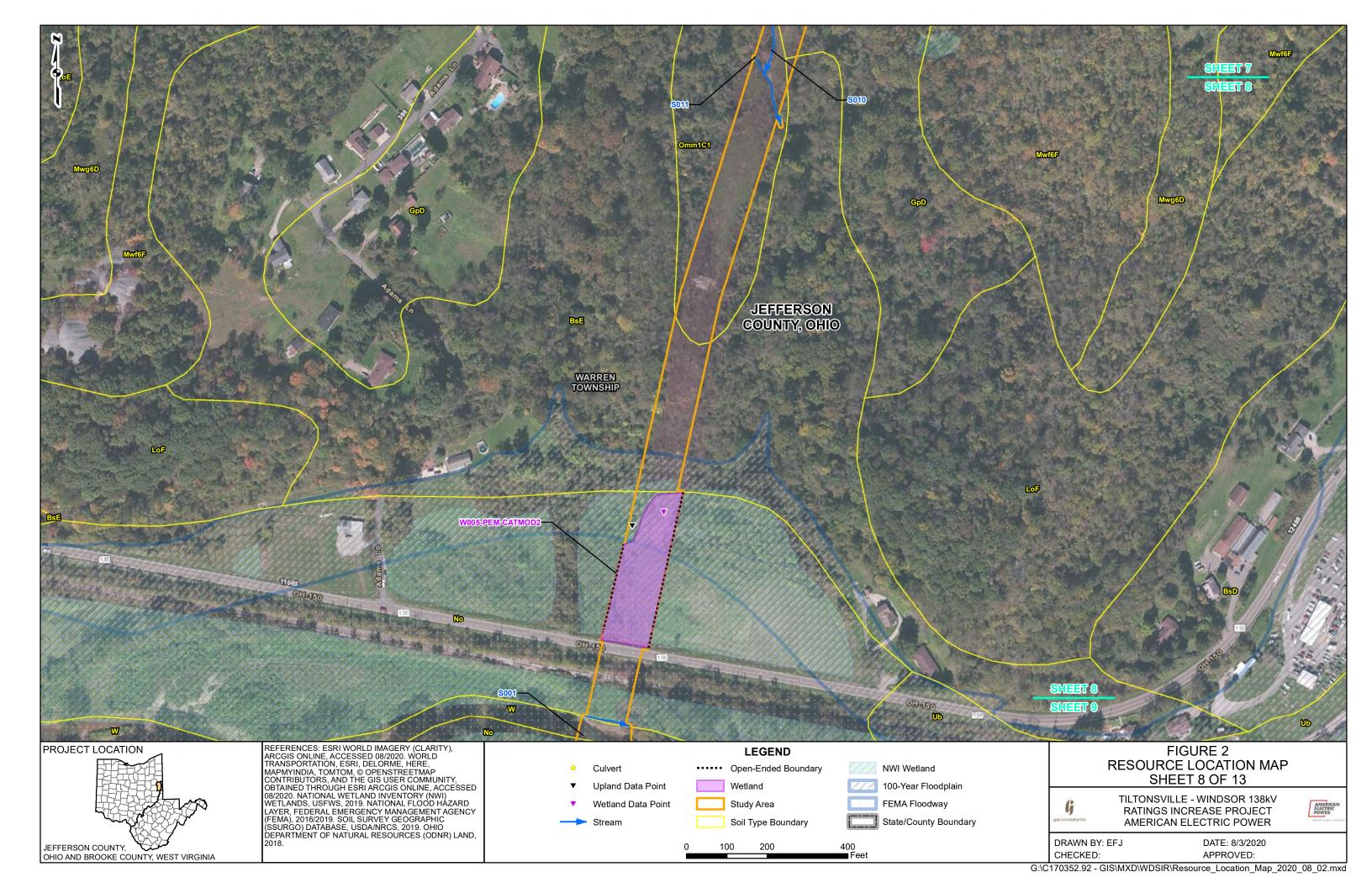


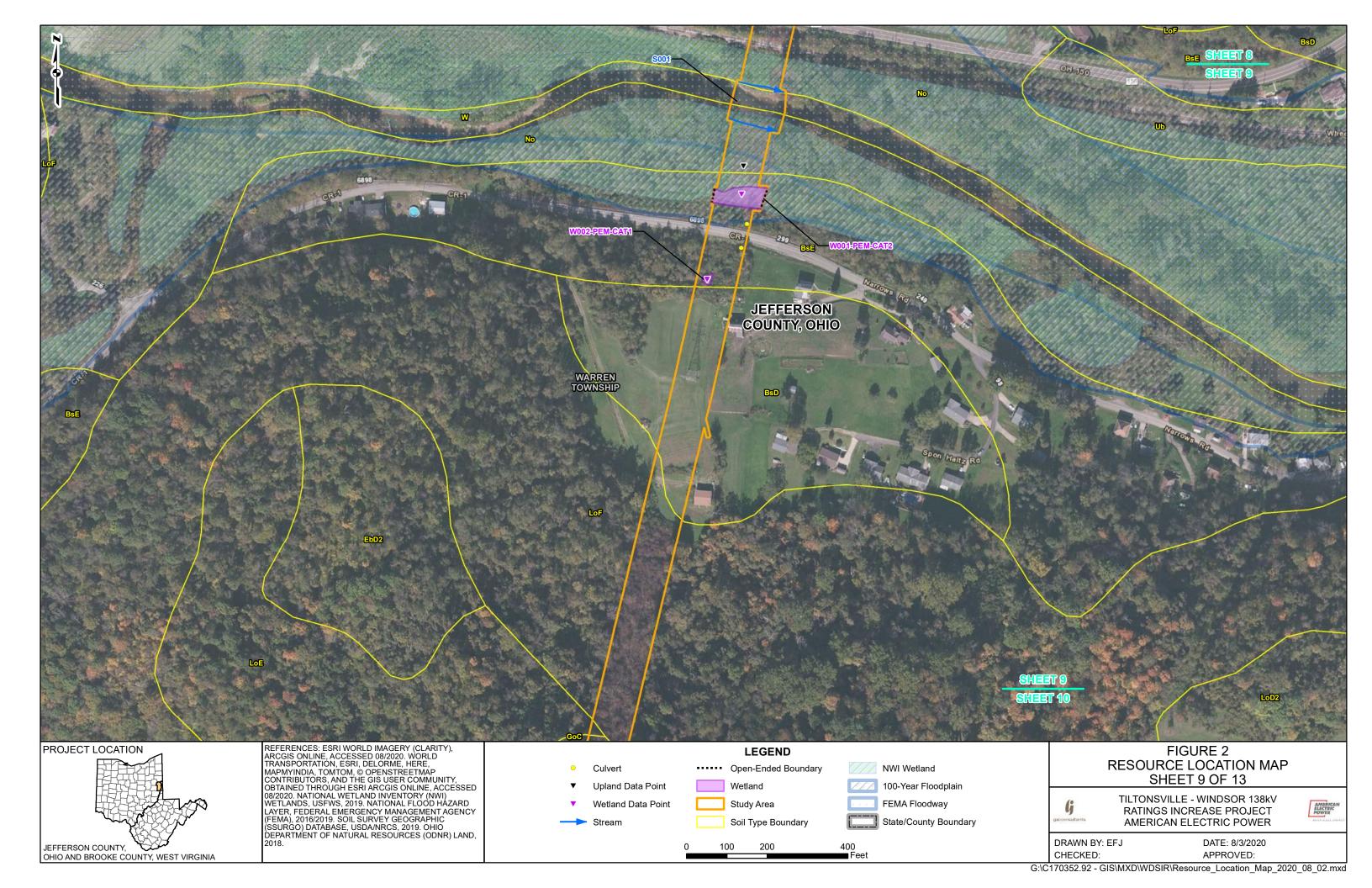


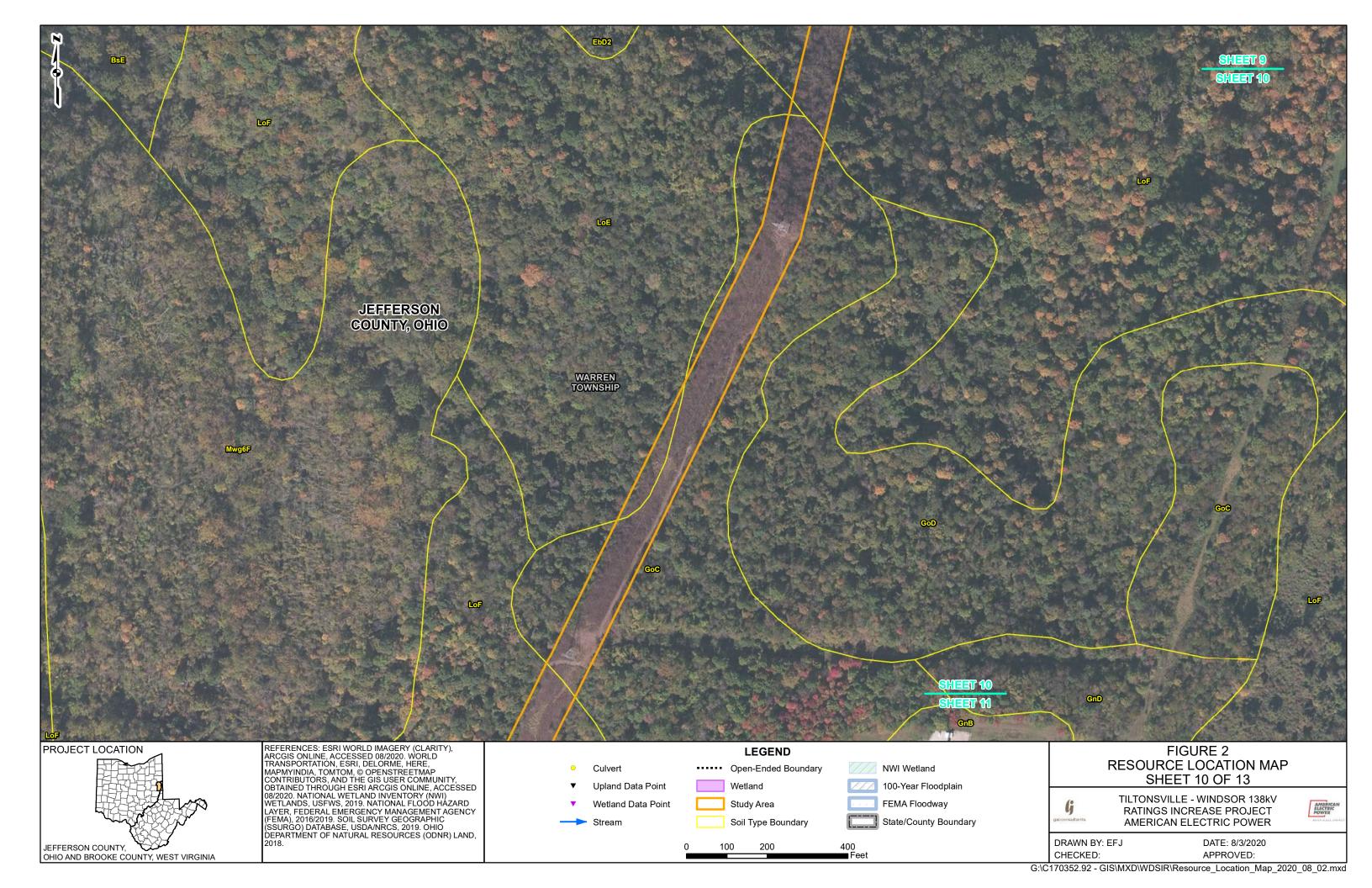


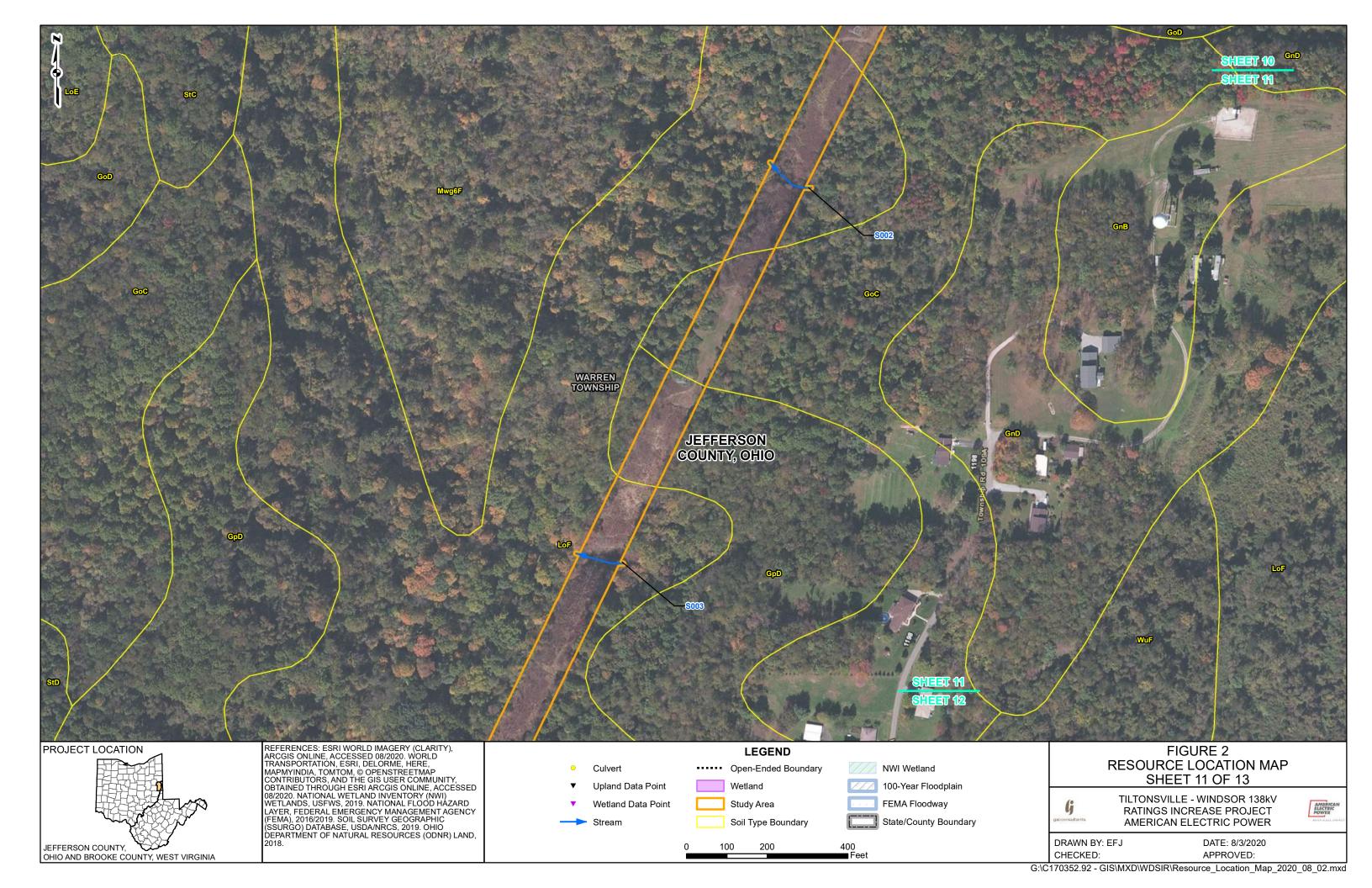


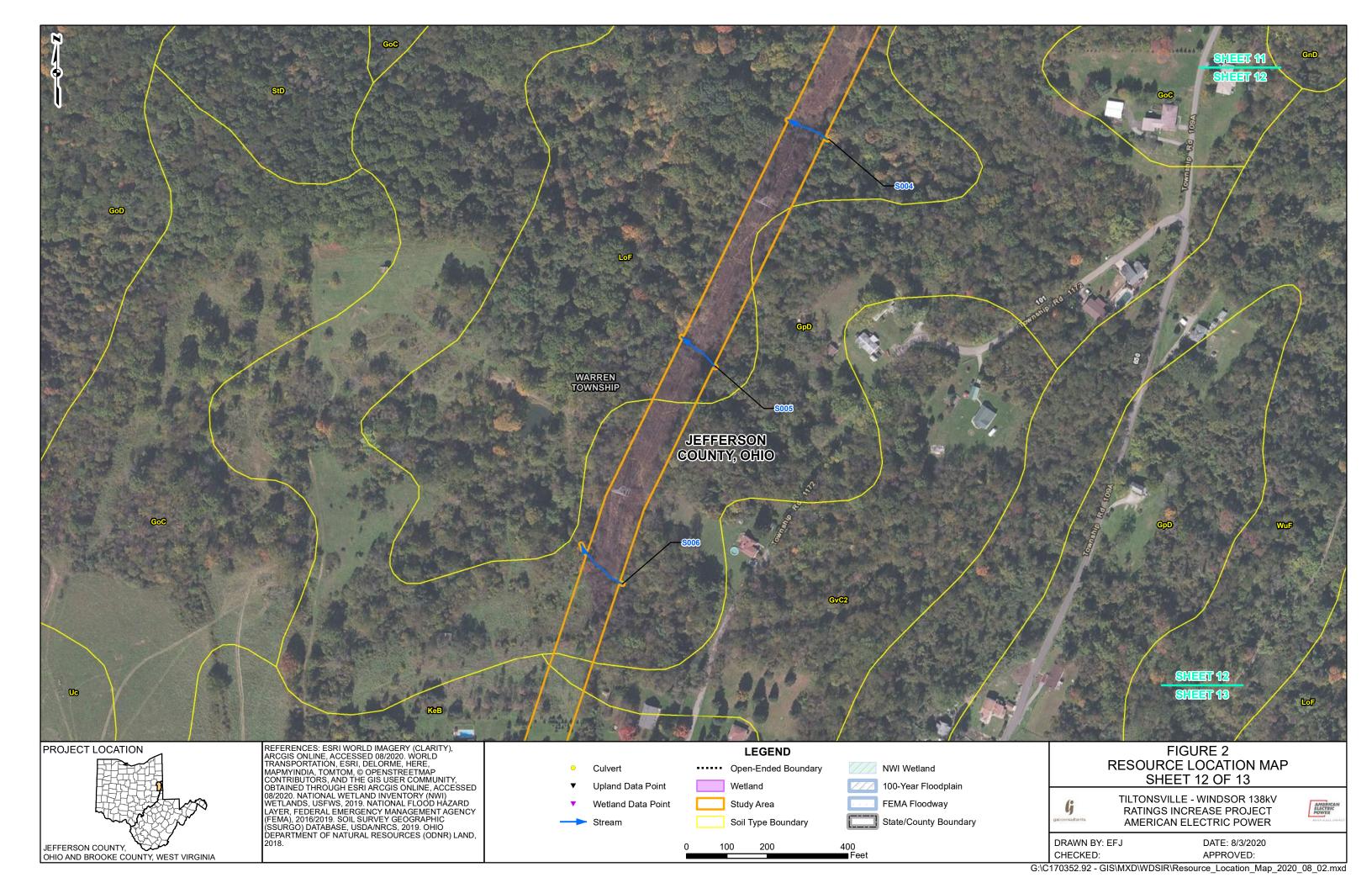


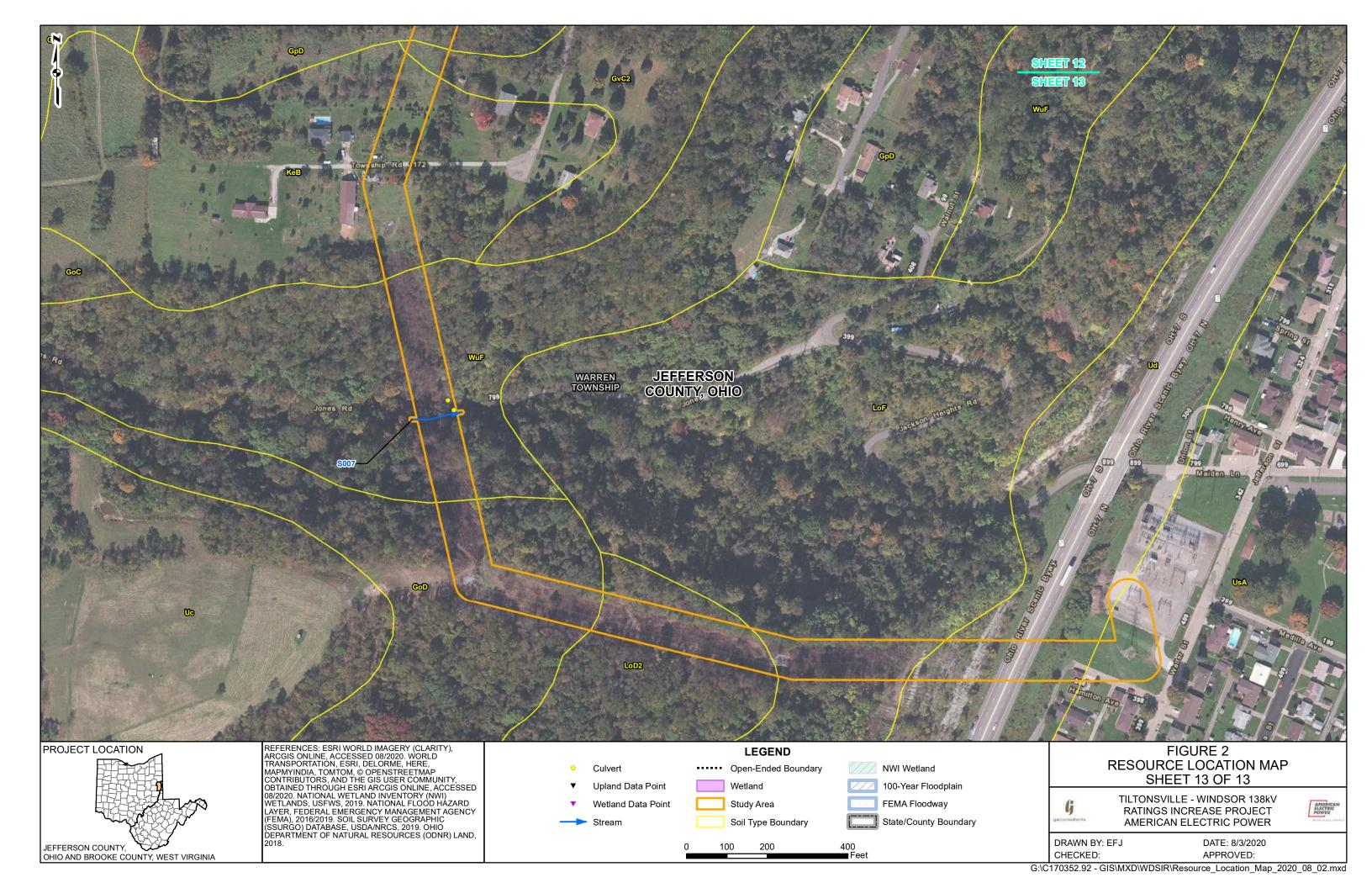


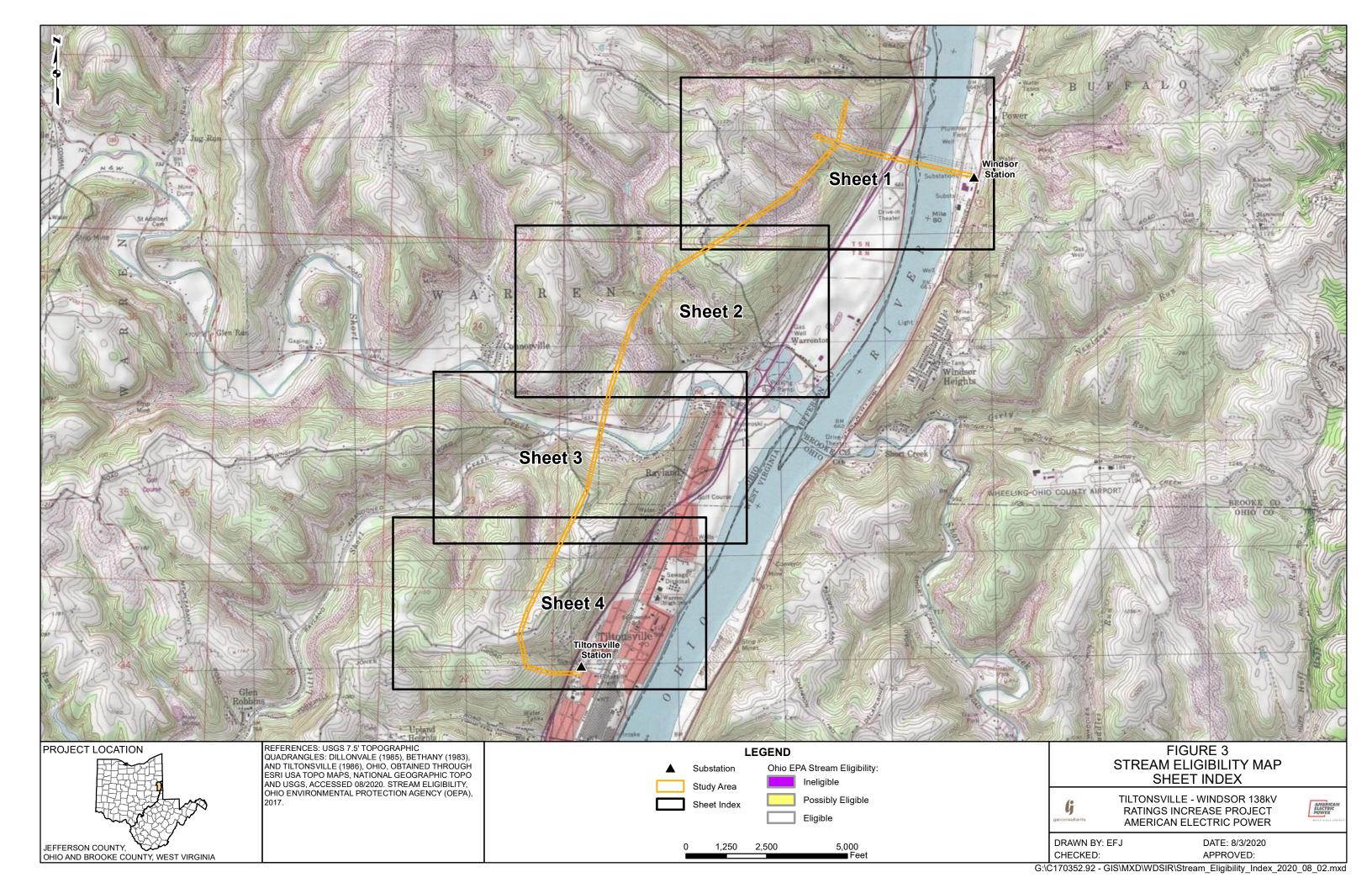


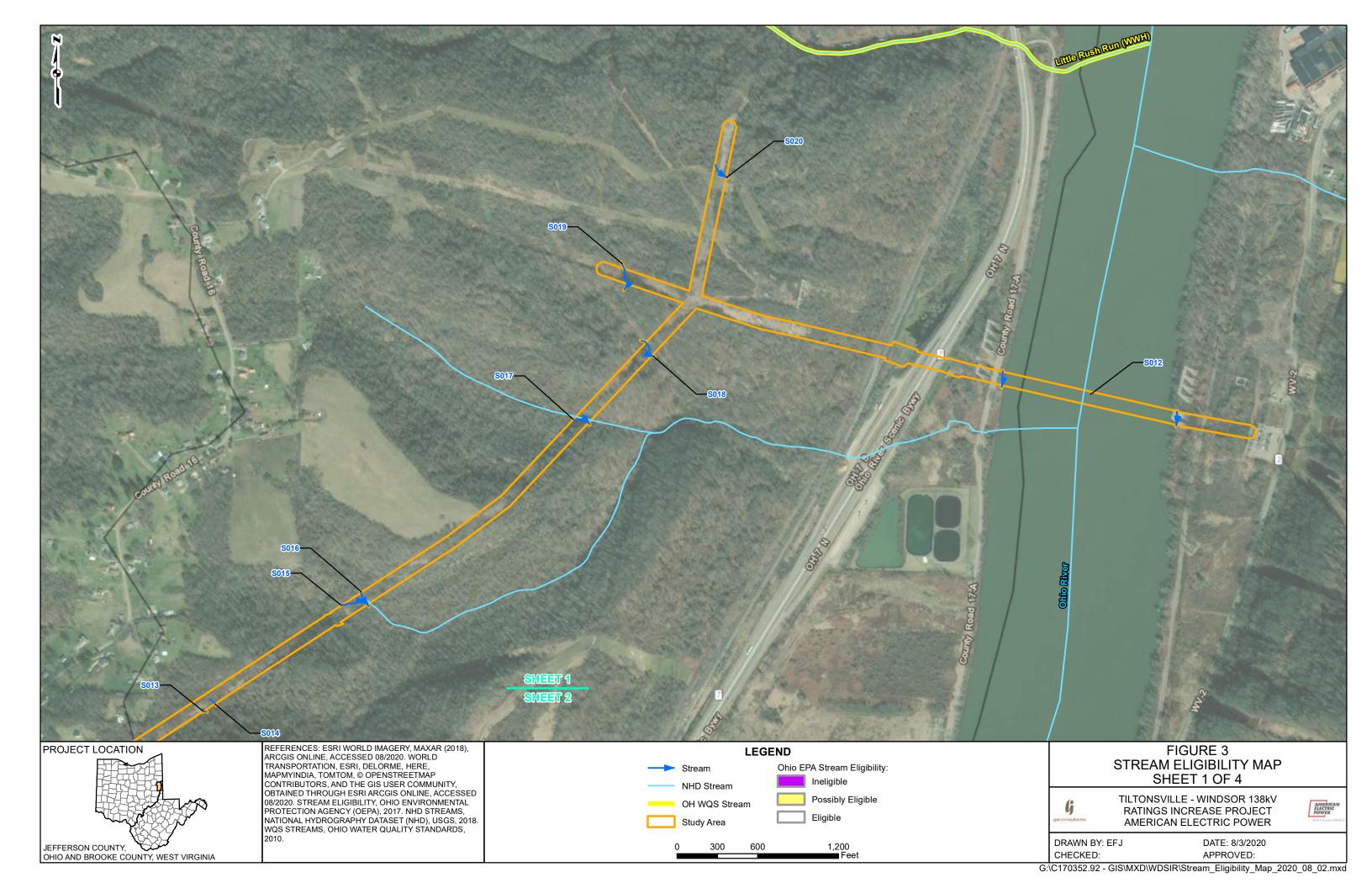


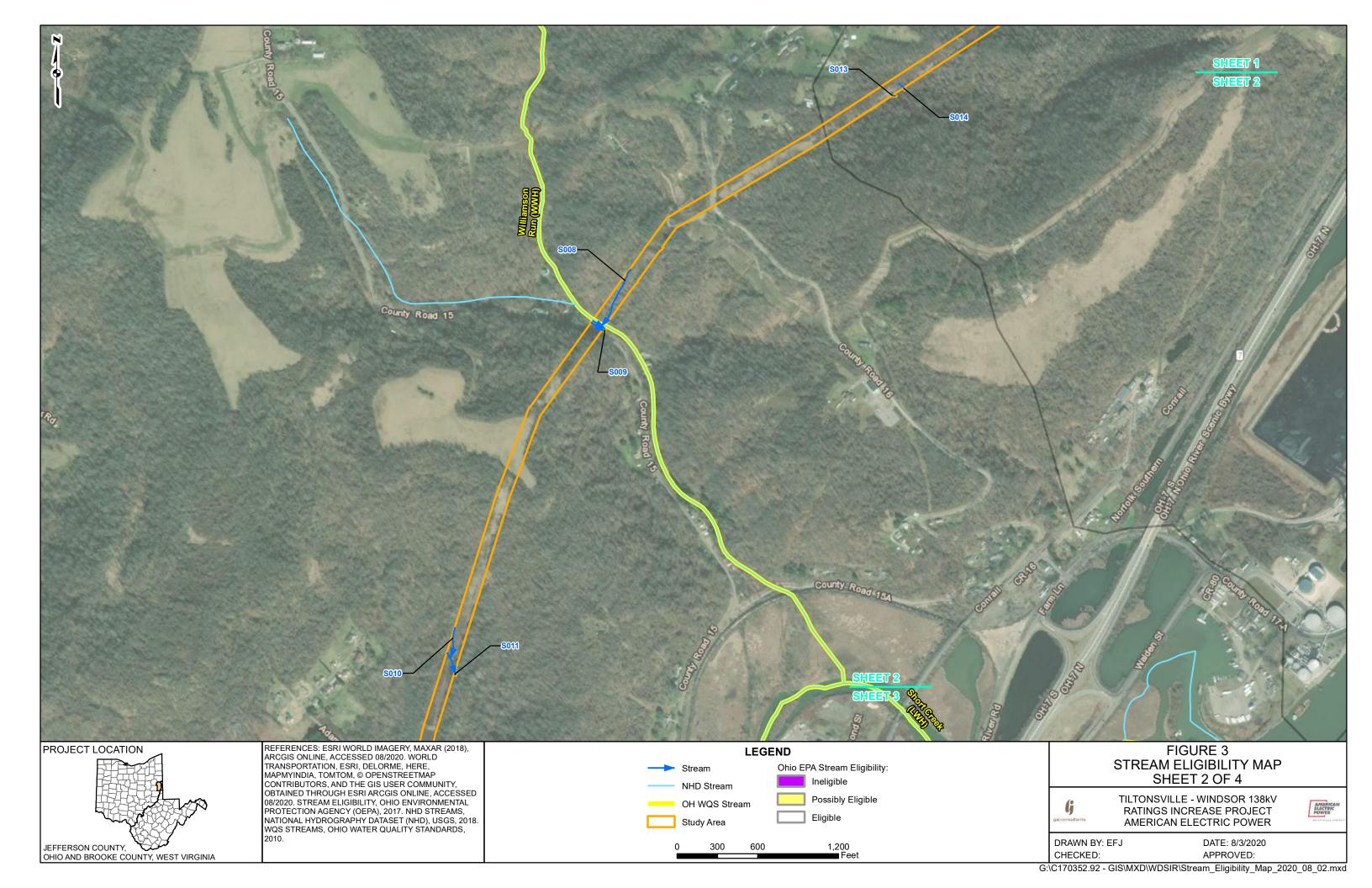


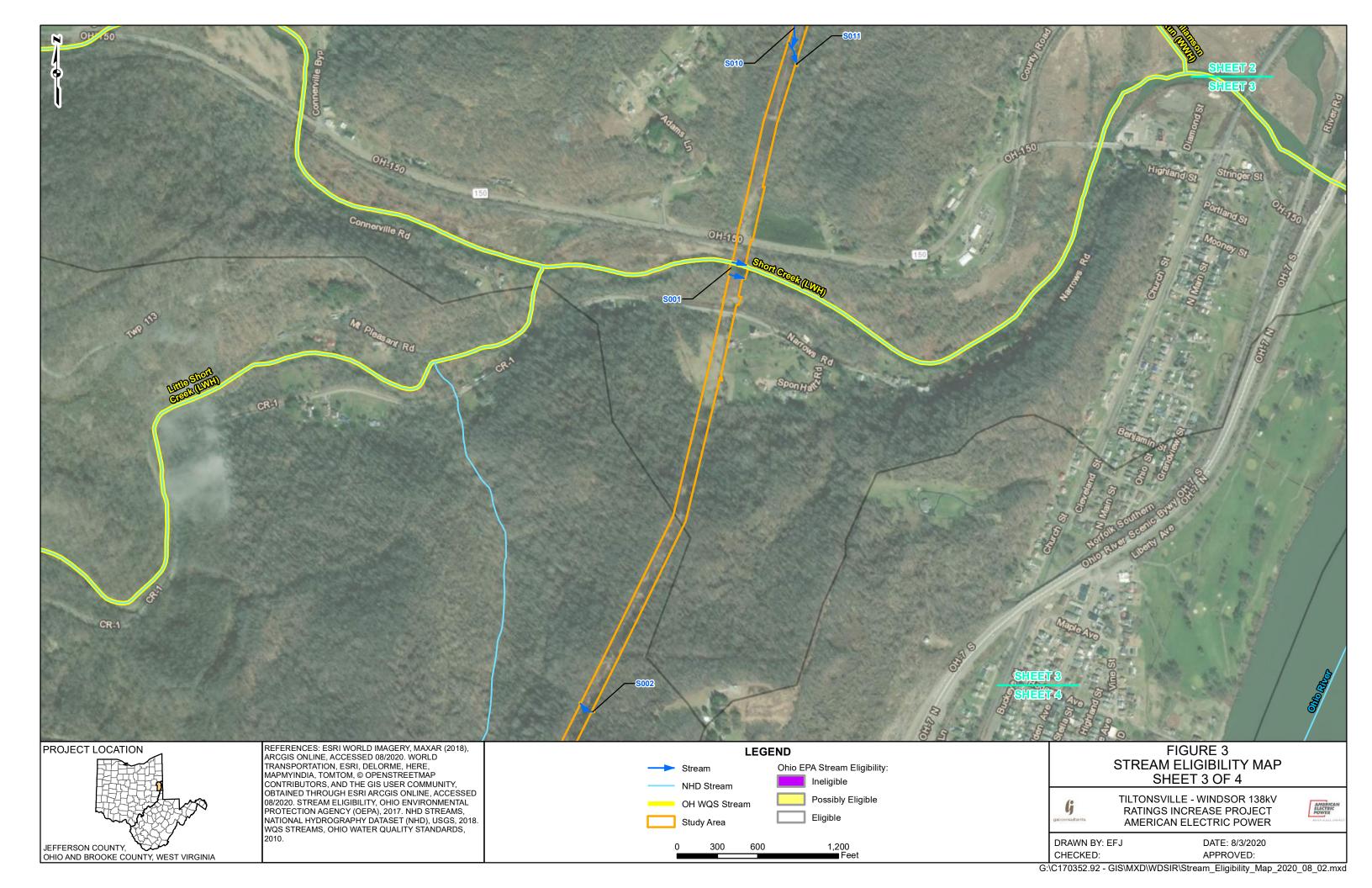


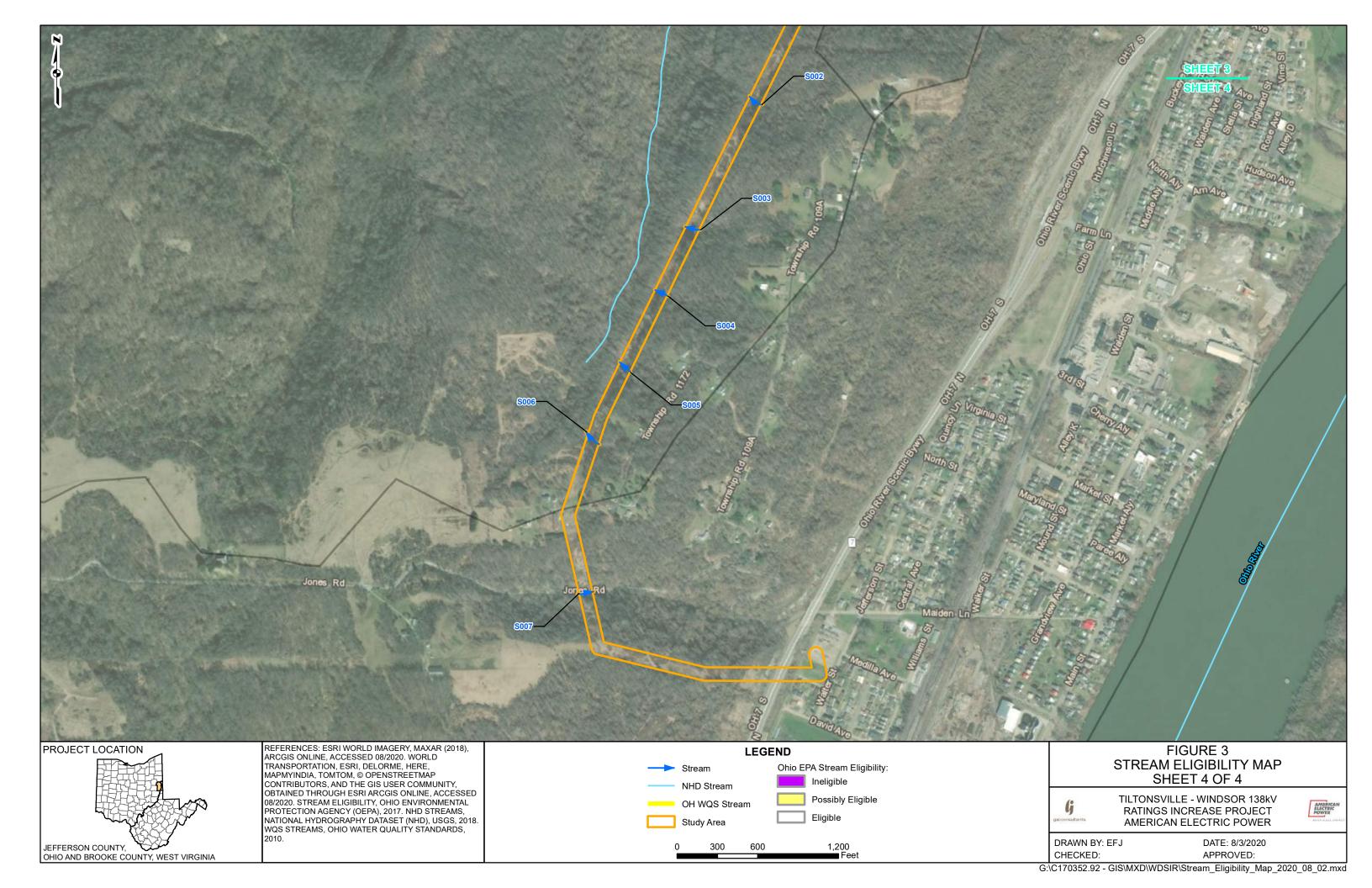












APPENDIX APhotographs





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 BWetland Determination Data Forms



WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Win	dsor	City/C	county: Jefferson County		Sampling Date: 04/21/2020			
Applicant/Owner: AEP				State: OH	Sampling Point: W001			
Investigator(s): CDK/JJP		Section			_			
Landform (hillslope, terrace, et	c.): Floodplain	Local rel	ef (concave, convex, nor	ne): Concave	Slope (%): <1			
Landform (hillslope, terrace, et Subregion (LRR or MLRA): LF	R-N	Lat: 40.185120	Long: -80.7	702716	Datum: NAD83			
Soil Map Unit Name: Brooksid								
Are climatic / hydrologic condit								
Are Vegetation, Soil	_				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 Prese Hydric Soil Present? Wetland Hydrology Present?	Yes	No No	Is the Sampled Area within a Wetland?	Yes_	No			
Remarks:								
W001-PEM-CAT2								
Boundary open end Mapped NWI.	ed.							
HYDROLOGY								
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum	of one is required		·	Surface Soil	` '			
Surface Water (A1)		True Aquatic Plants (getated Concave Surface (B8)			
High Water Table (A2)Saturation (A3)		Hydrogen Sulfide Od Oxidized Rhizosphere		Drainage Pa Moss Trim L				
Water Marks (B1)		Presence of Reduced			Water Table (C2)			
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bur				
Drift Deposits (B3)		Thin Muck Surface (0			isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1)								
Iron Deposits (B5)								
Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3)								
Water-Stained Leaves (B9) Microtopographic Relief (D4)								
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations: Surface Water Present?	Voc V No	Depth (inches): 3						
Water Table Present?		Depth (inches):						
Saturation Present?		Depth (inches):	Wetland H	lydrology Preser	nt? Yes No			
(includes capillary fringe)								
Describe Recorded Data (stre	am gauge, moni	itoring weil, aerial photos, pre	vious inspections), if ava	illable:				
Remarks:								
Adjacent to stream	SOH-CDK-(001.						
.,								

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

Sampling Point: W001

Tree Stratum (Plot size: 30' r) % Cover 1. Absent	Total Cover	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 =
2	Total Cover	That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by:
2	Total Cover	Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by:
3	Total Cover	Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by:
4	: Total Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by:
5	: Total Cover	That Are OBL, FACW, or FAC: (A/B)
6	Total Cover	That Are OBL, FACW, or FAC: (A/B)
7	· Total Cover	Total % Cover of:Multiply by:
8	· Total Cover	Total % Cover of:Multiply by:
8	· Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r) 1. Absent 2		
1. Absent 2		FACW species x 2 =
2		FAC species x 3 =
3		FACU species x 4 =
		UPL species x 5 =
4		
		Column Totals: (A) (B)
5		Prevalence Index = B/A =
6		
7		Hydrophytic Vegetation Indicators:
8		1 - Rapid Test for Hydrophytic Vegetation
9		2 - Dominance Test is >50%
10.		3 - Prevalence Index is ≤3.0 ¹
	Tatal Causan	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5' r)	: Total Cover	data in Remarks or on a separate sheet)
	Y FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Impatiens capensis 10	N FACW	•
		¹ Indicators of hydric soil and wetland hydrology must
3		be present, unless disturbed or problematic.
4		Definitions of Four Vegetation Strata:
5		
6		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7		height.
8		
		Sapling/Shrub – Woody plants, excluding vines, less
9		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10		Herb – All herbaceous (non-woody) plants, regardless
11		of size, and woody plants less than 3.28 ft tall.
12		Manada and Allera devide a second of the COO file
	: Total Cover	Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: 30' r)		neight.
1. Absent		
2		
3		
4		
		Hydrophytic
5		Vegetation Present? Yes No
6		Present? resNo
<u> </u>	: Total Cover	

Sampling Point: W001

SOIL

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirn	n the absence	of indicate	ors.)	
Depth	Matrix			x Feature		- 3				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	-	Remarks	
0-16	10YR 4/2	67	10YR 4/3	20	С	M	SCL			
			10YR 4/1	10	D	М				
			7.5YR 4/6	3	С	М				
				_	_	·				
			-			·				
				-	- ·					
						· ——				
1 _{Tymes} C=C		lotion DN	I-Doduood Motrix M		d Cond C		21 continue DI	-Doro Linir	as M-Matrix	
Hydric Soil		ietion, Riv	1=Reduced Matrix, M	S=Maske	a Sana Gi	ains.	² Location: PL		ng, ⋈=⋈atrix. roblematic Hyd	tric Soils ³ ·
Histosol			Dark Surface	(S7)					A10) (MLRA 1 4	
	oipedon (A2)		Polyvalue Be		ace (S8) (I	MLRA 147.			Redox (A16)	,
	stic (A3)		Thin Dark Su				<u> </u>	(MLRA 14	, ,	
	en Sulfide (A4)		Loamy Gleye		(F2)		Pi		oodplain Soils (F19)
	d Layers (A5)		Depleted Ma					(MLRA 13		
	ick (A10) (LRR N)	- (444)	Redox Dark	•	,				v Dark Surface	
	d Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Da Redox Depre				0	ıtner (Expia	in in Remarks)	
	lucky Mineral (S1) (L	RR N.	Iron-Mangan			(LRR N.				
	A 147, 148)	,	MLRA 13		,	,				
Sandy G	Gleyed Matrix (S4)		Umbric Surfa	ace (F13)	(MLRA 1	36, 122)	³ Indi	cators of hy	ydrophytic vege	etation and
-	Redox (S5)			Piedmont Floodplain Soils (F19) (MLRA 148					ology must be	
	Matrix (S6)		Red Parent I	Material (I	F21) (MLF	RA 127, 147	7) ur	nless distur	bed or problem	atic.
	Layer (if observed):									
Type: Nor								D 40		
Depth (in	ches): -						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							
CDK/LIB	ction, Township, Range:							
Landform (hillslope, terrace, etc.): Hillslope Local r	elief (concave, convex, none): Concave Slope (%): 10							
Landform (hillslope, terrace, etc.): Hillslope Local results 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 (BsB								
Are climatic / hydrologic conditions on the site typical for this time of year?								
Are Vegetation, Soil, or Hydrology significantly dist								
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area							
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	within a Wetland? Yes No							
Remarks:								
W002-PEM-CAT1								
Open existing ROW.								
Span small great								
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)							
<u>✓</u> Surface Water (A1) True Aquatic Plants								
<u>✓ High Water Table (A2)</u> Hydrogen Sulfide (
✓ Saturation (A3) ✓ Oxidized Rhizosph _ Water Marks (B1) _ Presence of Reduction	eres on Living Roots (C3) Moss Trim Lines (B16) ed Iron (C4) Dry-Season Water Table (C2)							
Sediment Deposits (B2) Recent Iron Reduction								
Drift Deposits (B3) Thin Muck Surface								
Algal Mat or Crust (B4) Other (Explain in R								
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)	FAC-Neutral Test (D5)							
Field Observations: Surface Water Present? Yes No Depth (inches): 2								
Water Table Present? Yes Vo Depth (inches): 0								
Saturation Present? Yes Vo Depth (inches): 0	Wetland Hydrology Present? Yes No							
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, p N/A	revious inspections), if available:							
Remarks:								
Fed by residential drainage tile.								
Adjacent to S001.								
rajassin to coor.								

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

Sampling Point: W002

	Absolute	Dominant	Indicator	Dominance Test worksheet	· · · · · · · · · · · · · · · · · · ·	
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species		
1. Absent				That Are OBL, FACW, or FAC		(A)
2				Total Newshar of Densire at		
3.				Total Number of Dominant Species Across All Strata:	4	(B)
4						(-)
5.				Percent of Dominant Species That Are OBL, FACW, or FAC		(A/D)
6.				That Are OBL, I ACW, of I AC	<i>-</i>	(A/B)
7				Prevalence Index workshee	t:	
8				Total % Cover of:	Multiply by:	
o	•	= Total Cov	uor.	OBL species	x 1 =	_
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Co	VCI	FACW species	x 2 =	_
1. Sambucus nigra	10	Υ	FAC	FAC species	x 3 =	_
2. Rhus typhina	10	Υ	UPL	FACU species	x 4 =	_
3.				UPL species		
4.				Column Totals:		
5.					. ,	_ ` ´
6.				Prevalence Index = B/A	· =	_
7				Hydrophytic Vegetation Ind	icators:	
8.				1 - Rapid Test for Hydrop	hytic Vegetation	
				2 - Dominance Test is >5	0%	
9				3 - Prevalence Index is ≤	3.0 ¹	
10	00	- Total Cov		4 - Morphological Adapta		porting
Herb Stratum (Plot size: 5' r)		= Total Cov	vei	data in Remarks or on	• , ,	
1. Impatiens capensis	20	Υ	FACW	Problematic Hydrophytic	Vegetation¹ (Explai	in)
2. Typha latifolia	20	Υ	OBL			
3. Poa sp*	20*	*	*	¹ Indicators of hydric soil and v		nust
4 Rumex crispus	10	N	FAC	be present, unless disturbed or problematic.		
5. Verbesina alternifolia	10	N	FAC	Definitions of Four Vegetati	on Strata:	
6. Vernonia noveboracensis	10	N	FACW	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height.		
7. Carex vulpinoidea	10	N	OBL			
9.				Sapling/Shrub – Woody plan		
**-				than 3 in. DBH and greater th	an 3.28 ft (1 m) tall.	-
10				Herb – All herbaceous (non-v	voody) plants, rega	rdless
11.				of size, and woody plants less	than 3.28 ft tall.	
12	80			Woody vine – All woody vine	s greater than 3.28	ft in
Woody Vine Stratum (Plot size: 30' r)		= Total Cov	ver	height.	- g	
1. Absent						
2.						
		-	-			
3						
4				Hydrophytic		
5		-		Vegetation Vac	NI -	
6	0		-	Present? Yes	No	
		= Total Cov	ver			
Remarks: (Include photo numbers here or on a separate						
*Species not identified beyond genus	level hav	e been	omitted	I from dominance and	prevalence	
index calculations.						

Sampling Point: W002

SOIL

Profile Desc	ription: (Describe	to the depti	n needed to docun	nent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	x Feature	s .			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 4/1	90	7.5YR 3/4	10	С	M-PL	SiCL	
					-			
	-							
				-				
1- 0.0							21 (1 5)	
Hydric Soil I	oncentration, D=Dep	letion, RM=I	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.	Location: PL	=Pore Lining, M=Matrix. tors for Problematic Hydric Soils ³ :
-			Davis Confess	(07)				•
Histosol			Dark Surface		(CO) /	AL DA 447		cm Muck (A10) (MLRA 147) past Prairie Redox (A16)
Black Hi	nipedon (A2)		Polyvalue Be Thin Dark Su				146) C	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)	Pi	edmont Floodplain Soils (F19)
	Layers (A5)		<u>✓</u> Depleted Mat		(1 2)			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark S		F6)			ery Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Dar					ther (Explain in Remarks)
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)			
Sandy M	lucky Mineral (S1) (L	.RR N,	Iron-Mangane	ese Mass	ses (F12) (LRR N,		
	147, 148)		MLRA 130					
-	leyed Matrix (S4)		Umbric Surfa					cators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent M	faterial (F	21) (MLR	A 127, 147	7) ur	nless disturbed or problematic.
	_ayer (if observed):							
Type: Nor								.,
Depth (inc	ches): <u>-</u>						Hydric Soil	Present? Yes No
Remarks:								
None.								

Project/Site: Tiltonsville to Windsor Ci	ty/County: Jefferson County Sampling Date: 04/23/2020
	State: OH Sampling Point: W003
Investigator(s): CDK/JJP Se	ection. Township, Range:
Landform (hillslope, terrace, etc.): Bench Local	relief (concave, convex, none): Concave Slope (%): <1 Long: -80.695257 Datum: NAD83
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 slop	es, unreclaimed, highwall (Mwg6D) NWI classification. None
Are climatic / hydrologic conditions on the site typical for this time of year	•
	· · · · · · · · · · · · · · · · · · ·
	sturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally problem.	
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area
Hydric Soil Present? Yes ✓ No	within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks:	
W003-PEM-CATMOD2	
Man-made strip mine bench; soil disturbed.	
Severe acid mine drainage.	
LIVEROLOGY	
HYDROLOGY Western Hydrology Indicators	Coopeday Indicators (minimum of two required)
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plan	
High Water Table (A2) Hydrogen Sulfide Saturation (A3) Oxidized Rhizosp	Odor (C1) Drainage Patterns (B10) heres on Living Roots (C3) Moss Trim Lines (B16)
Oxidized Rinzosp Water Marks (B1) Presence of Redu	
	ction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surfac	
Algal Mat or Crust (B4) Other (Explain in	
✓ 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)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches): _	
Water Table Present? Yes No Depth (inches): _	
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos,	previous inspections), if available:
N/A	
Remarks:	
Adjacent.	

Sampling Point: W003

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species	
1. Absent				·	A)
					,
2.				Total Number of Dominant	
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species	
5					A/B)
6				(,
				Prevalence Index worksheet:	
7.				Total % Cover of: Multiply by:	
8				OBL species x 1 =	
15'r	0	= Total Cov	er		
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species x 2 =	
1. Salix nigra	10	Υ	FAC	FAC species x 3 =	
2. Acer negundo	5	Υ	FAC	FACU species x 4 =	
3. Lonicera morrowii	5	Υ	FACU	UPL species x 5 =	
				Column Totals: (A)	(B)
4				Column Totals (A)	(0)
5				Prevalence Index = B/A =	
6					
7				Hydrophytic Vegetation Indicators:	
8.				1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test is >50%	
9	· ——			3 - Prevalence Index is ≤3.0 ¹	
10				4 - Morphological Adaptations ¹ (Provide suppo	rting
5 1 -	20	= Total Cov	er	data in Remarks or on a separate sheet)	rung
Herb Stratum (Plot size: 5' r)				Problematic Hydrophytic Vegetation ¹ (Explain)	
1. Onoclea sensibilis	10	Υ	FACW	1 Toblematic Trydrophytic Vegetation (Explain)	
2. Glyceria striata	10	Υ	OBL		
3. Scirpus cyperinus	5	Υ	FACW	¹ Indicators of hydric soil and wetland hydrology mu	st
				be present, unless disturbed or problematic.	
4				Definitions of Four Vegetation Strata:	
5				To a Manda de de contrato de la CAR de CAR d	- >
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles	
7				height.	3 01
8.				1.09.11	
				Sapling/Shrub – Woody plants, excluding vines, le	ess
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody) plants, regardl	220
11				of size, and woody plants less than 3.28 ft tall.	C33
12.				or organia moody prama rood man organicam	
	25	= Total Cov	or	Woody vine – All woody vines greater than 3.28 ft	in
Woody Vine Stratum (Plot size: 30' r)		- Total Cov	Ci	height.	
1. Absent					
· · · · · · · · · · · · · · · · · · ·					
2	· ——				
3					
4					
5				Hydrophytic	
				Vegetation Present? Yes No	
6				resent: resno	
		= Total Cov	er		
Remarks: (Include photo numbers here or on a separate s	sheet.)				
Open water: 75% of plot.					
open water. 7070 or plot.					

SOIL Sampling Point: W003

Profile Desc	cription: (Describe	to the depth	needed to docu	ment the in	dicator	or confirn	n the absence	of indicate	ors.)	
Depth	Matrix			x Features			- .		Б	
(inches)	Color (moist)		Color (moist)	%	Type'	Loc ²	<u>Texture</u>	-	Remarks	
0-16	10YR 2/1	100 -					Muck	-		
·	-									
	_			-						-
								-		
¹ Type: C=C	oncentration, D=De	oletion, RM=R	educed Matrix, M	S=Masked	Sand Gr	ains.	² Location: P	L=Pore Linir	ng, M=Matrix.	
Hydric Soil		,	,						oblematic Hy	dric Soils³:
Histosol	(A1)		Dark Surface	e (S7)			2	2 cm Muck (A	410) (MLRA 1 4	47)
	pipedon (A2)		Polyvalue Be		e (S8) (N	ILRA 147,			Redox (A16)	,
✓ Black H			Thin Dark Su				, <u> </u>	(MLRA 14		
Hydroge	en Sulfide (A4)		Loamy Gleye				F		odplain Soils	(F19)
Stratifie	d Layers (A5)		Depleted Ma	trix (F3)				(MLRA 13	6, 147)	
2 cm Mı	uck (A10) (LRR N)		Redox Dark	Surface (F6	3)			Very Shallov	v Dark Surface	(TF12)
	d Below Dark Surfac	ce (A11)	Depleted Da				(Other (Expla	in in Remarks)
	ark Surface (A12)		Redox Depre							
	Mucky Mineral (S1) (LRR N,	Iron-Mangan		s (F12) (LRR N,				
	A 147, 148)		MLRA 13				3			
	Sleyed Matrix (S4)		Umbric Surfa						ydrophytic veg	
-	Redox (S5)		Piedmont Flo					-	ology must be	
	Matrix (S6)		Red Parent I	Material (F2	(1) (MLR	A 127, 147	7) L	ınless distur	bed or problen	natic.
	Layer (if observed)	•								
Type: No			_							
Depth (in	ches): <u>-</u>						Hydric Soi	I Present?	Yes	No
Remarks:							•			
None.										

Project/Site: Tiltonsville to Windsor		City/C	ounty: Jefferson County	,	Sampling Date: 04/23/2020
Applicant/Owner: AEP				State: OH	Sampling Point: W004
Investigator(s): CDK/JJP		Section	on, Township, Range:		
Landform (hillslope, terrace, etc.):	Bench	Local reli	ef (concave, convex, no	ne): Concave	Slope (%): ²
Subregion (LRR or MLRA). LRR-N	l at:	40.197887	Long80.	695859	Datum: NAD83
Soil Map Unit Name: Morristown cha	annery silty clay loam, 2	25 to 70 percent slopes,	unreclaimed, highwall (Mw	g6F) NWI classific	eation. None
Are climatic / hydrologic conditions					
Are Vegetation, Soil					
Are Vegetation, Soil				explain any answe	
SUMMARY OF FINDINGS					
Livelnous has been asset on Decoust		NIa			
Hydrophytic Vegetation Present? Hydric Soil Present?		No No	Is the Sampled Area	Yes 🗸	
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:		<u> </u>			
W004-PEM-CATMOD	2				
Possible old slip area.					
Soil disturbed.					
HYDROLOGY					
Wetland Hydrology Indicators:				-	ators (minimum of two required)
Primary Indicators (minimum of o	-			Surface Soil	, ,
Surface Water (A1)		True Aquatic Plants (getated Concave Surface (B8)
		Hydrogen Sulfide Odd	es on Living Roots (C3)	Drainage Pa Moss Trim L	
Water Marks (B1)		Presence of Reduced	-		Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bur	
Drift Deposits (B3)		Thin Muck Surface (C			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rem	narks)	Stunted or S	tressed Plants (D1)
<u>✓</u> Iron Deposits (B5)				Geomorphic	, ,
Inundation Visible on Aerial I	magery (B7)			Shallow Aqu	, ,
Water-Stained Leaves (B9)					aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)
Field Observations: Surface Water Present?	es No	Donth (inches): <1			
	es No				
	es _ No		Wetland I	Hydrology Preser	nt? Yes V No No
(includes capillary fringe)					
Describe Recorded Data (stream N/A	gauge, monitoring w	ell, aerial photos, pre	vious inspections), if ava	ailable:	
Remarks:					
Seep in existing ROW.					
Coop in existing item.	1				

Sampling	Point:	W004

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species
1. Absent				That Are OBL, FACW, or FAC: $\frac{2}{}$ (A)
2.				(,,
				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				
7				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
<u> </u>	•	= Total Cov	or	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' r)		- TOTAL COV	CI	FACW species x 2 =
4 Absent				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
7.				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10				4 - Morphological Adaptations¹ (Provide supporting
_	0	= Total Cov	er	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' r)				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Equisetum arvense	70	Υ	FAC	Problematic Hydrophytic vegetation (Explain)
2. Typha latifolia	20	Υ	OBL	
3. Epilobium hirsutum	10	N	FACW	¹ Indicators of hydric soil and wetland hydrology must
_				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Tree Moody plants evaluding vines 2 in (7.6 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				
9.				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
40				than 3 in. DDIT and greater than 3.20 it (1 in) tail.
•				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vine – All woody vines greater than 3.28 ft in
30' r		= Total Cov	er	height.
Woody Vine Stratum (Plot size: 30' r)				g
1. Absent				
2				
3				
4				
···				Hydrophytic
5				Vegetation Present? Yes No
5				riesent? res NO
5	_			
	_	= Total Cov	er	

Sampling Point: W004

SOIL

Donth		to the de	pth needed to docu			01 00111111		
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	es Type ¹	Loc ²	Texture	Remarks
0-4	2.5Y 4/2	70	10YR 5/4	20	C	M	SL	Gravel and coal fragments
			7.5YR 4/6	10	С	М		·
4-16	2.5Y 4/1	65	10YR 5/4	20		M	SCL	Gravel and coal fragments
			7.5YR 4/6	10		M		·
			7.5YR 3/4		- C			
			7.51K 3/4	5	- 	M 		
T C-C		nlation DA	4-Dadwaad Matrix N	1C-Masks	d Cand Cr		21	
	indicators:	pletion, RN	1=Reduced Matrix, M	IS=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix. cators for Problematic Hydric Soils ³ :
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I MLR Sandy I Stripped	pipedon (A2) pistic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR N) d Below Dark Surfacerark Surface (A12) Mucky Mineral (S1) (A 147, 148) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) Layer (if observed)	LRR N,	Dark Surface Polyvalue B Thin Dark S Loamy Gley Depleted Ma Redox Dark Depleted Da Redox Depr Iron-Mangan MLRA 1: Umbric Surf Red Parent	elow Surface (S9 eed Matrix (F3) Surface (ark Surface (ressions (Finese Mass (F13) eloodplain S10 eloog (F13) eloodplain S10 eloog (F13)	(F2) (F6) (F7) (F8) (F12) (MLRA 13 (Soils (F19)	(147, 148) (LRR N, (122) (MLRA 14	, 148) (! : : : : : : :	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) dicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
None.								

Project/Site: Tiltonsville to Windsor	City/County: Jefferson County Sampling Date: 04/23/2020
	State: OH Sampling Point: W005
Investigator(s): CDK/JJP	Section, Township, Range:
Landform (hillslope, terrace, etc.): Terrace Loc	cal relief (concave, convex, none): Concave Slope (%): <1 Long: -80.701982 Datum: NAD83
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/F05Fh
Are climatic / hydrologic conditions on the site typical for this time of ye	
Are Vegetation, Soil, or Hydrology significantly	
Are Vegetation, Soil, or Hydrology naturally pro	
	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes V No	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes _ No	within a Wetland? Yes No
Remarks:	<u> </u>
W005-PEM-CATMOD2	
Open existing electric ROW next to road.	
Boundary open ended.	
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)
Surface Water (A1) True Aquatic Pl	
✓ High Water Table (A2) Hydrogen Sulfice ✓ Saturation (A3) Oxidized Rhizo	de Odor (C1) Drainage Patterns (B10) spheres on Living Roots (C3) Moss Trim Lines (B16)
Saturation (A3) Oxidized Kilizo Water Marks (B1) Presence of Re	
	duction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surf	
Algal Mat or Crust (B4) Other (Explain	in Remarks) Stunted or Stressed Plants (D1)
<u>✓</u> Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Aquatic Fauna (B13)	_ <u>✓</u> Microtopographic Relief (D4) _ <u>✓</u> FAC-Neutral Test (D5)
Field Observations:	FAO-Neutral Test (B5)
Surface Water Present? Yes No Depth (inches)	2
Water Table Present? Yes _ No _ Depth (inches)	
Saturation Present? Yes _ No Depth (inches)	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photo	s previous inspections) if available:
N/A	3, previous inspections), ii available.
Remarks:	
Adjacent to SOH-CDK-001.	
Microtopographic relief: Carex vulpinoidea tuss	socks.

Sampling Point: W005

-20	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30' r)	% Cover	Species?	Status	Number of Dominant Species	
1. Absent				That Are OBL, FACW, or FAC: 3	(A)
2				Total Number of Dominant	
3					(B)
4					,
5				Percent of Dominant Species That Are ORL FACW or FAC: 100	(A /D)
6.				That Are OBL, FACW, or FAC: 100	(A/B)
				Prevalence Index worksheet:	
7				Total % Cover of: Multiply by:	
8				OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15' r)		= Total Cov	/er	FACW species x 2 =	
4 Absent				FAC species x 3 =	
1.				FACU species x 4 =	
2				UPL species x 5 =	
3					(D)
4				Column Totals: (A)	(D)
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetation	
8				∠ 2 - Dominance Test is >50%	
9					
10				3 - Prevalence Index is ≤3.0 ¹	
_	0	= Total Cov	/er	 4 - Morphological Adaptations¹ (Provide suppodata in Remarks or on a separate sheet) 	orting
Herb Stratum (Plot size: 5' r)				Problematic Hydrophytic Vegetation¹ (Explain)	١
1. Typha latifolia	30	Υ	OBL	1 Toblemade Trydrophydio Vegetation (Explain)	,
2. Leersia oryzoides	30	Υ	OBL	¹ Indicators of hydric soil and wetland hydrology mu	.ot
3. Carex vulpinoidea	20	Υ	OBL	be present, unless disturbed or problematic.	เรเ
4. Impatiens capensis	10	N	FACW	Definitions of Four Vegetation Strata:	
5. Cirsium arvense	5	N	FACU	Johnson Critati ragatation duata.	
6. Apocynum cannabinum	5	N	FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cr	
7.				more in diameter at breast height (DBH), regardles height.	SS 01
8					
9.				Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than 3.28 ft (1 m) tall.	ess
10.				than 3 in. Don and greater than 3.20 it (1 iii) tail.	
11.				Herb - All herbaceous (non-woody) plants, regard	less
12.				of size, and woody plants less than 3.28 ft tall.	
12.	100	= Total Cov		Woody vine – All woody vines greater than 3.28 ft	in
Woody Vine Stratum (Plot size: 30' r)		= Total Cov	/ei	height.	
1. Absent					
2					
3					
4				Hydrophytic	
5				Vegetation Vac	
6	0			Present? Yes No No	
		= Total Cov	/er		
Remarks: (Include photo numbers here or on a separate	sheet.)				
None					

Sampling Point: W005

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	n the abs	ence of indicators	s.)	
Depth	Matrix		Redo	x Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textu	ire	Remarks	
0-16	10YR 4/2	95	7.5YR 4/6	5	С	M	SiCL			_
						-				
				-						
					-					
	_		_					_		_
1							2			
		letion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.		n: PL=Pore Lining,		I 0 - 11 - 3
Hydric Soil I								Indicators for Prob	-	
Histosol			Dark Surface		(0.0) (-	2 cm Muck (A1		7)
	ipedon (A2)		Polyvalue Be				148)	Coast Prairie R		
Black His			Thin Dark Su			147, 148)		(MLRA 147,		740)
	n Sulfide (A4) I Layers (A5)		Loamy Gleye		(FZ)		-	Piedmont Flood (MLRA 136,		-19)
	ck (A10) (LRR N)		Redox Dark		F6)			Very Shallow D		(TF12)
	Below Dark Surfac	e (A11)	Depleted Da				•	Other (Explain		(,
	rk Surface (A12)	- ()	Redox Depre				•		,	
	lucky Mineral (S1) (I	LRR N,	Iron-Mangar			LRR N,				
	147, 148)		MLRA 13							
Sandy G	leyed Matrix (S4)		Umbric Surfa	ace (F13)	(MLRA 13	36, 122)		³ Indicators of hydi	rophytic vege	tation and
-	edox (S5)		Piedmont Flo	oodplain S	Soils (F19)	(MLRA 14	1 8)	wetland hydrolo		
	Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	7)	unless disturbe	d or problema	atic.
	ayer (if observed):	:								
Type: Non	e									
Depth (inc	ches):						Hydric	Soil Present?	Yes	No
Remarks:										
None.										

Project/Site: Tiltonsville to Windsor City/C	ounty: Jefferson County Sampling Date: 04/23/2020					
	State: OH Sampling Point: W006					
Investigator(s): CDK/JJP Section						
Landform (hillslope, terrace, etc.): Floodplain Local reli	ef (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? Y	4					
Are Vegetation, Soil, or Hydrology significantly disturb						
Are Vegetation, Soil, or Hydrology naturally problems						
SUMMARY OF FINDINGS – Attach site map showing sam						
Hydrophytic Vegetation Present? Yes _ ✓ _ No Hydric Soil Present? Yes _ ✓ _ No Wetland Hydrology Present? Yes _ ✓ _ No	Is the Sampled Area within a Wetland? Yes No					
Remarks:						
W006-PEM-CAT2 section of PEM/PFO complex. Situated between existing road and Ohio River. Boundary open ended. Mapped NWI wetland.						
HYDROLOGY						
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ✓ Surface Water (A1) True Aquatic Plants (Image) ✓ High Water Table (A2) Hydrogen Sulfide Ode ✓ Saturation (A3) Oxidized Rhizosphere Water Marks (B1) Presence of Reduced Sediment Deposits (B2) Recent Iron Reductio Drift Deposits (B3) Thin Muck Surface (Compared) Algal Mat or Crust (B4) Other (Explain in Renormal Imagery) Iron Deposits (B5)	Drainage Patterns (B10) es on Living Roots (C3) Moss Trim Lines (B16) Il Iron (C4) Dry-Season Water Table (C2) In in Tilled Soils (C6) Crayfish Burrows (C8) C7) Saturation Visible on Aerial Imagery (C9) Inarks) Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No					
Remarks: Adjacent to S012.						

Sampling Point:	W006
eet:	

	Absolute	Dominant I	ndicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species	
1. Absent				· · · · · · · · · · · · · · · · · · ·	A)
2.					,
				Total Number of Dominant	٥,
3				Species Across All Strata:	В)
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 100 (A	4/B)
6					
7				Prevalence Index worksheet:	
8				Total % Cover of: Multiply by:	
	•	= Total Cove	ar .	OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Cove	F1	FACW species x 2 =	
1. Absent				FAC species x 3 =	
				FACU species x 4 =	
2.				UPL species x 5 =	
3					
4				Column Totals: (A)	(B)
5				Provolence Index = P/A =	
6				Prevalence Index = B/A =	
7				Hydrophytic Vegetation Indicators:	
8.				1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test is >50%	
9	· ——			3 - Prevalence Index is ≤3.0 ¹	
10				4 - Morphological Adaptations ¹ (Provide suppo	rtina
Heat Otesture (District 5')	0	= Total Cove	er	data in Remarks or on a separate sheet)	9
Herb Stratum (Plot size: 5' r)	100	Υ	EACW.	Problematic Hydrophytic Vegetation ¹ (Explain)	
Phalaris arundinacea	100	<u> </u>	FACW		
2				1 adicates of hydric acil and well and hydrology	-4
3				¹ Indicators of hydric soil and wetland hydrology mu be present, unless disturbed or problematic.	St
4					
				Definitions of Four Vegetation Strata:	
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm	n) or
6				more in diameter at breast height (DBH), regardles	s of
7				height.	
8				Sapling/Shrub – Woody plants, excluding vines, le	222
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10					
11				Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.	ess
12.				of size, and woody plants less than 5.20 it tall.	
·	100	= Total Cove	·r	Woody vine - All woody vines greater than 3.28 ft	in
Woody Vine Stratum (Plot size: 30' r)		- Total Cove	;I	height.	
1. Absent					
					
2.	· ——				
3					
4				Hydrophytic	
5				Vegetation	
6				Present? Yes No	
	0	= Total Cove	er		
Remarks: (Include photo numbers here or on a separate	_				
·	sileet.)				
None					

Sampling Point: W006

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirn	n the abser	nce of indicato	ors.)	
Depth	Matrix			x Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-16	10YR 4/2	95	7.5YR 4/6	5	С	M	SiCL	Alluvial		
	-							<u> </u>		
					-		-			
								<u> </u>		
				<u> </u>	-					
			-							
								<u> </u>		
	-				-					
			-	-						.
		letion, RM	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Linin		3
Hydric Soil I							Inc	dicators for Pr	_	
Histosol			Dark Surface						A10) (MLRA 14	17)
	pipedon (A2)		Polyvalue Be				148)	='	Redox (A16)	
Black His			Thin Dark S			147, 148)		(MLRA 14		- 40)
	n Sulfide (A4)		Loamy Gley		(F2)		_		oodplain Soils (F19)
	l Layers (A5) ck (A10) (LRR N)		Depleted Ma Redox Dark		E6)			(MLRA 13	v Dark Surface	(TE12)
	Below Dark Surfac	Δ (Δ11)	Redox Dark Depleted Da						in in Remarks)	, ,
	rk Surface (A12)	C (A11)	Redox Depre				_	_ Other (Expla	iii iii remana)	
	lucky Mineral (S1) (I	LRR N.	Iron-Mangar			LRR N.				
-	147, 148)	,	MLRA 13		,	,				
	leyed Matrix (S4)		Umbric Surfa	•	(MLRA 1	36, 122)	3	Indicators of hy	ydrophytic vege	etation and
Sandy R	edox (S5)		Piedmont Flo	oodplain S	Soils (F19)	(MLRA 14	18)	wetland hydr	ology must be	present,
Stripped	Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	7)	unless disturl	bed or problem	atic.
	ayer (if observed):									
Type: Non	ie									
Depth (inc	ches):						Hydric S	Soil Present?	Yes_	No
Remarks:							1 -			<u></u>
None.										
110110.										

Project/Site: Tiltonsville to Windsor	City/Coı	unty:		Sampling Date: 04/23/2020		
Applicant/Owner: AEP	City/Cou	,	State: OH	Sampling Point: W006		
CDK/LID	Section					
Landform (hillslope, terrace, etc.): Floodplain				Slope (%): <1		
Subregion (LRR or MLRA): LRR-N Lat:	40.208160	Long80.6	668611	Datum: NAD83		
Soil Map Unit Name: Tioga silt loam, occasionally floode	ed (Tg)	Long	NIMI classifi	cation: PFO1Ch/PEM1Ch		
Are climatic / hydrologic conditions on the site typical fo						
				· ·		
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology			explain any answe			
SUMMARY OF FINDINGS – Attach site m	ap showing samp	oling point location	ons, transects	s, important features, etc.		
Hydrophytic Vegetation Present? Yes	_ No	s the Sampled Area				
Hydric Soil Present? Yes	NI-	within a Wetland?	Yes 🗸	No		
Wetland Hydrology Present? Yes	_ No			<u> </u>		
Remarks:	O/DEM	_				
W006-PFO-CAT2, PFO section of PF	•	₹.				
Forested floodplain between road and	i Onio River.					
Mapped NWI wetland.						
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Indic	ators (minimum of two required)		
Primary Indicators (minimum of one is required; check	(all that apply)		Surface Soil			
	True Aquatic Plants (B1	14)		getated Concave Surface (B8)		
	Hydrogen Sulfide Odor			atterns (B10)		
	Oxidized Rhizospheres		Moss Trim L			
	Presence of Reduced I			Water Table (C2)		
	Recent Iron Reduction					
	Thin Muck Surface (C7			isible on Aerial Imagery (C9)		
	Other (Explain in Rema	arks)	Stunted or S	Stressed Plants (D1)		
Iron Deposits (B5)			Geomorphic	Position (D2)		
Inundation Visible on Aerial Imagery (B7)			Shallow Aqu	uitard (D3)		
<u>✓</u> Water-Stained Leaves (B9)			Microtopographic Relief (D4)			
Aquatic Fauna (B13)			FAC-Neutra	I Test (D5)		
Field Observations:	5 " " · · · · · -					
	Depth (inches):					
	Depth (inches):					
Saturation Present? Yes No	Depth (inches): -	Wetland F	lydrology Prese	nt? Yes No No		
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previ	ous inspections), if ava	ilable:			
N/A						
Remarks:						
Adjacent to S012.						

Sampling Point: W006

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species
1. Acer saccharinum	30	Υ	FACW	That Are OBL, FACW, or FAC: $\frac{2}{}$ (A)
2				(,,,
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				(**2)
				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				OBL species x 1 =
15'r	30	= Total Cov	er er	
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species x 2 =
1. Absent				FAC species x 3 =
2.				FACU species x 4 =
3.				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				
7				Hydrophytic Vegetation Indicators:
8.				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10				4 - Morphological Adaptations ¹ (Provide supporting
ri -	0	= Total Cov	er er	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' r)				Problematic Hydrophytic Vegetation ¹ (Explain)
1. Phalaris arundinacea	90	Υ	FACW	1 Toblematic Trydrophytic Vegetation (Explain)
2. Boehmeria cylindrica	10	N	FACW	
3.				¹ Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				To a Manda de alordo conhedia en inco O in (7.0 cm) en
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				g.m
				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.				or orego, and troody planto loss than ores it tam
	100	= Total Cov	uor .	Woody vine – All woody vines greater than 3.28 ft in
M = = d =) (i = = Ot == t == = (D) = t = i = = 30' r		- Total Cov	Ci	height.
vvoogv vine Stratum (Plot size: °° '				
Woody Vine Stratum (Plot size: 30' r) Absent				
1. Absent				
1. Absent 2.				
1. Absent				
1. Absent 2 3				
1. Absent 2 3 4				Hydrophytic
1. Absent 2				Vegetation
1. Absent 2 3 4				

Sampling Point: W006

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirn	n the abser	nce of indicato	ors.)	
Depth	Matrix			x Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0-16	10YR 4/2	95	7.5YR 4/6	5	С	M	SiCL	Alluvial		
	-									
					-		-			
								<u> </u>		
				<u> </u>	-					
			-							
								<u> </u>		
	-				-					
			-	-	-					.
		letion, RM	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		PL=Pore Linin		3
Hydric Soil I							Inc	dicators for Pr	_	
Histosol			Dark Surface						A10) (MLRA 14	17)
	pipedon (A2)		Polyvalue Be				148)	='	Redox (A16)	
Black His			Thin Dark S			147, 148)		(MLRA 14		- 40)
	n Sulfide (A4)		Loamy Gley		(F2)		_		oodplain Soils (F19)
	l Layers (A5) ck (A10) (LRR N)		Depleted Ma Redox Dark		E6)			(MLRA 13	v Dark Surface	(TE12)
	Below Dark Surfac	Δ (Δ11)	Redox Dark Depleted Da						in in Remarks)	, ,
	rk Surface (A12)	C (A11)	Redox Depre				_	_ Other (Expla	iii iii remana)	
	lucky Mineral (S1) (I	LRR N.	Iron-Mangar			LRR N.				
-	147, 148)	,	MLRA 13		, , ,	,				
	leyed Matrix (S4)		Umbric Surfa	•	(MLRA 1	36, 122)	3	Indicators of hy	ydrophytic vege	etation and
Sandy R	edox (S5)		Piedmont Flo	oodplain S	Soils (F19)	(MLRA 14	18)	wetland hydr	ology must be	present,
Stripped	Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	7)	unless disturl	bed or problem	atic.
	ayer (if observed):									
Type: Non	ie									
Depth (inc	ches):						Hydric S	Soil Present?	Yes_	No
Remarks:							1 -			<u></u>
None.										
110110.										

Project/Site: Tiltonsville to Windsor	City/County: Jefferson County Sampling Date: 4/22/202
	State: OH Sampling Point: W007
LID CDV	Section, Township, Range:
Subregion (LRR or MLRA): LRRN Lat: 40.20335	cal relief (concave, convex, none): Concave Slope (%): 0 Long: -80.68541 Datum:
Soil Man Unit Name: Morristown channery silty clay loam, 0 to 8 perc	cent slopes, unreclaimed, highwall NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of ye	
	disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology naturally pr	
SUMMARY OF FINDINGS – Attach site map showing	g sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	In the Consulted Asses
Hydric Soil Present? Yes No	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks:	
- Area sample point for PFO/Adjacent wetland	
- Wetland within a possible old strip mine area	due to spoil within soil
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
Surface Water (A1) True Aquatic F	
✓ High Water Table (A2) — Hydrogen Sulf	
✓ Saturation (A3) Oxidized Rhizo Water Marks (B1) Presence of Ro	
	eduction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Sur	
✓ Algal Mat or Crust (B4) Other (Explain	<u> </u>
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)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches	
Water Table Present? Yes No Depth (inches	
Saturation Present? Yes No Depth (inches	s): 0 Wetland Hydrology Present? Yes No No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:
N/A	,
Remarks:	
- Possible source of hydro precipitation and ru	n off.
- Wetland abuts stream outside of study area.	
,	

Sampling Point: W007

•	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30'	% Cover			Number of Dominant Species
1. Acer negundo	60	YES	FAC	That Are OBL, FACW, or FAC: $\frac{4}{}$ (A)
2. Ulmus americana	5	NO	FACW	Total Number of Dominant
3. Ulmus rubra	5	NO	FAC	Species Across All Strata: $\frac{4}{}$ (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6				(VIII)
7.				Prevalence Index worksheet:
8			-	Total % Cover of: Multiply by:
	^	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')	-	10101 001	01	FACW species x 2 =
1. Lindera benzoin	5	YES	FAC	FAC species x 3 =
2. Ulmus rubra	5	YES	FAC	FACU species x 4 =
3.		-	-	UPL species x 5 =
4			-	Column Totals: 0 (A) 0 (B)
5				(-)
				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 ¹
10				4 - Morphological Adaptations ¹ (Provide supporting
Hart Otation (Blatister 5)	0	= Total Cov	er	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' 1 Cryptotaenia canadensis	5	YES	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
··· ·			<u> </u>	
2	_			¹ Indicators of hydric soil and wetland hydrology must
3				be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6			-	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8			-	
9.			-	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10			-	than 3 m. bbit and greater than 3.20 ft (1 m) tail.
11.				Herb – All herbaceous (non-woody) plants, regardless
12.				of size, and woody plants less than 3.28 ft tall.
12.	100	- Total Cav		Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30')		= Total Cov	ei	height.
1 None observed		-	-	
2				
3				
4				Hydrophytic
5				Vegetation
6				Present? Yes No
	0	= Total Cov	er	
Remarks: (Include photo numbers here or on a separate - None	sheet.)			

SOIL Sampling Point: W007

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirm	n the abse	nce of indicators.)
Depth	Matrix		Redo	x Feature	es	-		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0 - 17	2.5y 3/2	90	10YR 3/4	10	С	М	SiCL	Saturated w/spoil at 10%
			-				-	
			-					
		-	-	-	-			
		-						<u> </u>
		-						
			_					
	-	-	-					
		-			_			
		letion, RM	I=Reduced Matrix, M	S=Maske	d Sand G	rains.		PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						In	dicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)			_	_ 2 cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Be	elow Surfa	ace (S8) (I	MLRA 147	, 148)	Coast Prairie Redox (A16)
Black His	stic (A3)		Thin Dark S			147, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gley		(F2)		_	_ Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	,				
	Below Dark Surfac	e (A11)	Depleted Da				_	_ Very Shallow Dark Surface (TF12)
	irk Surface (A12)		Redox Depre			# DD 11	_	_ Other (Explain in Remarks)
	lucky Mineral (S1) (I	LRR N,	Iron-Mangar		ses (F12)	(LRR N,		
	147, 148)		MLRA 13	-	/MI DA 4	26 422\		3 Indicators of budraphytic varieties and
	leyed Matrix (S4)		Umbric Surfa Piedmont Flo					³ Indicators of hydrophytic vegetation and
	edox (S5) Matrix (S6)		Red Parent					wetland hydrology must be present, unless disturbed or problematic.
	ayer (if observed):		Reu Falelii	viateriai (i	-21) (IVILE	KA 121, 14	<i>'</i>)	unless disturbed or problematic.
Type: No								
							1	- u- u V
Depth (inc	ches): -						Hydric	Soil Present? Yes No No
Remarks:	Mono							
- 1	None							

Project/Site: Tiltonsville to Windsor City/County: Jefferson County	Sampling Date: 4/22/202
Applicant/Owner: AEP State: OH	
Investigator(s): JJP - CDK Section, Township, Range:	<u> </u>
Landform (hillslope terrace etc.). Depression Local relief (concave convey none). Concave	Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat: 40.208551 Long: -80.670396	Datum: NAD83
Soil Map Unit Name: Lowell silty clay loam, 40 to 70 percent slopes NWI classif	ication:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in	
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances"	
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answ	
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transect	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes V No Is the Sampled Area within a Wetland? Yes V No Is the Sampled Area within a Wetland?	, No
- Area sample point for PEM/Adjacent wetland W008-PEM-CATMOD2	
- Area mapped as NWI	
- Wetland positioned at foot of slope between railroad tracks and highway	
HYDROLOGY	
Wetland Hydrology Indicators: Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface So	` ′
	egetated Concave Surface (B8)
	atterns (B10)
	Lines (B16) n Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Bu	· ·
	Visible on Aerial Imagery (C9)
	Stressed Plants (D1)
Iron Deposits (B5)	c Position (D2)
Inundation Visible on Aerial Imagery (B7) Shallow Aq	
	raphic Relief (D4)
Aquatic Fauna (B13) FAC-Neutra	al Test (D5)
Field Observations:	
Surface Water Present? Yes V No Depth (inches): 12 Water Table Present? Yes No Depth (inches): 0	
Saturation Present? Yes V No Depth (inches): 0 Wetland Hydrology Prese	ent? Yes No
(includes capillary fringe)	110
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
N/A	
Remarks:	
- Possible source of hydro ground water, precipitation, and run off	
- Wetland abouts stream outside of study area.	
- True aquatic plant Lemna minor	

Sampling Point: W008

201	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30'		Species?	Status	Number of Dominant Species
1. None observed				That Are OBL, FACW, or FAC: $\frac{2}{}$ (A)
2		-		Total Number of Deminent
3			-	Total Number of Dominant Species Across All Strata: 2 (B)
4.			-	(2)
			_	Percent of Dominant Species That Are OBL FACW or FAC: 100 (A/B)
5				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
8				
	0	= Total Cov	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1. None observed				FAC species x 3 =
2		-	-	FACU species x 4 =
3.			-	UPL species x 5 =
			_	Column Totals: 0 (A) 0 (B)
4				(7)
5				Prevalence Index = B/A =
6			-	Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9			-	2 - Dominance Test is >50%
10.			-	3 - Prevalence Index is ≤3.0 ¹
	^	= Total Cov	uor .	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5')		- Total Cov	CI	data in Remarks or on a separate sheet)
1. Typha latifolia	35	YES	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
2. Phalaris arundinacea	30	YES	FACW	
3 Acorus calamus	15			¹ Indicators of hydric soil and wetland hydrology must
o		NO	OBL	be present, unless disturbed or problematic.
4. Lemna minor	10	NO	OBL	Definitions of Four Vegetation Strata:
5				
6		-	-	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7.			-	more in diameter at breast height (DBH), regardless of height.
			_	neight.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12			-	
	100	= Total Cov	/er	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30')				height.
1. None observed		-	-	
2.			-	
3				
4				Hydrophytic
5				Vegetation
6		-		Present? Yes No
	0	= Total Cov	/er	
Domarka: (Include photo numbero bero er en a congreto				
Remarks: (Include photo numbers here or on a separate	sneet.)			
- None				

SOIL Sampling Point: W008

Profile Desc	ription: (Describe	to the de	pth needed to docur	nent the	indicator	or confirn	n the absen	ce of indicators.)		
Depth	Matrix	0/		x Featur	1		- .			
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u> %</u>	Type'	Loc ²	Texture		Remarks	00/
0 - 17	5Y 4/1	90	N 2/-	5			SiL	Saturated w	/spoil at 2	0%
			5Y 4/4	5	<u>C</u>	M-PL		<u> </u>		
	-									
						· ——	-	_		
										_
	-									
		•								
	-			-		· ——				
					_					
¹ Type: C=Co	oncentration, D=Dep	letion, RM	I=Reduced Matrix, M	S=Maske	ed Sand Gr	ains.	² Location:	PL=Pore Lining, N	Л=Matrix.	
Hydric Soil I	ndicators:							icators for Probl		dric Soils³:
Histosol	(A1)		Dark Surface	e (S7)				2 cm Muck (A10)	(MLRA 14	17)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surf	ace (S8) (I	VILRA 147,	, 148)	Coast Prairie Re	dox (A16)	
Black Hi	stic (A3)		Thin Dark Su			147, 148)		(MLRA 147, 1		
	n Sulfide (A4)		Loamy Gleye		(F2)			Piedmont Floodp	•	F19)
	Layers (A5)		Popleted Ma		(=0)			(MLRA 136, 1	47)	
	ck (A10) (LRR N)	o (A11)	Redox Dark					Van Challau Da	rk Curfoss	(TE12)
	d Below Dark Surfac ark Surface (A12)	e (ATT)	Depleted Da Redox Depre		, ,		_	Very Shallow Da Other (Explain in		(1112)
	lucky Mineral (S1) (I	RR N	Iron-Mangan			(I RR N		Other (Explain in	i Kemarks)	
	147, 148)	-1414 14,	MLRA 13		000 (1 12) ((=111111,				
	lleyed Matrix (S4)		Umbric Surfa	-	(MLRA 1	36, 122)	³	ndicators of hydro	phytic vege	etation and
	ledox (S5)		Piedmont Flo					wetland hydrolog		
-	Matrix (S6)		Red Parent I					unless disturbed		
Restrictive I	ayer (if observed):									
Type: No	ne									
Depth (inc	ches): -						Hydric S	oil Present? Ye	es 🖊	No
Remarks:	•									
N	one									

Project/Site: Tiltonsville to Win	dsor	City/C	ounty: Jefferson Count	у	Sampling Date: 04/21/2020
Applicant/Owner: AEP				State: OH	Sampling Point: UPL-001/002
Investigator(s): CDK/JJP		Section			<u> </u>
Landform (hillslope terrace et	rc.). Floodplain	L ocal reli	ef (concave convex n	one). None	Slone (%): <1
Landform (hillslope, terrace, et Subregion (LRR or MLRA): LF	R-N	. 40.185311	Long: -80).702694	Olope (70)
Soil Map Unit Name: Nolin silt	loam, 0 to 3 percent slor	ເ. pes. occasionally floode	Long d (No)	NA// 1 '6'	
Are climatic / hydrologic condit		-			·
Are Vegetation, Soil	, or Hydrology	significantly distur	bed? Are "Norm	al Circumstances"	present? Yes No
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (If needed,	explain any answe	ers in Remarks.)
SUMMARY OF FINDING	3S – Attach site r	map showing sam	pling point locati	ions, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Ves	No			
Hydric Soil Present?		No	Is the Sampled Area		No 🗸
Wetland Hydrology Present?		No	within a Wetland?	res	NO
Remarks:					
Upland data point for	or W001/W002.				
Open floodplain.					
Within mapped NW	I boundary.				
	•				
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum	of one is required; chec	ck all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	_	True Aquatic Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Odd			atterns (B10)
Saturation (A3)		Oxidized Rhizosphere			
Water Marks (B1)		Presence of Reduced			Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bu	
Drift Deposits (B3)		Thin Muck Surface (C			/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Iron Deposits (B5)	_	Other (Explain in Ren	iaiks)	Sturited or s	Stressed Plants (D1)
Inundation Visible on Ae	rial Imagery (R7)			Shallow Aqu	` '
Water-Stained Leaves (E					aphic Relief (D4)
Aquatic Fauna (B13)	70)			FAC-Neutra	
Field Observations:					
Surface Water Present?	Yes No 🗸	Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present?		Depth (inches): -		Hydrology Prese	nt? Yes / No
(includes capillary fringe)				- ilabla.	
Describe Recorded Data (str	eam gauge, monitoring	weii, aeriai priotos, pre	vious inspections), if av	/allable:	
Remarks:					
None.					
INOTIC.					

Sampling Point: UPL-001/002

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species
1. Absent				That Are OBL, FACW, or FAC: $\frac{1}{2}$ (A)
2.				
				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 50 (A/B)
6				
7				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
0				OBL species 0 x 1 = 0
Sapling/Shrub Stratum (Plot size: 15' r)		= Total Cov	er	FACW species $\frac{0}{0}$ $x 2 = \frac{0}{0}$
4 Absent				FAC species $\frac{75}{}$ x 3 = $\frac{225}{}$
2				FACU species $\frac{25}{2}$ $\times 4 = \frac{100}{2}$
3				UPL species <u>0</u> x 5 = <u>0</u>
4				Column Totals: 100 (A) 325 (B)
5				
				Prevalence Index = B/A = 3.25
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				
10				3 - Prevalence Index is ≤3.0¹
	0	= Total Cov	er	4 - Morphological Adaptations ¹ (Provide supporting
Herb Stratum (Plot size: 5'r)		10101 001	0.	data in Remarks or on a separate sheet)
1 Reynoutria japonica	50	Υ	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
2 Floerkea proserpinacoides	25	Y	FAC	
Z	15		FACU	¹ Indicators of hydric soil and wetland hydrology must
J				be present, unless disturbed or problematic.
4. Allium vineale	10	N	FACU	Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7.				more in diameter at breast height (DBH), regardless of height.
				noight.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	100	= Total Cov	er	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30' r)				height.
1. Absent				
2				
3				
4				Hydrophytic
_				Vegetation
5				Present? Yes No
5				110001111 100
	_	= Total Cov	er	100

Sampling Point: UPL-001/002

Profile Description: (Describe to the de	epth needed to docu	ment the	indicator	or confirm	n the absence o	of indicate	ors.)	
Depth Matrix		ox Feature		. 3	_		_	
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0-16 10YR 4/2 67	10YR 4/3	20	_ <u>C</u>	<u>M</u>	SCL	-		
	10YR 4/1	10	_ D	M				
	7.5YR 4/6	3	С	M				
		_			-			
		_						
		_						
					<u></u>			
¹ Type: C=Concentration, D=Depletion, R	M=Reduced Matrix M	S=Maske	nd Sand G	raine	² Location: PL=	=Pore Linir	na M=Matrix	
Hydric Soil Indicators:	VI-Reduced Matrix, IV	3-Maske	u Sanu Gi	iaiiis.			roblematic Hydr	ic Soils ³ :
Histosol (A1)	Dark Surfac	e (S7)					A10) (MLRA 147	
Histic Epipedon (A2)	Polyvalue B	. ,	ace (S8) (I	MLRA 147			Redox (A16)	,
Black Histic (A3)	Thin Dark S					(MLRA 14	17, 148)	
Hydrogen Sulfide (A4)	Loamy Gley		(F2)				oodplain Soils (F	19)
Stratified Layers (A5)	Depleted Ma					(MLRA 13		
2 cm Muck (A10) (LRR N)	Redox Dark		. ,				w Dark Surface (¯ ain in Remarks)	IF12)
Depleted Below Dark Surface (A11)Thick Dark Surface (A12)	Depleted Da Redox Depr				0	illei (Expia	alli ili Relliaiks)	
Sandy Mucky Mineral (S1) (LRR N,	Iron-Mangar			(LRR N,				
MLRA 147, 148)	MLRA 1		` ,	,				
Sandy Gleyed Matrix (S4)	Umbric Surf						ydrophytic vegeta	
Sandy Redox (S5)	Piedmont FI					-	ology must be pr	
Stripped Matrix (S6)	Red Parent	Material (F21) (MLF	RA 127, 14	7) un	less distur	bed or problema	tic.
Restrictive Layer (if observed): Type: None								
					1			
Depth (inches):	<u> </u>				Hydric Soil I	Present?	Yes	No
Remarks:								
None.								

Project/Site: Tiltonsville to Windsor	City/County: Jeffer	rson County	Sampling Date: 04/23/2020
Applicant/Owner: AEP		State: OH	Sampling Point: UPL 003/004
Investigator(s): CDK/JJP	Section, Township	. Range:	
Landform (hillslope, terrace, etc.): Bench Subregion (LRR or MLRA): LRR-N Lat: 40.1	Local relief (concave,	convex, none): None	Slope (%): 1
Subregion (LRR or MLRA): LRR-N Lat: 40.1	98366	Long: -80.695319	Datum: NAD83
Soil Map Unit Name: Morristown channery silty clay loam, 8 to 2	25 percent slopes, unreclaimed, h	ighwall (Mwg6D) NWI classifica	etion: None
Are climatic / hydrologic conditions on the site typical for this			
Are Vegetation, Soil _ ✓ _, or Hydrology s		Are "Normal Circumstances" p	
Are Vegetation, Soil, or Hydrology n		(If needed, explain any answer	
SUMMARY OF FINDINGS – Attach site map	• •		ŕ
Hadarahatia Vandatian Barasato Van	- 4		
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N	, v is the Sain		🗸
Wetland Hydrology Present? Yes N		etland? Yes	No
Remarks:			
Upland data point for W003 and W004.			
Man-made bench; soil disturbed.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicat	ors (minimum of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surface Soil (Cracks (B6)
	Aquatic Plants (B14)		etated Concave Surface (B8)
	rogen Sulfide Odor (C1)	Drainage Pat	
	lized Rhizospheres on Living I sence of Reduced Iron (C4)		nes (B16) Vater Table (C2)
	ent Iron Reduction in Tilled Sc		
	Muck Surface (C7)		sible on Aerial Imagery (C9)
	er (Explain in Remarks)		ressed Plants (D1)
Iron Deposits (B5)		Geomorphic I	Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquit	ard (D3)
Water-Stained Leaves (B9)			phic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)
Field Observations:	- 41- (C 1 2)		
	oth (inches): oth (inches):		
	oth (inches):	Wetland Hydrology Present	t? Yes No
(includes capillary fringe)			1: 165 110
Describe Recorded Data (stream gauge, monitoring well, a	erial photos, previous inspec	tions), if available:	
N/A			
Remarks: No hydrology indicators observed.			
The flydrology indicators observed.			

Sampling Point: UPL 003/004

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30' r)		Species?		Number of Dominant Species	
1. Absent				That Are OBL, FACW, or FAC: $\frac{0}{}$ (A)	
2.					
				Total Number of Dominant	
3				Species Across All Strata: 5 (B)	
4				Percent of Dominant Species	
5				That Are OBL, FACW, or FAC: 0 (A/E	3)
6					
7				Prevalence Index worksheet:	
8.				Total % Cover of: Multiply by:	
<u> </u>	0	= Total Cov	or	OBL species <u>0</u> x 1 = <u>0</u>	
Sapling/Shrub Stratum (Plot size: 15' r)		- Total Cov	EI	FACW species $\frac{0}{x}$ $x = \frac{0}{x}$	
1 Robinia pseudoacacia	15	Υ	FACU	FAC species $\frac{15}{}$ x 3 = $\frac{45}{}$	
'·	10		UPL		
Z				•	
3. Rubus occidentalis		Υ	UPL	UFL species x 3 =	
4				Column Totals: <u>135</u> (A) <u>560</u> (B)
5					
6.				Prevalence Index = B/A = $\frac{4.15}{}$	
				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetation	
8				2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0 ¹	
10					
	35	= Total Cov	er	 4 - Morphological Adaptations¹ (Provide supportir data in Remarks or on a separate sheet) 	ıg
Herb Stratum (Plot size: 5' r)					
1. Solidago canadensis	30	Υ	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)	
2 Lonicera japonica	30	Υ	FACU		
3. Lamium purpureum	15	N	UPL	¹ Indicators of hydric soil and wetland hydrology must	
J	15		FAC	be present, unless disturbed or problematic.	
T				Definitions of Four Vegetation Strata:	
5. Achillea millefolium	5	N	FACU	The Week state and other to the (7.0 cm)	
6. Galium aparine	5	N	FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of	
7				height.	"
8.					
				Sapling/Shrub – Woody plants, excluding vines, less	i
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody) plants, regardless	s
11				of size, and woody plants less than 3.28 ft tall.	
12					
	100	= Total Cov	er	Woody vine – All woody vines greater than 3.28 ft in	
Woody Vine Stratum (Plot size: 30' r)				height.	
1. Absent					
1. Absent					
1. Absent 2.					
1. Absent 2 3					
1. Absent 2 3 4				Hydrophytic	
1. Absent 2 3				Hydrophytic Vegetation	
1. Absent 2 3 4					
1. Absent 2				Vegetation	

Sampling Point: UPL 003/004

(inches)	Matrix	0/		dox Feature		12	T 4	_	
0-16	Color (moist) 2.5Y 4/3	<u>%</u> 70	Color (moist) 2.5Y 4/1	<u>%</u> 15	<u>Type</u> ¹ D	Loc ²	<u>Texture</u> SiCL	Gravel/coal fra	Remarks aments
<u></u>	2.51 4/5						SICL	Giavei/coai iia	ginents.
			7.5YR 4/6	10	С	_ <u>M</u>			
			10YR 5/6	5	С	M	_		
		_						-	
					-				
					-				
vne: C=Cr	oncentration D=De	enletion RM	1=Reduced Matrix,	MS=Maske	d Sand G	Grains	² Location: P	L=Pore Lining, N	1=Matrix
	Indicators:	spiction, rei	T Treduced Wattix,	WIG WIGORG	a oana c	namo.			ematic Hydric Soils ³ :
_ Histosol			Dark Surfa	ce (S7)				2 cm Muck (A10)	
	oipedon (A2)				ce (S8)	(MLRA 147,		Coast Prairie Red	•
Black His			Thin Dark		. ,	•	, <u>—</u>	(MLRA 147, 14	
_ Hydroge	en Sulfide (A4)		Loamy Gle	yed Matrix	(F2)		F	Piedmont Floodp	lain Soils (F19)
	d Layers (A5)		Depleted N					(MLRA 136, 14	
	ick (A10) (LRR N)	(4.4.1)	Redox Dar	,	,			-	rk Surface (TF12)
	d Below Dark Surfa	ace (A11)		ark Surface	. ,			Other (Explain in	Remarks)
	ark Surface (A12)	/I DD N		ressions (F		/I DD N			
	Mucky Mineral (S1) A 147, 148)	(LKK N,	Iron-Manga MLRA		es (F IZ)	(LKK N,			
	Gleyed Matrix (S4)		Umbric Su	•	(MIRA 1	36, 122)	3Inc	dicators of hydro	phytic vegetation and
	Redox (S5)					9) (MLRA 14			y must be present,
-	Matrix (S6)					^` RA 127, 147		unless disturbed	
estrictive L	Layer (if observed	d):							·
Type: Non	ne								
							Hydric Soi	I Present? Ye	es No_ <u> </u>
Depth (inc	ches): <u>-</u>								
Depth (inc	ches): -								
emarks:		ors obse	erved.						
emarks:	c soil indicate	ors obse	erved.						
emarks:		ors obse	erved.						
emarks:		ors obse	erved.						
emarks:		ors obse	erved.						
emarks:		ors obse	erved.						
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Remarks:		ors obse	erved.						
emarks:		ors obse	erved.						
emarks:		ors obse	erved.						

Project/Site: Tiltonsville to Windsor	City/County	v. Jefferson County	_ Sampling Date:04/23/2020
Applicant/Owner: AEP		State: OH	Sampling Point: UPL-005
Investigator(s): CDK/JJP	Section, To	ownship, Range:	
Landform (hillslope, terrace, etc.): Terrace Subregion (LRR or MLRA): LRR-N Lat	Local relief (cr	oncave, convex, none): None	Slope (%): 1
Subregion (LRR or MLRA). LRR-N	. 40.187169	Long: -80.702263	Datum: NAD83
Soil Map Unit Name: Nolin silt loam, 0 to 3 percent slop	es, occasionally flooded (No)) NWI classifi	cation: None
Are climatic / hydrologic conditions on the site typical fr			
Are Vegetation, Soil, or Hydrology			
Are Vegetation, Soil, or Hydrology		(If needed, explain any answ	
SUMMARY OF FINDINGS – Attach site n	nap showing samplir	ng point locations, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes	_ No Is t	he Sampled Area	
	No with	nin a Wetland? Yes	No
	No		
Remarks:			
Upland data point for W005.			
Edge of existing electric ROW.			
HYDROLOGY			
Wetland Hydrology Indicators:		Socondary India	eators (minimum of two required)
Primary Indicators (minimum of one is required; chec	rk all that annly)	Surface Soi	· · · · · · · · · · · · · · · · · · ·
	True Aquatic Plants (B14)		egetated Concave Surface (B8)
	Hydrogen Sulfide Odor (C		atterns (B10)
	Oxidized Rhizospheres on		
	Presence of Reduced Iron		Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in 1		
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation \	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks	s) Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)			c Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aq	
Water-Stained Leaves (B9)		· -	raphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutra	al Test (D5)
Field Observations:	5		
	_ Depth (inches):		
	Depth (inches): - Depth (inches): -		ent? Yes No
Saturation Present? Yes No	_ Deptn (inches):	Wetland Hydrology Prese	nt? Yes No
Describe Recorded Data (stream gauge, monitoring	well, aerial photos, previous	inspections), if available:	
N/A			
Remarks:			
No hydrology indicators observed.			

Number of Dominant Species That Are OBL, FACW, or FAC: 1	- - - -
That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: 3	(B) (A/B)
Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3	(A/B)
Species Across All Strata: 3	(A/B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3	(A/B)
Prevalence Index worksheet: Total % Cover of:	- - - - -
Prevalence Index worksheet: Total % Cover of:	- - - - -
Total % Cover of:	- - - -
	- - - -
OBL species 0 x 1 = 0 FACW species 10 x 2 = 20 FAC species 25 x 3 = 75 FACU species 65 x 4 = 260 UPL species 10 x 5 = 50 Column Totals: 110 (A) 405 Prevalence Index = B/A = 3.68 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	- - - -
FACW species 10	- - - - - _ (B)
FACW species 10	 _ _ _ (B)
UPL	- - - _ (B)
FACU species 65	_ _ _ (B) _
UPL species 10 x 5 = 50 Column Totals: 110 (A) 405 Prevalence Index = B/A = 3.68 Hydrophytic Vegetation Indicators:	(B)
Column Totals: 110 (A) 405 Prevalence Index = B/A = 3.68 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	_ (B)
Prevalence Index = B/A = 3.68 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	_ (B)
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	_
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%	
2 - Dominance Test is >50%	
3 - Prevalence Index is <3 01	
4 - Morphological Adaptations ¹ (Provide supp	oorting
data in Remarks or on a separate sheet)	Jording
Problematic Hydrophytic Vegetation ¹ (Explain	n)
FACU Troblematic Trydrophytic Vegetation (Explain	1)
FAC	
FACU Indicators of hydric soil and wetland hydrology m	ıust
FACU	
— Definitions of Four Vegetation Strata:	
	cm) or
than 3 in DRH and greater than 3.28 ft (1 m) tall	iess
than o in. BBN and greater than 0.20 it (1 in) tail.	
Herb – All herbaceous (non-woody) plants, regar	dless
— of size, and woody plants less than 3.28 ft tall.	
Woody vine – All woody vines greater than 3.28	ft in
INVAR I	
Hydrophytic	
Cover	
	FACU FACU FACW Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 or more in diameter at breast height (DBH), regardle height. Sapling/Shrub – Woody plants, excluding vines, than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 height.

Sampling Point: UPL-005

SOIL

Profile Desc	ription: (Describe	to the depth i	needed to docui	nent the i	ndicator	or confirm	the ab	sence of indicators.)	
Depth	Matrix		Redo	x Features	s				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Text	ure Re	emarks
0-16	10YR 4/3	100 -		-	-	-	SiCL	-	
		<u> </u>							
		- i							
									-
	-			- ——					_
									_
		. <u> </u>							
¹Type: C=Cc	ncentration, D=Dep	letion RM=Re	duced Matrix M	S=Masked	Sand Gr	ains	² Locatio	on: PL=Pore Lining, M=	=Matrix
Hydric Soil I		nedon, raw rae	dadea Matrix, Wi	o madree	d Odila Oli	AII 10.	Locati	Indicators for Probler	
Histosol			Dark Surface	(\$7)				2 cm Muck (A10) (-
	ipedon (A2)	-	Polyvalue Be		ce (S8) (N	II RΔ 147	148)	Coast Prairie Redo	-
Black His		-	Tolyvalde Bo				140)	(MLRA 147, 148	
	n Sulfide (A4)	-	Loamy Gleye			41, 140)		Piedmont Floodpla	-
	Layers (A5)	-	Depleted Ma		/			(MLRA 136, 147	
	ck (A10) (LRR N)	-	Redox Dark		-6)			Very Shallow Dark	
	Below Dark Surfac	e (A11)	Depleted Da					Other (Explain in F	
	rk Surface (A12)	. ,	Redox Depre					_ ` '	,
Sandy M	ucky Mineral (S1) (I	LRR N,	Iron-Mangan			LRR N,			
MLRA	147, 148)		MLRA 13	6)					
Sandy G	leyed Matrix (S4)	-	Umbric Surfa	ice (F13) ((MLRA 13	6, 122)		³ Indicators of hydropl	hytic vegetation and
Sandy R	edox (S5)	-	Piedmont Flo	oodplain S	oils (F19)	(MLRA 14	l8)	wetland hydrology	must be present,
	Matrix (S6)		Red Parent I	//aterial (F	21) (MLR	A 127, 147	7)	unless disturbed o	r problematic.
	ayer (if observed)								
Type: Non	e		_						
Depth (inc	ches):		_				Hydri	ic Soil Present? Yes	No <u> </u>
Remarks:							_		
No hydrid	soil indicato	rs observe	ed.						

Project/Site: Tiltonsville to Windsor	City/Coun	ty: Jefferson County	Sampling Date: 04/23/2020		
Applicant/Owner: AEP	City/Coun	State: (OH Sampling Point: UPL-006		
ODIVILID	Section, 7				
Landform (hillslope, terrace, etc.): Floodplain			ex Slope (%): ³		
Subregion (LRR or MLRA): LRR-N	1 at: 40.208077	Long: -80.668483	Datum: NAD83		
Soil Map Unit Name: Tioga silt loam, occasionally	flooded (Tg)	NWI	classification: PFO1Ch/PEM1Ch		
Are climatic / hydrologic conditions on the site typ	pical for this time of year? Vos	✓ No (If no ovn	lain in Pomarke \		
Are Vegetation, Soil, or Hydrologic			·		
Are Vegetation, Soil, or Hydrolog SUMMARY OF FINDINGS – Attach s			y answers in Remarks.) 1sects, important features, etc.		
Lludraphytic Vegetation Present?	V No.				
	No.	the Sampled Area	s No		
	No 🔽	thin a Wetland? Yes	s No_ -		
Remarks:					
Upland data point for W006.					
Forested floodplain.					
Within mapped NWI boundary.					
HYDROLOGY					
Wetland Hydrology Indicators:			ry Indicators (minimum of two required)		
Primary Indicators (minimum of one is required;			Surface Soil Cracks (B6)		
Surface Water (A1)	True Aquatic Plants (B14		sely Vegetated Concave Surface (B8)		
High Water Table (A2)	Hydrogen Sulfide Odor (C		nage Patterns (B10)		
Saturation (A3)	Oxidized Rhizospheres o		s Trim Lines (B16)		
Water Marks (B1) Sediment Deposits (B2)	Presence of Reduced IronRecent Iron Reduction in		Dry-Season Water Table (C2) (C6) Crayfish Burrows (C8)		
Sediment Deposits (B2) Drift Deposits (B3)	Thin Muck Surface (C7)		ration Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Other (Explain in Remark		ted or Stressed Plants (D1)		
Iron Deposits (B5)	Other (Explain in Nemark		morphic Position (D2)		
Inundation Visible on Aerial Imagery (B7)			low Aquitard (D3)		
Water-Stained Leaves (B9)			otopographic Relief (D4)		
Aquatic Fauna (B13)			-Neutral Test (D5)		
Field Observations:			<u> </u>		
	Depth (inches): -				
Water Table Present? Yes No	Depth (inches): -				
	Depth (inches): -	Wetland Hydrology	Present? Yes No		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitor	pring well, aerial photos, previou	s inspections), if available:			
N/A	9 - 7 7				
Remarks:					
None.					

Sampling Point: UPL-006

er Species?	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 7 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1 (A/B)
		That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 7 (B) Percent of Dominant Species
		Total Number of Dominant Species Across All Strata: 7 (B) Percent of Dominant Species
		Species Across All Strata: 7 (B) Percent of Dominant Species
		Percent of Dominant Species
		That Are OBL, FACW, or FAC: 57.1 (A/B)
	· ——	
		Prevalence Index worksheet:
		Total % Cover of: Multiply by:
= Total Co	ver	OBL species x 1 =
		FACW species x 2 =
Y	FAC	FAC species x 3 =
Y	FACU	FACU species x 4 =
		UPL species x 5 =
		Column Totals: (A) (B)
		Column Totals (A) (B)
		Prevalence Index = B/A =
		Hydrophytic Vegetation Indicators:
		1 - Rapid Test for Hydrophytic Vegetation
		1
		2 - Dominance Test is >50%
		3 - Prevalence Index is ≤3.0 ¹
= Total Co	ver	4 - Morphological Adaptations¹ (Provide supporting
		data in Remarks or on a separate sheet)
Υ	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
Y	FAC	
Y	FACU	¹ Indicators of hydric soil and wetland hydrology must
	FACW	be present, unless disturbed or problematic.
		Definitions of Four Vegetation Strata:
	<u> </u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
		more in diameter at breast height (DBH), regardless of
		height.
		Continue/Charaka Manda and and and an along
		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
		g
		Herb – All herbaceous (non-woody) plants, regardless
		of size, and woody plants less than 3.28 ft tall.
- Total Car		Woody vine – All woody vines greater than 3.28 ft in
= Total Co	ver	height.
<u> </u>	· 	
<u> </u>	· 	
		Hydrophytic
		Vegetation
		Present? Yes No No
= Total Co	ver	
	Total Co Y Y Y N = Total Co Total Co Total Co Total Co	Y FACU = Total Cover Y FACU Y FACU Y FACU Y FACU Y FACU THE TOTAL COVER TOTAL COVER TOTAL COVER TOTAL COVER

Sampling Point: UPL-006

SOIL

Profile Desc	ription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Text	ture Remarks
0-8	10YR 4/3	100 -		-	-	-	SiCL	-
	-							
0.40	40VD 4/0	400					0:01	No sedentestoses
8-16	10YR 4/2	100 -					SiCL	No redox features.
				_				
	-							
¹ Type: C=Co	oncentration, D=Dep	oletion, RM=F	Reduced Matrix, M	S=Masked	Sand Gr	ains.	² Locati	ion: PL=Pore Lining, M=Matrix.
Hydric Soil I								Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)				2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue B		ce (S8) (N	/ILRA 147,	148)	Coast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark S	urface (S9	(MLRA	147, 148)		(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gley	ed Matrix (F2)			Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma					(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark					Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da					Other (Explain in Remarks)
	ark Surface (A12)		Redox Depr					
	lucky Mineral (S1) (LRR N,	Iron-Mangar		es (F12) (LRR N,		
	147, 148)		MLRA 13					3
-	sleyed Matrix (S4)		Umbric Surfa					³ Indicators of hydrophytic vegetation and
-	ledox (S5)		Piedmont FI					wetland hydrology must be present,
	Matrix (S6)		Red Parent	Materiai (F	21) (MLR	A 127, 147	<u>')</u>	unless disturbed or problematic.
	_ayer (if observed)	:						
Type: Nor			<u>—</u>					,
Depth (inc	ches):		<u>—</u>				Hydr	ric Soil Present? Yes No
Remarks:							•	
No hydrid	c soil indicato	rs observ	/ed.					
,								

Project/Site: Tiltonsville to Windsor	City/County: Jefferson County	Sampling Date: 4/22/202
Applicant/Owner: AEP		tate: OH Sampling Point: UPL-007
LID CDIC	Section, Township, Range:	
	Local relief (concave, convex, none):	No relief Slope (%): <2
Landform (hillslope, terrace, etc.): Terrace Subregion (LRR or MLRA): LRRN Lat: 40.203	3385 Long: -80.685	5078 Datum: NAD83
Soil Map Unit Name: Morristown channery silty clay loam, 0 to	8 percent slopes, unreclaimed, highwall	NWI classification:
Are climatic / hydrologic conditions on the site typical for this tin		
Are Vegetation, Soil, or Hydrology signi	-	
Are Vegetation, Soil, or Hydrology natu		ain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map she		
	.	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	Is the Sampled Area	✓
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	within a Wetland?	Yes No
Remarks:		
- Area upland sample point for wetland W	007	
- Area possible old strip mine area due to	spoil within soil profile	
,		
HYDROLOGY		
Wetland Hydrology Indicators:	Sec	condary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that		Surface Soil Cracks (B6)
		Sparsely Vegetated Concave Surface (B8)
	en Sulfide Odor (C1) d Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
	d Rhizospheres on Living Roots (C3) ee of Reduced Iron (C4)	Moss Trim Lines (B16) Dry-Season Water Table (C2)
	Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
	ck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (B	explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	_	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	<u> </u>	Shallow Aquitard (D3)
Water-Stained Leaves (B9)		Microtopographic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes No Depth	(inches): -	
Water Table Present? Yes No Depth		
Saturation Present? Yes No Depth		ology Present? Yes No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aeric	al photos, previous inspections), if availabl	e:
N/A Remarks:		
	indicators of budralagy aboa	an rod
- No wetland hydrology indicators or field	indicators of rigurology obse	ived.

Sampling Point: UPL-007

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30'	% Cover	Species?		Number of Dominant Species	
1. Acer negundo	5	YES	FAC	That Are OBL, FACW, or FAC: 1 (A)
2				Total Number of Dominant	
3				_	B)
4					,
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 20 (A/B)
6.				That Ale OBL, I AGW, OF I AG.	A(b)
7				Prevalence Index worksheet:	
8				Total % Cover of: Multiply by:	
0	•			OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15')		= Total Cov	er	FACW species x 2 =	
1 Elaeagnus umbellata	20	YES	UPL	FAC species x 3 =	
2				FACU species x 4 =	
				UPL species x 5 =	
3				Column Totals: 0 (A) 0	(D)
4				Column Totals (A)	(D)
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetation	
8				2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0¹	
10					
_	0	= Total Cov	er	 4 - Morphological Adaptations¹ (Provide suppodata in Remarks or on a separate sheet) 	orting
Herb Stratum (Plot size: 5')				Problematic Hydrophytic Vegetation¹ (Explain)	,
1. Tridens flavus	30	YES	FACU	1 Tobicinatio Trydrophytic Vegetation (Explain)	'
2. Schedonorous arundinaceus	20	YES	FACU	1 adiastana of budgia acil and well-and budgels are	
3. Solidago canadensis	20	YES	FACU	¹ Indicators of hydric soil and wetland hydrology mu be present, unless disturbed or problematic.	IST
4. Achillia millifolium	10	NO	FACU	Definitions of Four Vegetation Strata:	
5. Erigeron strigosus	10	NO	FACU	Definitions of Four Vegetation Strata.	
6.		-	-	Tree – Woody plants, excluding vines, 3 in. (7.6 cn	
7			_	more in diameter at breast height (DBH), regardles height.	ss of
				Height.	
8				Sapling/Shrub – Woody plants, excluding vines, le	ess
9				than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody) plants, regard	less
11				of size, and woody plants less than 3.28 ft tall.	
12	100			Woody vine – All woody vines greater than 3.28 ft	in
Woody Vine Stratum (Plot size: 30')	100	= Total Cover		height.	
None observed (Plot Size)		_	_		
I					
2					
3					
4				Hydrophytic	
5				Vegetation	
6		-		Present? Yes No	
	0	= Total Cov	er		
Remarks: (Include photo numbers here or on a separate	sheet.)				
- None					
- NOTIC					

SOIL Sampling Point: UPL-007

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redox Features						
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0 - 17	10YR 3/1	60	10YR 5/6	10	С	M	SiC	Dry w/spoil	(coal) at 50%
			7.5YR 4/6	30					
		· ———			-				
									
			-						
	•		-						
						-			
									
¹Type: C=C	oncentration D=Den	letion RM	=Reduced Matrix, M	S=Maske	d Sand Gr	aine	² I ocation: PI	L=Pore Lining, N	/=Matrix
Hydric Soil		iletion, Kivi	-Neduced Matrix, M	3-IVIASKE	u Sanu Gi	allis.			ematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)				cm Muck (A10)	•
	oipedon (A2)		Polyvalue Be		ace (S8) (I	/ILRA 147.		Coast Prairie Re	
	stic (A3)		Thin Dark Su					(MLRA 147, 1	
	en Sulfide (A4)		Loamy Gleye			, -,	F	Piedmont Floodp	
	d Layers (A5)		Depleted Ma	trix (F3)	` '		·	(MLRA 136, 1	47)
2 cm Mu	ıck (A10) (LRR N)		Redox Dark	Surface (F6)				
	d Below Dark Surfac	e (A11)	Depleted Da						rk Surface (TF12)
	ark Surface (A12)		Redox Depre				c	Other (Explain in	Remarks)
	Mucky Mineral (S1) (I	_RR N,	Iron-Mangan		ses (F12) (LRR N,			
	A 147, 148)		MLRA 13	•			3,		
	Gleyed Matrix (S4)		Umbric Surfa						phytic vegetation and
-	Redox (S5)		Piedmont Flo Red Parent I						y must be present,
	l Matrix (S6) Layer (if observed):		Reu Paleill I	viateriai (i	-21) (WILK	A 121, 141	, u	nless disturbed	or problematic.
Type: No		•							
							Unadaia Cail	I Duna a m 42 V	es_ / No
Depth (in	cnes):						Hydric Soil	Present? 10	es No
Remarks:	None								
	140110								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Tiltonsville to Windsor	City/County: _	Jefferson County	Sampling Date: 4/22/202
Applicant/Owner: AEP		Sampling Point: UPL-008	
	Section, Township, Range: No PLSS		
Landform (hillslope, terrace, etc.): Hillslope			Slope (%): <2
Subregion (LRR or MLRA): LRRN Lat:			
Soil Map Unit Name: Udorthents-Urban land comp	lex	NWI classi	
Are climatic / hydrologic conditions on the site typical fo			
Are Vegetation, Soil, or Hydrology		Are "Normal Circumstances"	
Are Vegetation, Soil, or Hydrology		(If needed, explain any answ	
SUMMARY OF FINDINGS – Attach site m			
		· · ·	•
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	No. V	Sampled Area	✓
Wetland Hydrology Present? Yes		a Wetland? Yes	No
Remarks:			
- Area upland sample point for wetla	nd W008		
- Sample pit is located near highway			
Campio più le lecated fiedi fiigilway	DOM		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indi	cators (minimum of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface Sc	
	True Aquatic Plants (B14)		egetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		Patterns (B10)
	Oxidized Rhizospheres on Liv	ving Roots (C3) Moss Trim	Lines (B16)
Water Marks (B1)	Presence of Reduced Iron (C	4) Dry-Seaso	n Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Tille	ed Soils (C6) Crayfish Bu	urrows (C8)
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation	Visible on Aerial Imagery (C9)
	Other (Explain in Remarks)	Stunted or	Stressed Plants (D1)
_ Iron Deposits (B5)			ic Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Ac	
Water-Stained Leaves (B9)			raphic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutr	al Test (D5)
Field Observations:	D # # 1)		
Surface Water Present? Yes No	Depth (inches): -	—	
	Depth (inches): -		
Saturation Present? Yes No	Depth (inches):	Wetland Hydrology Pres	ent? Yes No
Describe Recorded Data (stream gauge, monitoring w	vell, aerial photos, previous ins	spections), if available:	
N/A			
Remarks:			
- No wetland hydrology indicators or	field indicators of h	ydrology observed.	

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

Sampling Point: UPL-008

•	Absolute	Dominant	Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size: 30'	% Cover	Species?		Number of Dominant Species	
1. Ulmus rubra	10	YES	FAC	That Are OBL, FACW, or FAC: 1 (A	A)
2				Total Number of Deminant	
3				Total Number of Dominant Species Across All Strata: 6 (I	В)
4.					-,
5				Percent of Dominant Species That Are OBL_FACW_or_FAC: 17	A (D)
				That Are OBL, FACW, or FAC: 17 (A	A/B)
6				Prevalence Index worksheet:	
7.				Total % Cover of: Multiply by:	
8	^			OBL species x 1 =	
Continue/Charle Charters (Diet sine, 15'	0	= Total Cov	er		
Sapling/Shrub Stratum (Plot size: 15') Lonicera morrowii	40	YES	FACU	FACW species x 2 =	
·· ·	10			FAC species x 3 =	
2. Rosa multiflora		YES	FACU	FACU species x 4 =	
3				UPL species x 5 =	
4				Column Totals: 0 (A) 0	(B)
5				Developes Index D/A	
6				Prevalence Index = B/A =	
7.			-	Hydrophytic Vegetation Indicators:	
8.			-	1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0 ¹	
10	^			4 - Morphological Adaptations ¹ (Provide suppo	rting
Herb Stratum (Plot size: 5')	0	= Total Cov	er	data in Remarks or on a separate sheet)	
1. Securigera varia	15	YES	UPL	Problematic Hydrophytic Vegetation ¹ (Explain)	
- " · · ·	15	YES	FACU		
2.				¹ Indicators of hydric soil and wetland hydrology mu	st
3. Solidao canadensis	10	YES	FACU	be present, unless disturbed or problematic.	
4. Cirsium vulgare	10	NO	FACU	Definitions of Four Vegetation Strata:	
5		-		_	,
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles	
7			-	height.	3 01
8			-		
9.			-	Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than 3.28 ft (1 m) tall.	ess
				than 3 in. DBH and greater than 3.20 it (1 in) tall.	
10				Herb – All herbaceous (non-woody) plants, regardl	ess
11.	_			of size, and woody plants less than 3.28 ft tall.	
12	100			Woody vine – All woody vines greater than 3.28 ft	in
Woody Vine Stratum (Plot size: 30')	100	= Total Cov	er	height.	
None observed		_	_		
l·					
2					
3					
4				Hydrophytic	
5				Vegetation	
6				Present? Yes No	
	0	= Total Cov	er		
Remarks: (Include photo numbers here or on a separate	sheet.)			1	
•	ooo,				
- None					

Sampling Point: UPL-008

Profile Desc	ription: (Describe	to the depth n	eeded to docum	ent the in	dicator or c	onfirm	the ab	sence of indicat	tors.)	
Depth	Matrix		Redox	Features						
(inches)	Color (moist)	% (Color (moist)	%	Type ¹ L	oc ²	Text	ure	Remark	S
0 - 17	10YR 4/3	100					Loam	Dry w/s	poil (gravel)) at 40%
	-									-
										
	-					_				
										
	-	<u> </u>								
	-					_				
										
	·	<u> </u>								
1 _{Type:} C=C	neestration D-Den	lotion DM-Do	duand Matrix MC	-Maakad	Cand Crains	_	21 apatis	an: DI =Dara Lin	ina N-Matrix	,
Hydric Soil I	oncentration, D=Dep	ietion, Rivi=Red	duced Matrix, MS	=iviasked	Sand Grains.		Locatio	on: PL=Pore Lin Indicators for F		
-			David Overford	(07)						-
Histosol		_	Dark Surface		- (00) (11) -	A 44 -	440		(A10) (MLRA	
	oipedon (A2)	_	Polyvalue Bel				148)		e Redox (A1	0)
Black His		_	Thin Dark Sur			148)		(MLRA 1		(540)
	n Sulfide (A4)	_	Loamy Gleyed		2)				loodplain Soi	IS (F19)
	Layers (A5)	-	Depleted Mati					(MLRA 1	36, 147)	
	ck (A10) (LRR N)		Redox Dark S Depleted Dark	•	,			Vory Shallo	w Dark Surfa	oo (TE12)
	l Below Dark Surfac ark Surface (A12)	e (A11) _	Depleted Dan						w Dark Surfa ain in Remarl	
	lucky Mineral (S1) (I	DD N	Redox Depres			N		Other (Expi	alli ili Kelliali	(5)
	147, 148)	_NN N, _	MLRA 136		5 (1 12) (LKK	ıv,				
	leyed Matrix (S4)		Umbric Surfac	•	NI DA 136 1	221		³ Indicators of I	avdrophytic v	egetation and
	edox (S5)	_	Piedmont Floo				8)		Irology must	-
	Matrix (S6)	_	Red Parent M						rbed or probl	
	ayer (if observed):	!	Treat arent w	aterial (1 2	ii) (iiiEitea 12	-1, 1 -1 1	, T	unicoo diota	ibed of probl	cinatio.
Type: No										
Depth (inc			=				Llydri	c Soil Present?	Yes	No 🗸
Remarks:			=				Hyun	C CONT TESCHE	163	_ ""
Remarks.	None									
•	10110									

APPENDIX C Primary Headwater Habitat Evaluation (HHEI/QHEI) Data Forms



ChieFPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

32
200

SITE NAME/LOCATION_Tiltonsville- Windsor	
LENGTH OF STREAM REACH (ft) 130 LAT. 40.1767 LONG. 80.7068 RIVER CODE RIVER MILE	7 5g. ~
DATE 4/21/20 SCORER CDK/JJP COMMENTS SOO2 Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	tions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVE	ERY
MODIFICATIONS: ROW X-ing	
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	(
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric
BLDR SLABS [16 pts] SILT [3 pt]	Points
EDA FACIOWOOD DEBRIS [3 pis]	Substrate
COBBLE (65-256 mm) [12 pts] 10 CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 35	7
Total of Percentages of (A)	A + B
Bidr Slabs, Boulder, Cobble, Bedrock	^**
	pol Depth
and the Armid I am I do I I I I I I I I I I I I I I I I I	Max = 30
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ < 5 cm	0
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	III Wasan
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
☐ > 4.0 m eters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] □ ≤ 1.0 m (≤ 3' 3") [5 pts] □ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	15
the state of the s	
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R (Mature Forest, Wetland □ □ Conservation Tillage	
☐ ☐ Moderate 5-10m ☐ ☐ Immature Forest, Shrub or Old ☐ Urban or Industrial €	xisting Ru
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	·
☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
□ None □ 1.0 □ 2.0 □ 3.0 □ 3.0 □ 3.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Tyes No QHEI Score (If Yes, Attach Completed QHE	El Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Distance from E	Evaluated Stream
CWH Name: Distance from E	
☐ EWH Name: Distance from E	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY	/
USGS Quadrangle Name:NRCS Soil Map Page:NRC	
County:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:	
Photograph Information: 977 > 2E 923 - NW 924 - NE 925	PNE
Elevated Turbidity? (Y/N): Canopy (% open): 701,	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) I	ab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivi	
Is the sampling reach representative of the stream (Y/N) V If not, please explain:	
1110, product oxpidant.	
Additional comments/description of pollution impacts:	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher ID number. Include appropriate field data sheets from the Primary Headwater Hall Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:	bitat Assessment Manual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This m	· · · ·
Include important landmarks and other features of interest for site evaluation and a narrative desc	ription of the stream's location
Overgroun/ Overgroun/ Overhanging Rose Bushes	
Forest { Row { Fores,	from

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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	Time odore (sum of metrics 1, 2, 3)	
SITE NAME/LOCATION		/1-
SITE NUMBER_	RIVER BASIN DRAINAGE AREA (n	ni²) <u>~ + 38</u> /
DATE 4 21/20 SCORER CDK/	COMMENTS S003	ILE
	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" fo	
	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO	RECOVERY
MODIFICATIONS: ROW Y-ing		
4 CURSTRATE (F-Mr. 4		
 SUBSTRATE (Estimate percent of eve (Max of 40). Add total number of significant 	ory type of substrate present. Check ONLY <u>two</u> predominant substrate TYPE bo ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	xes HHEI
<u>TYPE</u> P	ERCENT TYPE PERCENT	Metric
□ □ BLDR SLABS [16 pts] □ BOULDER (>256 mm) [16 pts] □	O SILT [3 pt] O LEAF PACKWOODY DEBRIS [3 pts]	Points
■ BEDROCK [16 pt]	35	Substrate
	CLAY or HARDPAN [0 pt]	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ SAND (<2 mm) [6 pts]	MUCK [0 pts]	124
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	6.5 (A) (B)	A+B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the ma	aximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box);	Max = 30
> 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	125
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	3
COMMENTS	MAXIMUM POOL DEPTH (centimeters):	2.7
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3'3" - 4'8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]	Max=30
	AVEDAGE BANKETHA MEDELA	15
COMMENTS	AVERAGE BANKFULL WIDTH (meters)	
	This Information must also be completed	
RIPARIAN ZONE AND FLOODP	LAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream	r år
RIPARIAN WIDTH L R (Per Bank)	FLOODPLAIN QUALITY L_R_ (Most Predominant per Bank) L R	
☐ ☐ Wide >10m	Mature Forest, Wetland	age
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old Field Urban or Industrii	an Row
Narrow <5m	Residential, Park, New Field Open Pasture, Ro	wo
□ □ None	☐ ☐ Fenced Pasture ☐ ☐ Mining or Constru	ıction
COMMENTS		
FLOW REGIME (At Time of Evalu		
Stream Flowing Subsurface flow with isolated pools	Moist Channel, isolated pools, no flow (Intermost (Interstitial)	ittent)
COMMENTS	s (Interstitial)	
SINUOSITY (Number of bends no	er 61 m (200 ft) of channel) (Check ONLY one box):	
None	1.0 2.0 3.0	
0,5	1.5	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe	
- The following to the first to Modelate	Severe (2 II/ 100 IL) I MIODELISTE TO Severe	(10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>1):</u>
QHEI PERFORMED? - Yes No QHEI Score(If Yes,	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	
CWH Name:	
D EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	HED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Ma	ap Page: NRCS Soil Map Stream Order
County: Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information: 126 > E 927 > W 128 > 1	V, 929 -> N
Elevated Turbidity? (Y/N): Canopy (% open): 601,	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or	id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) / If not, please explain:	existing ROW
Additional comments/description of pollution impacts:	
	>=====================================
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections option ID number. Include appropriate field data sheets from the	onal. NOTE: all voucher samples must be labeled with the site
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) M Aquatic Macroinvertel	Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
Sentino Rogarang Biology.	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	M REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation	n and a narrative description of the stream's location
	Emit
torest	{ torest
Forest Bedrock & Grave / Gobble	7 / N
FLOW - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SEE 00 38
S ROW Exerst	3
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The second secon	

ChieFPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²)	58 ~
LENGTH OF STREAM REACH (#) 10 LAT. 40.1729 LONG-80.7094 RIVER CODE RIVER MILE	-
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	S
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
MODIFICATIONS: ROW Xing	
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	
TYPE PERCENT TYPE PERCENT D SILT [3 pt] D BLDR SLABS [16 pts]	
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts]	
BEDROCK [16 pt]	
□ Ø GRAVEL (2-64 mm) [9 pts] 35 □ □ MUCK [0 pts] □ □	
SAND (<2 mm) [6 pts] 10 ARTIFICIAL [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	В
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	•
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	30
□ > 22.5 - 30 cm [30 pts]	H
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
2 PANKETHI MENTANA	11
□ > 4.0 meters (> 13') [30 pts] □ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Widt	
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] Max= □ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	
A STATE OF THE STA	==4 ⁽⁵⁾
This Information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
(-) 3 (-) (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) 3 (-) (-) 3 (-) 3 (-) 3 (-) 3 (-) (-) 3 (-)	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
L R (Per Bank) Wide >10m Mature Forest, Wetland Mature Forest, Shrub or Old Wide >10m Moderate 5-10m Moderate 5-10m	
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m L R (Most Predominant per Bank) L R Conservation Tillage Urban or industrial ROW Residential, Park, New Field Open Pasture, Row	
L R (Per Bank) Wide >10m Moderate 5-10m Marrow <5m None Residential, Park, New Field Crop Mining or Construction Crop Mining or Construction Conservation Tillage Conservati	
L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m L R (Most Predominant per Bank) Mature Forest, Wetland I Conservation Tillage Urban op industrial ROW Crop Crop	
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Woderate 5-10m L R (Most Predominant per Bank) Mature Forest, Wetland I Conservation Tillage Urban or industrial None Crop Mining or Construction	
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Wide >5 10m Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) Mature Forest, Wetland Open Pasture Conservation Tillage Urban or Industrial Conservation Tillage Open Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Ory channel, no water (Ephemeral)	
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Marrow <5m Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS (Most Predominant per Bank) Mature Forest, Wetland Dip Conservation Tillage Urban or industrial Conservation Tillage Urban or industrial Coppen Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Field Narrow <5m None Comments Residential, Park, New Field Fenced Pasture COMMENTS FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box):	
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Immature Forest, Shrub or Old Narrow <5m Narrow <5m Residential, Park, New Field Open Pasture, Row Crop Mining or Construction FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) CCheck ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Residential Park, New Field Open Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) Check ONLY one box): None 1.0 2.0 3.0	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed)	<u>).</u>
QHEI PERFORMED? - Tyes No QHEI Score(If Yes, A	uttach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
☐ EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHI	ED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map	p Page: NRCS Soil Map Stream Order
USGS Quadrangle Name: NRCS Soil Man County: Te fferson OH Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information: 930 +SE 931 +NW 931 +SW	1, 933 = SW
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id	L and attach results) Lab Number
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	
4	
Is the sampling reach representative of the stream (Y/N) If not, please explain:	ENSTING ROW Clossing
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
. 	/
Comments Regarding Biology:	100 100 (1110) 100 100 100 100 100 100 100 100 10
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation	
(x) ROW	
tae57	> Fores/
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6730 8 60	
FLOW -	N
(Spore) coloble	Eiller
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PHWH Form Page - 2

Chief? Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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SITE NAME/LOCATIONTI HOUS VILLE	- \4/\ta\5ac
SITE NUMBER	RIVER BASIN DRAINAGE AREA (mif) 4 1 %
LENGTH OF STREAM REACH (#) 115	1AT 40.1714 10NG - 80.7104 BUTTO COPE
DATE 4/1/20 SCORER CDK/J	JP COMMENTS S005 Tatermittent
NOTE: Complete All Items On This Forr	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAT	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY
MODIFICATIONS: ROW X-ing	AND STATE OF THE S
100 11 119	
SUBSTRATE (Estimate percent of eve (Max of 40). Add total number of circuits.	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHE Metric Metric
☐ ☐ BLDR SLABS [16 pts]	O SILT [3 pt] Point
□ □ BOULDER (>256 mm) [16 pts] _ □,□ BEDROCK [16 pt]	LEAF PACKWOODY DEBRIS [3 pts] 5 Substrat
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]
GRAVEL (2-64 mm) [9 pts]	45 DD MUCK [0 pts]
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	A+B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:
2. Maximum Pool Depth (Measure the ma	aximum pool depth within the 61 meter (200 ft) evaluation reach at the time of
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box):
> 22.5 - 30 cm [30 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]
COMMENTS	MAXIMUM POOL DEPTH (centimeters):
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box): Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH (meters)
RIPARIAN ZONE AND FLOODP	This information must also be completed
RIPARIAN WIDTH	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY
L R (Per Bank) ☐ ☐ Wide >10m	L R (Most Predominant per Bank) L R
Moderate 5-10m	Immature Forest, Shrub or Old
	Field Organ or industrial Countries Field
XX Narrow <5m	Residential, Park, New Field
	Crop
☐ ☐ None COMMENTS	☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction
COMMENTS	Fenced Pasture
COMMENTS	☐ ☐ ☐ ☐ Mining or Construction wation) (Check ONLY one box): ☐ Moist Channel, isolated pools, no flow (Intermittent)
COMMENTS	☐ ☐ ☐ ☐ Mining or Construction uation) (Check ONLY one box): ☐ ☐ Mining or Construction Moist Channel, isolated pools, no flow (Intermittent)
FLOW REGIME (At Time of Evalu. Stream Flowing Subsurface flow with isolated pools COMMENTS	Fenced Pasture
FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools COMMENTS SINUOSITY (Number of bends per None	Fenced Pasture
FLOW REGIME (At Time of Evaluation of Evalua	Fenced Pasture
FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools COMMENTS SINUOSITY (Number of bends per None	Fenced Pasture

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>d):</u>
QHEI PERFORMED? - Tyes No QHEI Score(If Yes,	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	<i>y</i>
USGS Quadrangle Name: NRCS Soil Ma	lap Page: NRCS Soil Map Stream Order
County: Tellerson OH Township/City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	
Photograph Information: $934 \Rightarrow 56, 935 \Rightarrow NW, 936 \Rightarrow 5$	sw. 937 - SW
Elevated Turbidity? (Y/N): Canopy (% open):	*
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or	id, and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.	- 3/
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
is the sampling reach representative of the sheart (1714).	- Nige
Additional comments/description of pollution impacts: BIOTIC EVALUATION Performed? (Y/N): (If Yes, Record all observations, Voucher collections opti	ional。NOTE: all ∨oucher samples must be labeled with the sit
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinverte	e Primary Headwater Habitat Assessment Manual) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREA Include important landmarks and other features of interest for site evaluation	
Forest Row	ger-trade
	Fores T
log Grand/Cobble	
8 9 00 Dec 0 00	War o
FLOW	To Comments
	(%)
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Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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SITE NAME/LOCATION Tilturs ville - W	lindsor			
SITE NUMBER		D	RAINAGE AREA (mi²)	I sa m
LENGTH OF STREAM REACH (ft)	LAT 40, 1700 LONG	80.7113 BIVED CODE	DIVED MILE	
DATE 4/21/20 SCORER CDK/J	COMMENTS S006	エヘー	termittent	
NOTE: Complete All Items On This Form				ructions
STREAM CHANNEL NONE/NATI	URAL CHANNEL RECO	vered Trecovering (RECENT OR NO REC	OVERY
MODIFICATIONS: ROW X-ing				
'				
 SUBSTRATE (Estimate percent of ever (Max of 40), Add total number of significant 	y type of substrate present. nt substrate types found (Max	Check ONLY two predominant of 8). Final metric score is sum	substrate TYPE boxes of boxes A & B	HHEL
TYPE PE	RCENT TYPE		PERCENT	Metric
		T [3 pt] AF PACK/WOODY DEBRIS [3 ;	15 ots1 5	Points
□□ BEDROCK [16 pt]		IE DETRITUS [3 pts]	0	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts]		AY or HARDPAN [0 pt]	_0_	Max = 40
☐ SAND (<2 mm) [6 pts]		CK [0 pts] TIFICIAL [3 pts]	0	21
Total of Percentages of	(A)		(B)	
Bidr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTI	BATE TYPES	TOTAL NUMBER OF CURREN		A+B
		TOTAL NUMBER OF SUBST		
 Maximum Pool Depth (Measure the max evaluation. Avoid plunge pools from road 	ximum pool depth within the culverts or storm water pipes)	61 meter (200 ft) evaluation re (Check ONLY one box):	each at the time of	Pool Depth Max = 30
> 30 centimeters [20 pts]	□ >:	5 cm - 10 cm [15 pts]		Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]		5 cm [5 pts] D WATER OR MOIST CHANNE	EL [0 pts]	25
COMMENTS		MAXIMUM POOL DEPTH ([0.]	
3. BANK FULL WIDTH (Measured as the a	versage of 3.4 measurements			-
> 4.0 meters (> 13') [30 pts]	≥ >1	1.0 m - 1.5 m (> 3' 3" - 4' 8") [15		Bankfull Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	∠ ، لـا	1.0 m (≤ 3' 3") [5 pts]		Max=30
COMMENTS		AVERAGE BANKFULL WI	DTH (motors)	15
		AVERAGE BAIRFULL WI	DIA (meters)	
*	This information must a			
RIPARIAN ZONE AND FLOODPL RIPARIAN WIDTH	AIN QUALITY	River Left (L) and Right (R) as I	ooking downstream☆	
L R (Per Bank)	L R (Most Predominan			
☐ ☐ Wide >10m ☐ ☐ Moderate 5-10m	Mature Forest, We Immature Forest,		Conservation Tillage	
☐ ☐ Moderate 5-10m	Field	XX	Urban or Industrial	COL
Narrow <5m	Residential, Park,		Open Pasture, Row Crop	
□ □ None COMMENTS	☐ ☐ Fenced Pasture		Mining or Construction	
FLOW REGIME (At Time of Evalua	ation) (Check ONLY one how	۸.	·—·—·	
Stream Flowing		Moist Channel, isolated po	ols, no flow (Intermittent)	
Subsurface flow with isolated pools COMMENTS	(Interstitial)	Dry channel, no water (Ep	hemeral)	
SINUOSITY (Number of bends per	61 m (200 ft) of channel) (C	heck ONLY one how		
☐ None ☐	1.0	2.0	3.0	
	1.5	2.5	>3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to Severe	M saves	3.41
	- MOGOTATO (2 IL/100 IL)	INIONE INTO DEVELO	Severe (10 ft/10)	J ft 3

OUELDEDECOMEDS IV / WAL- OUTLA	
QHEI PERFORMED? - Yes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream
DEWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
SGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
ounty: Jefferson OH Towns	hip / City:
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Date of last precipitation:	
notograph Information: $938 \rightarrow 56$, $939 \rightarrow \Lambda$	1 940 -> SW, 941 -> SW
evated Turbidity? (Y/N): Canopy (% open):	<u> </u>
	sample no. or id. and attach results) Lab Number:
	pH (S.U.)Conductivity (µmhos/cm),
the sampling reach representative of the stream (Y/N) 1/10 If not, p	please explain: Existing ROW Clossing
dditional comments/description of pollution impacts:	
erformed? (Y/N): (If Yes, Record all observations, Voucher ID number, Include appropriate field data	collections optional. NOTE: all youcher samples must be labeled with the
ish Observed? (Y/N) Voucher? (Y/N) Salamanders Obrogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquation	oserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
ogs or radpoles Observed? (Y/N) /V Voucher? (Y/N) /V Aquatio	oserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
ogs or radpoles Observed? (Y/N) /V Voucher? (Y/N) /V Aquatio	oserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
ogs or Tadpoles Observed? (Y/N) /V Voucher? (Y/N) /V Aquation	vserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	oserved? (Y/N) Voucher? (Y/N) Vouche
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed):
DRAWING AND NARRATIVE DESCRIPTION Include Important landmarks and other features of interest for	oserved? (Y/N) Voucher? (Y/N) Vouche
DRAWING AND NARRATIVE DESCRIPTION Include Important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location

ChieFPA Primary Headwater Habitat Evaluation Form

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

ш				1
ı	7	?)	4	I

SITE NAME/LOCATION_TI Itonsville - Windso	
SITE NUMBER RIVER BASINDRAINAGE AREA (mi²) < 1	Sq. mi.
LENGTH OF STREAM REACH (ft) 130 LAT. 40. 1668 LONG80.716 RIVER CODE RIVER MILE	
DATE 4 2 20 SCORER CDK/JJT COMMENTS S007 RECOGNAL	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	ions
STREAM CHANNEL ONONE / NATURAL CHANNEL OR RECOVERED RECOVERING OR RECOVER	ERY
MODIFICATIONS: Existing ROW, steep road grade nearby.	
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT M	Metric
□ □ BLDR SLABS [16 pts] □ □ SILT [3 pt] □ □ BOULDER (>256 mm) [16 pts] □ □ LEAF PACK/WOODY DEBRIS [3 pts] □ □	Points .
BEDROCK [16 pt] O D FINE DETRITUS [3 pts] S	Substrate Nax = 40
COBBLE (65-256 mm) [12 pts] as D CLAY of HARDPAN [0 pt]	1ax = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts]	ナナ
Total of Parantages of (A)	
Bldr Slabs, Boulder, Cobble, Bedrock $\underline{q}v$	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:	
	ool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box); Note	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	25
17.8	
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
	Bankfull
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] □ ≤ 1.0 m (≤ 3' 3") [5 pts] <u>N</u>	Width Nax=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	20
COMMENTSAVERAGE BANKFULL WIDTH (meters)	70
This Information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R ☐ ☐ Wide >10m	
Moderate 5-10m Immature Forest, Shrub or Old Urban of Industrial Man	
Field Open Pasture Row	,
Crop	
None	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel), (Check ONLY one box):	
☐ None ☐ 1.0 至 2.0 ☐ 3.0	
□ 0.5 □ 1.5	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 1t/100 ft) ☐ Flat to Moderate ☐ Moderate (2 1t/100 ft) ☐ Moderate to Severe ☐ Severe (10 1t/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Tyes QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Jefferson, OH Township/City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:
Photograph Information: 942 > NW, 943 > 5E, 945 > 5W, 946 > 5W
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:
The same of the sa
Additional comments/description of pollution impacts: Stream receiving heavy gravel load from Near by road grade. Excessive residential garbase in channel BIOTIC EVALUATION Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Vou
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
torest Strash pile Form Stores Trash pile
Steep gravel embankment N
Road

ChieFPA Primary Headwater Habitat Evaluation Form

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

III.		п
N.	-16	-1
ш	10	- 0

SITE NAME/LOCATION Tiltons ville -	Windsor
SITE NUMBER	RIVER BASIN DRAINAGE AREA (mi²) < 1
DATE 4/23/20 SCORER CDK/JJP	COMMENTS S008 FOR GOLD RIVER CODE RIVER MILE
NOTE: Complete All Items On This Form - I	Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
	RAL CHANNEL DRECOVERED RECOVERING DRECENT OR NO RECOVERY Severe acid mine drainage, existing ROW X-1
SUBSTRATE (Estimate percent of every ty (Max of 40). Add total number of significant s	type of substrate present. Check ONLY two predominant substrate TYPE boxes substrate types found (Max of 8). Final metric score is sum of boxes A & B. CENT TYPE PERCENT SILT [3 pt] PERCENT Points CENT TYPE SILT [3 pt] SILT [3 pt] SUBSTRATE POINTS CENT TYPE PERCENT SUBSTRATE POINTS CENT TYPE PERCENT SUBSTRATE POINTS CENT TYPE PERCENT SUBSTRATE POINTS Substrate Max = 40 CENT TYPE Metric Points CENT TYPE Metric Points Substrate Max = 40 CENT SUBSTRATE POINTS CENT SUBSTR
2. Maximum Pool Depth (Measure the maxime valuation. Avoid plunge pools from road cul > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	mum pool depth within the 61 meter (200 ft) evaluation reach at the time of alverts or storm water pipes) (Check ONLY one box): > 5 cm - 10 cm [15 pts]
COMMENTS	MAXIMUM POOL DEPTH (centimeters):
3. BANK FULL WIDTH (Measured as the aver > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS	Prage of 3-4 measurements) (Check <i>ONLY</i> one box):
RIPARIAN ZONE AND FLOODPLAII RIPARIAN WIDTH F	This information <u>must</u> also be completed IN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY
L R (Per Bank)	R (Most Predominant per Bank) Mature Forest, Wetland L R Conservation Tillage
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial
□ □ None	Residential, Park, New Field Open Pasture, Row Crop Fenced Pasture Mining or Construction
FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools (In COMMENTS	Moist Channel, isolated pools, no flow (Intermittent)
	in (200 ft) of channel) (Check ONLY one box):
	1.0

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Tyes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
	Distance from Evaluated Stream
	Distance from Evaluated Stream
D EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENT	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
JSGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Jefferson Of Towns	hip / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N) : Date of last precipitation: Date of last precipitation: $956 \Rightarrow NE$, $957 \Rightarrow 51$	Quantity:
Photograph Information: 436 WE , 437-351	W, 15/3 3E 15/4 3L
Elevated Turbidity? (Y/N): Canopy (% open):60	
Nere samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N)	
s the sampling readmedplesentative of the stream (Y/N) If Not, p	леазе ехріапі
7.5	
Additional comments/description of pollution impacts: * Severe	acid mine drainage
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations, Voucher	collections optional. NOTE: all voucher samples must be labeled with the site
	sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) N Salamanders Ob	osen/ed2 (Y/N) / Valcher2 (Y/N) //
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquation	c Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for	site evaluation and a narrative description of the stream's location
Fuest	ROW
	corel/cubble preided
Groundwater seep Scour	aled S
GOLDONIO SCOT	ravel/cubble proof
LOW TANGETON	0 0 0 0 0 0 0 0
Mill	
Small Small Waterfall	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
Mined Barren Area Small winterfall	Forst 3
	()
1	

PHWH Form Page - 2

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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g,	25	1

SITE NAME/LOCATION_T: Itensville - Windsor	
SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²)	I 55 ~
LENGTH OF STREAM REACH (#) 330 LAT. 40. 1904 LONG- 80. 7009 RIVER CODE RIVER MILE	
DATE 4/33/20 SCORER CDK/JTP COMMENTS SO10 Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	OVERY
MODIFICATIONS: Existing ROW Xing	
· · · · · · · · · · · · · · · · · · ·	
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Metric Points
BOULDER (>256 mm) [16 pts] D LEAF PACKWOODY DEBRIS [3 pts]	
□ □ BEDROCK [16 pt] □ □ □ FINE DETRITUS [3 pts] □ □ COBBLE (65-256 mm) [12 pts] □ □ □ CLAY or HARDPAN [0 pt]	Substrate Max = 40
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY or HARDPAN [0 pt] ☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ☐ OCCUPAN [0 pts]	20
SAND (<2 mm) [6 pts] 25	20
Total of Percentages of (A) Plot Stabe Roulder Cobble Redrock (C) (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
TO THE CONTROL OF CONT	
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Depth Max = 30
□ > 30 centimeters [20 pts] □ > 5 cm - 10 cm [15 pts] □ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts]	Width
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	2
This Information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
RIPARIAN WIDTH L R (Per Bank) L R (Most Predominant per Bank) L R	
RIPARIAN WIDTH L R (Per Bank) Wide >10m RIPARIAN WIDTH L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage	nt. z
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m RIPARIAN WIDTH L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Conservation Tillage Urban or Industrial	04
RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m PLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture, Row Crop	ov
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m Residential, Park, New Field PLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Urban or Industrial Open Pasture, Row	ov
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Conservation Tillage Urban or Industrial Residential, Park, New Field Open Pasture, Row Crop Mining or Construction	04
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Conservation Tillage Penced Pasture Residential, Park, New Field Fenced Pasture Flow Regime (At Time of Evaluation) Conservation Tillage Urban or Industrial Conservation Tillage Urban or Industrial Crop Mining or Construction Flow Regime (At Time of Evaluation) Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	oh
RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Conservation Tillage Penced Pasture Fenced Pasture Flow REGIME (At Time of Evaluation) (Check ONLY one box):	04
RIPARIAN WIDTH R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Narrow <5m Residential, Park, New Field Open Pasture, Row Crop None COMMENTS FLOW REGIME (At Time of Evaluation) Comments Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	ow
RIPARIAN WIDTH R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Wrban ordindustrial Prield Narrow <5m None Compensature, Row Crop Mining or Construction Fenced Pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends, per 61 m (200 ft) of channel) (Check ONLY one box): None None 1.0 Conservation Tillage Conservation Tillage Urban ordindustrial Copen Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) SINUOSITY (Number of bends, per 61 m (200 ft) of channel) (Check ONLY one box): None 3.0	04
RIPARIAN WIDTH R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field Narrow <5m None Compasture, Row Crop None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0 Check ONLY one box): None 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	ow
RIPARIAN WIDTH R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub or Old Wrban ordindustrial Prield Narrow <5m None Compensature, Row Crop Mining or Construction Fenced Pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends, per 61 m (200 ft) of channel) (Check ONLY one box): None None 1.0 Conservation Tillage Conservation Tillage Urban ordindustrial Copen Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) SINUOSITY (Number of bends, per 61 m (200 ft) of channel) (Check ONLY one box): None 3.0	

,	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	
D EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE $\underline{\text{Ef}}$	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
- 20	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Jefferson Of Town	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information: 965 > NE 966 > SI	Quantity:
Elevated Turbidity? (Y/N): V Canopy (% open): 80	
Were samples collected for water chemistry? (Y/N): (Note lal	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)Conductivity (µmhos/cm)
	1 - 3 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4
Is the sampling reach representative of the stream (Y/N) // If not	please explain: - 13) mg / KVVV
Additional comments/description of pollution impacts:	
	er collections optional。NOTE: all voucher samples must be labeled with the ta sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders of Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua Comments Regarding Biology:	Observed? (Y/N) Voucher? (Y/N) Vouch
	Observed? (Y/N) Voucher? (Y/N) Vouch
	Observed? (Y/N) Voucher? (Y/N) Vouch
DRAWING AND NARRATIVE DESCRIPTION	N OF STREAM REACH (This <u>must</u> be completed):
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This <u>must</u> be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This <u>must</u> be completed):
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This <u>must</u> be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	N OF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location

ChieFPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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SITE NAME/LOCATION_Tiltonsville - windsor	
SITE NUMBERRIVER BASINDRAINAGE AREA (mi²) < 1 s	1. on!
LENGTH OF STREAM REACH (ft) 190 LAT. 40, 190 LONG. 80.7001 RIVER CODE RIVER MILE DATE 4(23) 20 SCORER DE JUP COMMENTS S011	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ns
STREAM CHANNEL	·
MODIFICATIONS: Existing electric ROW X-ing.	
Existing Cicelite 10	
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONL Y two predominant substrate TYPE boxes	HEI
TYPE PERCENT TYPE PERCENT ME	etric
DE BEST OF BOLIVERS	ints
BEDROCK [16 pt] O D FINE DETRITUS [3 pts] Sub	strate
COBBLE (65-256 mm) [12 pts] [0 CLAY or HARDPAN [0 pt]	k = 40
□	0
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10 (A)	+ B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool	Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max	< = 30
☐ > 22.5 - 30 cm [30 pts])
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
	nkfull
	idth x=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	-
COMMENTSAVERAGE BANKFULL WIDTH (meters)	<u> </u>
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ Wide >10m	,
Pielu — Open Partius Pow	
Narrow < Sm Crop	
☐ ☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	
Subsurface flow with isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 2.0 2.0 3.0	
□ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATIO	N (This Information Must	Also be Completed):			
QHEI PERFORMED? -	res No QHEI Score	(If Yes, Atta	ch Completed QHEI F	orm)	
DOWNSTREAM DESIGNAT	ED USE(S)				
WWH Name:				uated Stream	
CWH Name:				uated Stream	
EWH Name:			_ Distance from Evalu	uated Stream	
MAPPING: ATTACH COPIES	OF MAPS, INCLUDING TH	E ENTIRE WATERSHED	AREA. CLEARLY MA	RK THE SITE LOCATI	ON
USGS Quadrangle Name:		NRCS Soil Map F	Page:NRCS	Soil Map Stream Ord	er
County: Tefferson, O	Н т	ownship / City:			
MISCELLANEOUS			72		
Base Flow Conditions? (Y/N):	Date of last precipitation:	Destroy	Quantity:		
Photograph Information: 969	N, 970>5	971 > W, 1	172 >W	<u> </u>	- X
Elevated Turbidity? (Y/N):	Canopy (% open):	90			
Were samples collected for water chen	nistry? (Y/N): (Not	e lab sample no, or id, a	and attach results) Lab	Number:	
	_ Dissolved Oxygen (mg/l)		1	_	
Is the sampling reach representative of				N X-Inc.	
is the sampling reactive of	in should (my ii	not, ploade explain.			
					
Additional comments/description of pol	lution impacts:			- 11 12 - 1M - 2 - 1U - 1	
ID num	Record all observations. Vober, Include appropriate field (Y/N) Salamande Voucher? (Y/N) M A	d data sheets from the Priers Observed? (Y/N)	mary Headwater Habita	at Assessment Manual)	
DRAWING AND NAI	RRATIVE DESCRIPT		·		
FLOW -					
100	The	presgrava c	hannel &	and the same and t	
			2		T, N
Forest S	Ron	/	6	Forest	N.

Chiefp Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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2012	
SITE NUMBER S013 RIVER BASIN DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 30 LAT. 40.7015 LONG. 30.6000 RIVER CODE RIVER MILE _	
DATE 4/22/2020 SCORER 110 COMMENTS S013	41
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED	VERY
MODIFICATIONS:	
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT TYPE PERCENT	HHEI Metric
BLDR SLABS [16 pts] SILT [3 pt] 50	Points
O PEDDOCK ME at	Substrate
COBBLE (65-256 mm) [12 pts] 15 CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 30 MUCK [0 pts] MUCK [0 pts]	16
Total of Percentages of (A)	A + B
Bidr Slabs, Boulder, Cobble, Bedrock (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	ATB
*	-
 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 	Pool Depth Max = 30
☐ > 30 centimeters [20 pts]	1
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	13
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]	Width Max=30
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] □ ≤ 1.0 m (≤ 3' 3") [5 pts] □ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	55455 75000
	55455 75559
OMMENTSAVERAGE BANKFULL WIDTH (meters)	55455 75000
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣	55455 75000
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN WIDTH FLOODPLAIN QUALITY PLOODPLAIN QUALITY	55455 75000
This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Mature Forest, Wetland Mature Forest, Wetland Mature Forest, Charles Conservation Tiliage	55455 75000
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) L R (Most Predominant per Bank) L R Conservation Tiliage Immature Forest, Shrub or Old Field	55455 75000
This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downst	55455 75000
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m	55455 75000
This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mature Forest, Shrub or Old Field Narrow <5m None COMMENTS AVERAGE BANKFULL WIDTH (meters) This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream Average left (L) and Right (R) as looking downstream	55455 75000
This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None COMMENTS FLOW REGIME (At Time of Evaluation) COMMENTS Moist Channel, isolated pools, no flow (Intermittent)	55455 75000
This Information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH	55455 75000
COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m None COMMENTS FLOW REGIME (At Time of Evaluation) Check ONLY one box): SINUOSITY (Number of bends per 61 m (200 ft) of channel) COMMENTS AVERAGE BANKFULL WIDTH (meters) ANOTE: River Left (L) and Right (R) as looking downstream Conservation Tiliage I mmature Forest, Shrub or Old Open Pasture, Row Crop Mining or Construction Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) COMMENTS SNUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	55455 75000
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Wide >10m	55455 75000
AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream (RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY R (Per Bank)	55455 75000

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - 🗍 Yes 📈 No QHEI Score(If Yes, At	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	
CWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHE	
USGS Quadrangle Name:NRCS Soil Map	
County: Township / City:	3
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 50	
Were samples collected for water chemistry? (Y/N): $\begin{tabular}{c c c c c c c c c c c c c c c c c c c $	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S,U,)	Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N)If not, please explain:	
Additional comments/description of pollution impacts:	36
BIOTIC EVALUATION	
	nal. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the F	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebr	Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	. ,
Include important landmarks and other features of interest for site evaluation	1 1 1 1
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	76001
(9) SOR	MPOOL
Number 197	

Chiefp Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Tillowsuille		(Sum of medies 1, 2, 0) .
SITE NUMBER SO	014 RIVER BASIN	DRAINAGE AREA (mi²)
LENGTH OF STREAM REACH (ft) 70	LAT. 40. 7017 LONG-80-6886 RIV	ER CODE RIVER MILE
DATE 4-72-1670 SCORER 11P	COMMENTSS014	
NOTE: Complete All Items On This Form	m - Refer to "Field Evaluation Manual for	Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE/NAT	TURAL CHANNEL RECOVERED REC	OVERING TRECENT OR NO RECOVERY
1. SUBSTRATE (Estimate percent of eve	ry type of substrate present. Check ONLY two	predominant substrate <i>TYPE</i> boxes
	ant substrate types found (Max of 8). Final metric	NA Auto
BLDR SLABS [16 pts]	ERCENT TYPE SILT [3 pt]	PERCENT IVIETTIC Points
	5 DD LEAF PACKWOODY	DEBRIS [3 pts]5
□ □ BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts]	FINE DETRITUS [3]	
GRAVEL (2-64 mm) [9 pts]	DD MUCK [0 pts]	[opt]
SAND (<2 mm) [6 pts]	50	= 119
Total of Percentages of	(A)	(B) A+B
Bldr Slabs, Boulder, Cobble, Bedrock	5 9	5 11 21
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: TOTAL NUMBER	R OF SUBSTRATE TYPES:
2. Maximum Pool Depth (Measure the ma	aximum pool depth within the 61 meter (200 ft)	evaluation reach at the time of Pool Depth
> 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY of > 5 cm - 10 cm [15 p	
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MO	IST CHANNEL [0 pts]
COMMENTS	MAXIMUM PC	OOL DEPTH (centimeters):
3. BANK FULL WIDTH (Measured as the		(ONLY one box): Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	→ 1.0 m - 1.5 m (> 3' ≤ 1.0 m (≤ 3'3") [5 p	
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	3 1.011(200)	
COMMENTS	AVERAGE BA	NKFULL WIDTH (meters)
T MESSAGE CO		······································
	This information must also be completed	
RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH	*LAIN QUALITY	Right (R) as looking downstream☆
L R (Per Bank)	L R (Most Predominant per Bank)	L R
☐ ☐ Wide >10m	Mature Forest, Wetland	☐ ☐ Conservation Tillage
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	Residential, Park, New Field	Open Pasture, Row
None None	☐ ☐ Fenced Pasture	☐ ☐ Crop ☐ ☐ Mining or Construction
COMMENTS Datural	gors pipeline ROW	
FLOW REGIME (At Time of Eval		
Stream FlowingSubsurface flow with isolated pool		el, isolated pools, no flow (Intermittent) no water (Ephemeral)
COMMENTS	Dry Chainel,	no water (Epitemeral)
SINUOSITY (Number of bends no	er 61 m (200 ft) of channel) (Check ONLY one b	ox):
None	1.0 🔲 2.0	3.0
0.5	1.5 🔲 2.5	⊔ >3
STREAM GRADIENT ESTIMATE	XI.	
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	Moderate (2 ft/100 ft)	Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Tyes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream Distance from Evaluated Stream
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	NRCS Soil Map Page: NRCS Soil Map Stream Order
A part plant	ship / City:
MISCELLANEOUS	пр / Ску
Base Flow Conditions? (Y/N): Date of last precipitation:	Outputite.
Photograph Information: Elevated Turbidity? (Y/N): N Canopy (% open): 100	
	sample no. or id. and attach results) Lab Number:
· ·	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, p	please explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher	r collections optional. NOTE: all voucher samples must be labeled with the site
	sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquation	c Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	N
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for	site evaluation and a narrative description of the stream's location
	site evaluation and a narrative description of the stream's location
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FLOW →	2
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ChieFPA Primary Headwater Habitat Evaluation Form

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

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	0	4

SITE NAMELOCATION Tiltons ville - windson	
SITE NUMBER S015 RIVER BASIN DRAINAGE AREA (mi²) LENGTH OF STREAM REACH (ft) 193 LAT. 40.2036 LONG. 50.6010 RIVER CODE RIVER MILE	
DATE 4-17-1010 SCORER JJP COMMENTS S015	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	VERY
MODIFICATIONS:	
1. SUBSTRATE (Estimate percent of every type of sub strate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] FINE DETRITUS [3 pts]	HHEI Metric Points
COBBLE (65-256 mm) [12 pts] 30 CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts]	77
Bidr Slabs, Boulder, Cobble, Bedrock 40 21	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
□ > 30 centimeters [20 pts]	Max = 50
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	15
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Bankfull Width Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	10
	2 1 1 1 1 1 1
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
LR (Per Bank) LR (Most Predominant per Bank) LR Wide >10m	
☐ ☐ Moderate 5-10m Immature Forest, Shrub or Old ☐ ☐ Urban or Industrial	
□ □ Narrow <5m □ □ Residential, Park, New Field □ □ Open Pasture, Row	
□ □ None □ □ Fenced Pasture □ □ Mining or Construction	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Hoist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe Severe (10 ft/100	ft)

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FLOW	minum !!
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	DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): ures of interest for site evaluation and a narrative description of the stream's location
-	
	(Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Fish Observed? (Y/N) Voucher? (Y/N) Voucher?	Salamanders Observed? (Y/N) Voucher? (Y/N)
	servations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ppropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
BIOTIC EVALUATION	
Additional comments/description of pollution impacts	<u> </u>
is the sampling reach representative of the sheam (r	17N) 1 Thou, please explain.
	yygen (mg/l) pH (S,U.) Conductivity (µmhos/cm) Y/N) If not, please explain:
	(Note lab sample no, or id, and attach results) Lab Number:
Elevated Turbidity? (Y/N): Canopy (%	
Photograph Information:	
Base Flow Conditions? (Y/N): Date of last p	precipitation:Quantity:
MISCELLANEOUS	
county: lefterson	Township / City:
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ICLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	Distance from Evaluated Stream
DOWNSTREAM DESIGNATED USE(S) WWH Name:	Distance from Evaluated Stream

ChieFP Primary Headwater Habitat Evaluation Form

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

72

SITE NAME/LOCATION TITE TO THE STATE OF THE	-, , , , ,
SITE NUMBER S016 RIVER BASIN DRAINAGE AREA (mi²) LENGTH OF STREAM REACH (ft) 129 LAT. 40 237 LONG. 2016 RIVER CODE RIVER MILE	
DATE 4-22-2020SCORER JJP COMMENTS S016	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO R	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of SO (A) Bldr Slabs, Boulder, Cobble, Bedrock Types: SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): > 30 centimeters [20 pts]	Pool Depth Max = 30
COMMENTSMAXIMUM POOL DEPTH (centimeters):	4
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3'.3" - 4'.8") [15 pts] > 3.0 m - 4.0 m (> 9'.7" - 13') [25 pts] ≤ 1.0 m (≤ 3'.3") [5 pts] > 1.5 m - 3.0 m (> 4'.8" - 9'.7") [20 pts]	Bankfull Width Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	10
This Information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY 쇼NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) Wide >10m Moderate 5-10m L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Open Pasture, Row	-
☐ Narrow <5m	on ——
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Hoist Channel, isolated pools, no flow (Intermitted Dry channel, no water (Ephemeral)	nt)
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Tyes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
	Distance from Evaluated Stream Distance from Evaluated Stream
	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ship / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information:	
Elevated Turbidity? (Y/N):	
Were samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
8-y	
BIOTIC EVALUATION	
	er collections optional。NOTE: all voucher samples must be labeled with the site
	a sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders O Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquat	bserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
	with a contract of the contrac
	
DRAWING AND MADRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
	r site evaluation and a narrative description of the stream's location
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FLOW	3/1/
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NA	1250HIJ 8 5 1
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ChieFPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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SITE NAME/LOCATION_Tiltonsvi	Ila = VIII Ad coo	TIET GOOTE (SUITE	, meanes 1, 2, 0, 1	
			DRAINAGE AREA (mi²)	
SITE NUMBER S	LAT. 40.2079 LONG 9	30,678 FIVER COD	F RIVER MILE	
DATE 4-72-2020 SCORER JJP	COMMENTS	S017		Y
NOTE: Complete All Items On This For			PHWH Streams" for Insti	ructions
STREAM CHANNEL ON NONE / NA MODIFICATIONS:	TURAL CHANNEL RECOV	ERED TRECOVERIN	G ☐ RECENT OR NO REC	OVERY
SUBSTRATE (Estimate percent of every state of every state)	ery type of substrate present. (Check ONLY two predomin	ant substrate TYPE boxes	r
(Max of 40), Add total number of signific	ant substrate types found (Max o	of 8). Final metric score is	sum of boxes A & B.	HHEI
TYPE BLDR SLABS [16 pts]	ERCENT TYPE	[3 pt]	PERCENT 20	Metric Points
BOULDER (>256 mm) [16 pts]	LO DO LEA	F PACKWOODY DEBRIS		
□ □ BEDROCK [16 pt] □ ▼ COBBLE (65-256 mm) [12 pts]	O	DETRITUS [3 pts]		Substrate Max = 40
	10 00	Y or HARDPAN [0 pt] CK [0 pts]		
		IFICIAL [3 pts]	·	27
Total of Percentages of	/ A (A)		(B)	
Bldr Slabs, Boulder, Cobble, Bedrock	10 "21		(B)	A+B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES:	TOTAL NUMBER OF SU	BSTRATE TYPES:	
2. Maximum Pool Depth (Measure the m	aximum pool depth within the	61 meter (200 ft) evaluati	on reach at the time of	Pool Depth
evaluation. Avoid plunge pools from roa > 30 centimeters [20 pts]		(Check ONLY one box): cm - 10 cm [15 pts]		Max = 30
22.5 - 30 cm [30 pts]	□ <5	cm [5 pts]		25
> 10 - 22.5 cm [25 pts]	□ NC	WATER OR MOIST CHA	NNEL [0 pts]	4
COMMENTS		MAXIMUM POOL DEP	TH (centimeters):	
3. BANK FULL WIDTH (Measured as the			one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		0 m - 1.5 m (> 3' 3" - 4' 8") .0 m (≤ 3' 3") [5 pts]	[15 pts]	Width _Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		io iii (= o o) to pitoj		200
COMMENTS		AVERAGE BANKFULI	WIDTH (meters)	45
			(motors)	Maria V
	This information must a			
RIPARIAN ZONE AND FLOODF RIPARIAN WIDTH	PLAIN QUALITY	liver Left (L) and Right (R)	as looking downstream ☆	
L R (Per Bank)	L R (Most Predominan	:perBank) L F	}	
Wide >10m	Mature Forest, We		Conservation Tillage	¥1
☐ ☐ Moderate 5-10m	Immature Forest, S	Shrub or Old	Urban or Industrial	
□ □ Narrow <5m	Residential, Park,	New Field	Open Pasture, Row	
□ □ None	☐ ☐ Fenced Pasture		Crop Mining or Construction	
COMMENTS				
FLOW REGIME (At Time of Eval	luation) (Check ONLY one box)	:		
Stream Flowing	le (Interetitie)		d pools, no flow (Intermittent)	
Subsurface flow with isolated poor	Is (Interstitial)	Dry channel, no wate	(⊏pnemerai)	
SINUOSITY (Number of bends p	er 61 m (200 ft) of channelly (C	neck ONLY one how		-
None 🔲	1.0	2.0	3.0	
0.5 □	1,5	2.5	□ >3	
STREAM GRADIENT ESTIMATE			1	
Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft)	☐ Moderate to Severe	2	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Tyes No QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name:
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of last precipitation; Quantity:
Photograph Information:
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): (Note lab sample no, or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S,U,) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
ID number, Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
P Forest / ROW
FLOW SOHIJ POOS
Forest Soft)
1000
ROW

ChieFPA Primary Headwater Habitat Evaluation Form HHFI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION TILLONSVILL		
TITTOWS OF TO	e-windson	
SITE NUMBER_S	018 RIVER BASIN DRAINAGE AREA (mi²) LAT. 40.1087 LONG. 80.6768 RIVER CODE RIVER MILE	
LENGTH OF STREAM REACH (ft) 150	LAT. 40.2087 LONG. 80.5768 RIVER CODE RIVER MILE	
DATE 4-22-2020 SCORER	COMMENTS S018	
NOTE: Complete All Items On This For	rm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL ONONE / NA	ATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	N/EDV
MODIFICATIONS:	NESSVERING EN RECENT OF NO RECE	VERT
(Max of 40). Add total number of signific	rery type of substrate present. Check ONLY two predominant substrate TYPE boxes cant substrate types found (Max of 8). Final metric score is sum of boxes A & B. PERCENT TYPE PERCENT	HHEI Metric
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]	SILT [3 pt]	Points
☐ ☐ BOULDER (>256 mm) [16 pts] _ ☐ ☐ BEDROCK [16 pt]	LEAF PACKWOODY DEBRIS [3 pts] FINE DETRITUS [3 pts]	Substrate
	CLAY or HARDPAN [0 pt] MUCK [0 pts]	Max = 40
		70
SAND (<2 mm) [6 pts]	/O ARTIFICIAL [3 pts]	40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	5 (A) 3 (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBS		
2. Maximum Pool Depth (Measure the m	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	
evaluation. Avoid plunge pools from road	d culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	30
COMMENTS	MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box):	
> 4.0 - store (> 420 F20 - 4-1		Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	Wldth
	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] = 1.0 m (≤ 3' 3") [5 pts]	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide > 10m	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters) Lambda also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A FLOODPLAIN QUALITY Lambda also be completed PLAIN QUALITY Lambda also be completed PLOOPLAIN QUALITY Lambda also be completed Conservation Tillage Immature Forest, Shrub or Old	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed PLAIN QUALITY &NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters) Lambda also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream from the properties of the	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m None	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDTH (meters) This information must also be completed PLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Auture Forest, Wetland Mature Forest, Wetland Conservation Tillage	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m None COMMENTS	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Signature Fenced Pasture Note of the predominant per Bank Plant Pasture Plant Pas	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m None COMMENTS FLOW REGIME (At Time of Eval	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters)	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow <5 m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermittent)	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow <5 m None COMMENTS FLOW REGIME (At Time of Eval	This information must also be completed PLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Residential, Park, New Field Fenced Pasture Moist Channel, isolated pools, no flow (Intermittent)	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS SINUOSITY (Number of bends pools)	This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Conservation Tillage Immature Forest, Shrub or Old Field Crop Winning or Construction Mustion) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] AVERAGE BANKFULL WIDTH (meters) AVERAGE BANKFULL WIDT	Wldth
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS SINUOSITY (Number of bends proposed) None	This Information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland	Wldth

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - TYes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
CM/H Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream Distance from Evaluated Stream
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
County: 1efferson Towns	NRCS Soil Map Page: NRCS Soil Map Stream Order
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 30	
Were samples collected for water chemistry? (Y/N): (Note lab	sample no, or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S,U,) Conductivity (µmhos/cm)
is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher ID number. Include appropriate field data	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Of Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquati	bserved? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
	OF STREAM REACH (This <u>must</u> be completed):
/ cash	r site evaluation and a narrative description of the stream's location
1111	Row
() a W	note Ener
	1,1006 Fores
FLOW \$50 PM	
-LOW	
- 1//	
11500	
Row	(2)

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

	THIEF OCOTE (Sum	
SITE NAME/LOCATION T; I have 1 19		DRAINAGE AREA (mi ²)
SITE NUMBER_ \$019 LENGTH OF STREAM REACH (ft) 200 LAT.	40 22/2 LONG 80 LATH BIVER COL	DE DIVED MILE
DATE 4-22-1020 SCORER JJP	COMMENTS S019	NIVER WHEE
NOTE: Complete All Items On This Form - R		PHWH Streams" for Instructions
STREAM CHANNEL IN NONE / NATURA MODIFICATIONS:	L CHANNEL RECOVERED RECOVERIN	IG LI RECENT OR NO RECOVERY
MODIFICATIONS.		
	oe of substrate present. Check ONLY two predom ibstrate types found (Max of 8). Final metric score is	s sum of boxes A & B. HHEI
TYPE PERCE	<u>TYPE</u>	PERCENT Metric Points
□ □ BOULDER (>256 mm) [16 pts]	LEAF PACKWOODY DEBRI	S [3 pts]
□ □ BEDROCK [16 pt] □ COBBLE (65-256 mm) [12 pts] 2-9	FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pt]	Substrate Max = 40
GRAVEL (2-64 mm) [9 pts] 50	MUCK [0 pts]	
□ □ SAND (<2 mm) [6 pts] 1.5	☐ ☐ ARTIFICIAL [3 pts]	
Total of Percentages of 7 5	(A)	(B) / A + B
Bidr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRAT	TOTAL NUMBER OF SI	JBSTRATE TYPES:
	um pool depth within the 61 meter (200 ft) evalua erts or storm water pipes) (Check ONLY one box	
> 30 centimeters [20 pts]	>5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CH	ANNEL [0 pts]
COMMENTS	MAXIMUM POOL DE	PTH (centimeters):
	nge of 3-4 measurements) (Check ONLY > 1.0 m - 1.5 m (> 3' 3" - 4' 8'	one box): Bankfull
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (≤ 3' 3") [5 pts]) [15 pts] Width Max=30
> 1.5 m - 3.0 m (> 4'8" - 9'7") [20 pts]		40 15
COMMENTS	AVERAGE BANKFUI	LL WIDTH (meters)
RIPARIAN ZONE AND FLOODPLAIN	This information must also be completed QUALITY ♣NOTE: River Left (L) and Right (F)	t) as looking downstream☆
RIPARIAN WIDTH FL	OODPLAIN QUALITY	
L R (Per Bank) L ☐ Wide >10m	R (Most Predominant per Bank) L Mature Forest, Wetland	R Conservation Tillage
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old	_
Carl and	Field Residential Park New Field	— Open Pasture Row
	Residential, Park New Field Fenced Pasture	Crop
U U None COMMENTS	reliced Pastule	☐ Mining or Construction
FLOW REGIME (At Time of Evaluation	7) (Check ONLY one box):	
Stream Flowing	Moist Channel, isola	ted pools, no flow (Intermittent)
Subsurface flow with isolated pools (Int	erstitial) Dry channel, no wat	er (⊏pnemerai) ——————
SINUOSITY (Number of heads per 61	m (200 ft) of channel) (Check ONLY one box):	
None 1.	2.0	3.0
0.5	5 U 2.5	□ >3
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft)	e Severe (10 ft/100 ft)

BIOTIC EVALUATION formed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) h Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Include Important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	ADDITIONAL STREAM INFORMATION (This Information Must Als	so be Completed):
Distance from Evaluated Stream	QHEI PERFORMED? - TYES NO QHEI Score	(If Yes, Attach Completed QHEI Form)
CWH Name: Distance from Evaluated Stream	DOWNSTREAM DESIGNATED USE(S)	
ENVIR Name: Distance from Evaluated Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION IGS Quadrangle Name: NRCS Soll Map Page: NRCS Soll Map Stream Order unty: Lef Fetson Co. Township / City: MISCELLANEOUS see Flow Conditions? (Y/N): Date of last precipitation: Quantity: Clograph Information: Quantity: Quant	_	
INCS Soil Map Page: NRCS Soil Map Stream Order	J EWH Name:	Distance from Evaluated Stream
Inty:	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
MISCELLANEOUS se Flow Conditions? (Y/N): Date of last precipitation: Quantity:		
Date of last precipitation: Quantity: Quan	ounty: Jetterson Co Town	nship / City:
coorgraph Information: valed Turbidity? (Y/N);	MISCELLANEOUS	
Canopy (% open):	ase Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Okasilist Oka	hotograph Information;	
Dissolved Oxygen (mg/l) PH (S.U.) Conductivity (µmhos/cm) he sampling reach representative of the stream (Y/N) If not, please explain: ditional comments/description of pollution impacts:		
If not, please explain: BIOTIC EVALUATION		
If not, please explain: BIOTIC EVALUATION	ield Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)Conductivity (µmhos/cm)
BIOTIC EVALUATION If ormed? (Y/N):V (If Yes, Record all observations, Voucher collections optional, NOTE: all voucher samples must be labeled with the site ID number, include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) In Observed? (Y/N)V Voucher? (Y/N)V Salamanders Observed? (Y/N)V Voucher? (Y/N)V Voucher? (Y/N)V Aquatic Macroinvertebrates Observed? (Y/N)V Voucher?	the sampling reach representative of the stream (Y/N) If not	t, please explain:
BIOTIC EVALUATION If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) In Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Acquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vou		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	reformed? (Y/N): (If Yes, Record all observations. Voucher ID number. Include appropriate field dat ish Observed? (Y/N) Voucher? (Y/N) Salamanders Crogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua	ta sheets from the Primary Headwater Habitat Assessment Manual) Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	omments Regarding Biology.	
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location		
Prowfield pewfield		
Dewfield Sill	Include important landmarks and other features of interest fo	
ow -> Prewfield Soft NBOOT SOFT NBOOT	AN	77 1 /-
ow - New Field New Field Soft N Poot Soft N Poot	9	
ON - New File Son Whoo?		Lield S
Con South 10007		ew /
Con South Soot	LOW	
Con Son Whood		
COS SOHNBOOT SOUND	X	/ but we
COS SOHNBOOT	96	h
SOHNIPOOT ()		
So. Dalil	() () HILL	7009
	50"	Danie

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION TO HANSUILLY - LUINOS CA	
SITE NUMBER S020 RIVER BASIN DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 130 LAT. 40:2122 LONG. 30.6748 RIVER CODE RIVER MILE	
DATE 4-22-2020SCORER JJ () COMMENTS S020	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructi	ions
STREAM CHANNEL ONONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	RY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	HHEI ⁄letric
BLDR SLABS [16 pts] SILT [3 pt]	oints
	ubstrate
COBBLE (65-256 mm) [12 pts] Z CLAY or HARDPAN [0 pt]	lax = 40
GRAVEL (2-64 mm) [9 pts]	14
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	ol Depth
	lax = 30
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS Work channel and MAXIMUM POOL DEPTH (centimeters):	
	ankfull
> 4.0 meters (> 13') [30 pts]	Width
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	lax=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	5
AVERAGE BANKFULL WIDTH (meters)	G00 B 11
This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland	
mature Forest Shrub or Old	
Field Ones Resture Revision	
Narrow <5m Residential, Park, New Field Open Pasture, Row Crop	
OMMENTS Natural sas pipeline from Floor plain area scrubs	dondo
FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Grant Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	

ADDITIONAL STREAM INFORMATION (This Information	Must Also be Completed):
QHEI PERFORMED? - TYes TO NO QHEI S	Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
	Distance from Evaluated Stream
_	Distance from Evaluated Stream Distance from Evaluated Stream
	NG THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	
ISGS Quadrangle Name:	NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City:
	Township / City:
MISCELLANEOUS	
	tation: Quantity:
hotograph Information:	
levated Turbidity? (Y/N): N Canopy (% open)	F3
	(Note lab sample no, or id. and attach results) Lab Number:
	(mg/l) pH (S.U.) Conductivity (µmhos/cm)
27 (29)	If not, please explain: Stream reach
section surveyed for	mpletily within natural cas line for
Additional comments/description of pollution impacts:	
ish Observed? (Y/N) Voucher? (Y/N) Sala rogs or Tadpoles Observed? (Y/N) Voucher? (Y/N)	ns. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ate field data sheets from the Primary Headwater Habitat Assessment Manual) manders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
	RIPTION OF STREAM REACH (This <u>must</u> be completed): interest for site evaluation and a narrative description of the stream's location
	Ru W
S JYW S	Scrobshrub O of greats
	-000 AT
LOW	~ 4) ~
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101990	18
	Para suras
	005
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APPENDIX D Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms



Metric 1. Wetland Area (size). Select one size cleas and assign score. Solice of the size cleas and assign score. Metric 2. Upland buffers and surrounding land use. Metric 2. Upland buffers and surrounding land use. Metric 3. Hypland buffers and surrounding land use. Metric 3. Hypland buffers area could well and permeter (f) Wetry NARROW. Buffers average 50m (16/6) or more around well and permeter (f) Wetry LOW. Zell growth or older forest; prairie, searange for the size of	Site: Tilt	UNSVI	11e - Windsor Rater(s): CDK/JJP Date: 4/21/20
Selections size class and assign score. 30 acres (20.2 0.2 ha) (6 pts) 21 to 60 acres (20.2 0.2 ha) (6 pts) 22 to 60 acres (20.4 0.2 0.2 ha) (6 pts) 10 to 2-58 acres (4 to 51.0 ha) (2 pts) 10 to 2-58 acres (4 to 51.0 ha) (2 pts) 10 to 2-58 acres (4 to 51.0 ha) (2 pts) 10 to 2-58 acres (4 to 51.0 ha) (2 pts) 20 to 40 acres (20.4 to 5.2 ha) (2 pts) 20 to 40 acres (20.4 to 5.2 ha) (2 pts) 20 to 40 acres (20.4 to 5.2 ha) (2 pts) 21 to 40.3 acres (0.4 to 5.2 ha) (2 pts) 22 to 50 acres (10.4 to 5.2 ha) (2 pts) 23 to 4 acres (0.4 to 5.2 ha) (2 pts) 24 to 40 acres (20.4 to 5.2 ha) (2 pts) 25 to 50 acres (10.4 to 5.2 ha) (2 pts) 26 to 50 acres (10.4 to 5.2 ha) (2 pts) 27 to 50 acres (10.4 to 5.2 ha) (2 pts) 28 to 50 acres (10.4 to 5.2 ha) (2 pts) 29 to 50 acres (10.4 to 5.2 ha) (2 pts) 20 to 50		11-	
Select one size class and assign score. - Policy acres (20, 20, 10) (20, 20 ha) (5 pts) 10 to -25 acres (10 to 10 ha) (4 pts) 3 to 10 acres (10 to 4 ha) (2 pts) 10 to -25 acres (10 to 10 ha) (4 pts) 3 to 10 acres (10 to 4 ha) (2 pts) 2 to 11 to -25 acres (10 to 10 ha) (4 pts) 3 to 10 acres (10 to 10 acres (10 to 4 ha) (2 pts) 4 to 13 acres (0 to 4 ha) (2 pts) 4 to 13 acres (0 to 4 ha) (2 pts) 4 to 15 acres (0	111	_ M	· · ·
25 to -59 acres (10.1 to -20.2 ha) (5 pts) 10 to -25 acres (10.1 to -20.2 ha) (5 pts) 3 to -510 acres (11.2 to -4 ha) (3 pts) 3 to -510 acres (11.2	max 6 pts. subto	tal Se	lect one size class and assign score. W001-PEM-CAT2
10 to <25 acres (4 to + 10 tha) (4 pis) 3 to <3 press (3 to <4 press (2 to 4 pis) (3 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <3 press (0.12 to <1 2 his) (2 pis) 0.3 to <1 4 his press (0.12 to <1 2 his) (2 pis) 0.3 to <1 4 his press (0.12 to <1 4 his press (0.12 to <1 2 his) (2 pis) 0.3 to <1 4 his press (0.12 to <1 4 his press (0.12 to <1 2 his press (0			
3 to <3 acres (0.12 to <1.2he) (2pts) 20 to <1.2he) (2pts) 2pts) 2pts 2pt			10 to <25 acres (4 to <10.1ha) (4 pts)
Metric 2. Upland buffers and surrounding land use. Calculate average buffer with. Select only one and assign score. Do not double check.			o to 410 doices (1.2 to 411d) (6 pts)
Metric 2. Upland buffers and surrounding land use. 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around welland perimeter (1) MCROW. Buffers average 50m (164ft) or more around welland perimeter (4) MCROW. Buffers overage 50m (50m (32c) strately around welland perimeter (1) VERY LOW. On the field roll recommendation of the commendation of the commendatio			
## April ## Bull ## Bu	1 7	Пм	
Wilbe: Buffers average 50m (154R) or more around welland perimeter (7) MARROW, Buffers average 20m to -50m (82 to 154ft) around welland perimeter (1) VERY NARROW, Buffers average 10m to -50m (82 to 154ft) around welland perimeter (1) VERY NARROW, Buffers average 10m to -50m (32 to 154ft) around welland perimeter (1) VERY NARROW, Buffers average 50m to -50m (32ft to -82ft) around welland perimeter (1) VERY NARROW, Buffers average 50m to -50m (32ft to -82ft) around welland perimeter (1) VERY NARROW, Buffers average 50m (54ft) avoid welland perimeter (1) VERY NARROW, Buffers average 50m (54ft) avoid welland perimeter (1) VERY NARROW, Buffers average 50m (54ft) avoid welland perimeter (2) VERY LOW. 20ft field (-10 years), shrub land, young second growth forest (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) 100 year floodplain (1) VERY NARROW, Sorre all that apply. (100 year floodplain (1) 100 year floodplain (1)	6 7		
NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)	max 14 pls. subto	tal 2a	
VERY NARROW. Buffers average < 10m (<32ft) around welland perimeter (0) 2b. Intensity of surrounding land use. Seed one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlift area, etc. (7) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlift area, etc. (7) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlift area, etc. (7) VERY LOW. 2nd growth or older forest, prairie, savannah, wildlift area, etc. (7) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fellow field. (3) High JH groundwater (3) Wetric 3. Hydrology. High JH groundwater (5) Other groundwater (5) Other groundwater (5) Other groundwater (6) Other groundwater (6) Other groundwater (8) Practic flags and the provided control of			IMEDICAN Bancio arolago zon la com (oz la riola) arodna Mollana polimbio (1)
VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) VERY LOW. 2nd file (7) (9 vers), shubbland, young second growth forest,(5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) High Pl groundwater (3) Metric 3. Hydrology. Westing and the properties of the properties			
LOW. Old field (>10 years), shrub land, young second growth forest (5)		2b	
HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) Metric 3. Hydrology. 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Percepitation (1) Seasonal/Intermittent surface water (3) Percepitation (1) Percepitation (1) Seasonal/Intermittent surface water (3) Percepitation (1) Percepitation (1) Seasonal/Intermittent surface water (3) Percepitation (1) Percep			LOW. Old field (>10 years), shrub land, young second growth forest. (5)
Metric 3. Hydrology. Time			
max 30 pis. subbleted 3a. Sources of Water. Score all that apply, linkin pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3b. Connectivity. Score all that apply, linkin pH groundwater (5) Other groundwater (3) Percepitation (2) Seasonal/Intermittent surface water (3) Perrennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. 3c. Maximum water depth. Select only one and assign score. 3c. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. None or none apparent (4) Recovering (3) Recevering (3) Recovering (3) Recovering (3) Recovering (3) Poor to fair (2) Part of wetland/upland (e.g., forest), complex (1) Part of wetland/upland (e.g., fores	21 29	M	
High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (3) Perennial surface water (3) Perennial surface water (3) Perennial surface water (3) Dourston or undeaton/sustruation. Score one or dobt check. 3. Maximum water depth. Select only one and assign score. 3. O. 1 to 0.7m (15.7 to 27.6in) (2) Seasonally inundated/saturated (4) Recovered (7) Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) 4a. Substrate disturbance. Score one or double check and average. Metric 4. Habitat Alteration and Development. 4b. Habitat development. Select only one and assign score. Excellent (7) Recovered (3) Recovered (6) Recovered (7) Recovered (7) Recovered (3) Recovered (3) Recovered (3) Recovered (3) Recovered (3) Recovered (3) Recovered (6) Recovered (6) Recovered (7) Recovered (7) Recovered (8) Recovered (9) Recovered (9	10		
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Seasonally inundated (2)		3c.	
Seasonally saturated in upper 30cm (12ln) (1) 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (6) Recovering (6) Recovering (6) Recovering (6) Recovering (7) Recovering (7) Recovering (8) Re			
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Recovered (7) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (3) Recovering (3) Recovering (3) Recovering (3) Recovering (2) Recovering (2) Recovering (2) Recovering (3) Recovering (3) Recovering (3) Recovering (3) Recovering (2) Recovering (2) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (5) Recovering (6) Recovering (7) Recovering (8) Recovering (9) Reco		3e.	
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Metric 4. Habitat Alteration and Development. 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recovering (4) Recovering (5) Recovering (6) Recovering (6) Recovering (7) Recovering (6) Recovering (7) Recovering (8) Rec			
Metric 4. Habitat Alteration and Development. 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovered (weir dredging other 0:0 - Can Change
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Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Subtotal this page Moderately good (4) Fair (3) Poor to fair (2) Poor (1) Check all disturbances observed mowing grazing clearcutting Woody debris removal Low			Very good (6)
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Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Subtotal this page Recovered (6) Recovering (3) Recovering (4) Recoverin		4c.	250M - 0
Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1)			Recovered (6) 3 mowing shrub/sapling removal — Roy
selective cutting woody debris removal—www farming nutrient enrichment			
subtotal this page toxic pollutantsnutrient enrichment	75	\neg	selective cutting dredging
Macrotiada II. adiladiy 2001 jilil			001 jjm

Site:	Tilt	onsville - Windsor Rater	s): (1	K/JJP	Date: 4/21/20
sı	36 ubtotal first pa	Metric 5. Special Wetland	ds.	W001-PEM-CAT2	
	36				
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ur	restricted hyd	rology (10)	
	None	Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openir Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water for Category 1 Wetland. See Question 1	ngs) (10) tened or endal owl habitat or u Qualitative Ra	ngered species (10) usage (10) ating (-10)	
-7	34	Metric 6. Plant communit	ties, inte	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation 0	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises < 0.1ha (0.24	
		Aquatic bed Emergent	1	Present and either comprises small	
		(7) Shrub		vegetation and is of moderate q significant part but is of low qual	
		0 Forest	2	Present and either comprises sign	
		0 Mudflats	2	_	
		n Open water		vegetation and is of moderate q	uality or comprises a small
			3	part and is of high quality	
		6b. horizontal (plan view) Interspersion.	3	Present and comprises significant	part, or more, of wetland's
			-	vegetation and is of high quality	
		Select only one. High (5)	Narrative De	scription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomin	nance of nonnative or
		Moderate (3)		disturbance tolerant native spec	
		Moderately low (2)	mod	Native spp are dominant compone	
		X Low (1)		although nonnative and/or distu	
		None (0)		can also be present, and specie	
		6c. Coverage of invasive plants. Refer		moderately high, but generally w	
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	
		Extensive >75% cover (-5)	3	and/or disturbance tolerant nativ	
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	
		Sparse 5-25% cover (-1)		the presence of rare, threatened	
		Nearly absent <5% cover (0)		11	
		Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	res)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		Ocarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopogra	aphy Cover Scale	
		Line and a second book	0	Absent	
			1	Present very small amounts or if n	nore common
				of marginal quality	ioro common
			2	Present in moderate amounts, but	not of highest
				quality or in small amounts of hig	ghest quality
	r:		3	Present in moderate or greater an	nounts
24				and of highest quality	

woody debris removal RaW

toxic pollutants

farming

nutrient enrichment

last revised 1 February 2001 jjm

subtotal this page

Site:	tilto	sville - Windsor Rate	er(s): くD	K/JJP Date: 4/21/20
0	26 ubtotal first pa	Metric 5. Special Wetla	w ands.	002-PEM-CAT1
max 10 pts.	subtotal	Check all that apply and score as indicated		
	Nove	Known occurrence state/federal t Significant migratory songbird/wa Category 1 Wetland. See Questi	nd-restricted hydrolopenings) (10) threatened or enda ter fowl habitat or toon 1 Qualitative Ra	ngered species (10) usage (10) ating (-10)
2	2-8	Metric 6. Plant commu	nities, inte	erspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation (Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	- 1	Present and either comprises small part of wetland's
		Emergent		vegetation and is of moderate quality, or comprises a
		Shrub		significant part but is of low quality
		Forest	2	Present and either comprises significant part of wetland's
		O Mudflats	-	vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other	3	
			3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality
		Select only one.	N	
		High (5)		scription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)	-	disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		Low (1)		although nonnative and/or disturbance tolerant native spp
		None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp
		or deduct points for coverage	high	A predominance of native species, with nonnative spp
		Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)	,	the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0)	•	
		Absent (1)	Mudflat and	Open Water Class Quality
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in) / 3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh	· -	
		Amphibian breeding pools		aphy Cover Scale
			0	Absent
			1	Present very small amounts or if more common
				of marginal quality
			2	Present in moderate amounts, but not of highest
			2	quality or in small amounts of highest quality
			3	
0 6	ï -		S	Present in moderate or greater amounts
') (and of highest quality

toxic pollutants

acid

MIRC

evere

farming

roinage

nutrient enrichment

last revised 1 February 2001 jjm

Site:	iltun.	sville - Windsor Rater(s	s): CD	K/JJP Date: 4/23/20
sı.	36 obtotal first pa	Metric 5. Special Wetland		V003-PEM-CATMOD2
max 10 pts.	subtotal	Check all that apply and score as indicated.		
	Nove	Relict Wet Prairies (10) Known occurrence state/federal threat Significant migratory songbird/water for Category 1 Wetland. See Question 1	stricted hydrologs) (10) tened or endar owl habitat or u Qualitative Ra	gy (5) Igered species (10) sage (10) ting (-10)
7	43	Metric 6. Plant communit	ies, inte	rspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities	Vegetation C	ommunity Cover Scale
max 20 pts.	Subtotal	Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub Forest O Mudflats Open water Other 6b. horizontal (plan view) Interspersion. Select only one. High (5) Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	2	Absent or comprises <0.1ha (0.2471 acres) contiguous area Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality Present and comprises significant part, or more, of wetland's vegetation and is of high quality Scription of Vegetation Quality Low spp diversity and/or predominance of nonnative or disturbance tolerant native species Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 Microtopogra 0 1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres) Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality
			3	Present in moderate or greater amounts and of highest quality

43

Site: Tilto	nsville - Windsol	Rater(s): CDK / JJP	Date: 4/23/20
	7		,
	Metric 1. Wetland	Area (size).	
max 6 pts. subtota	Select one size class and assign so	W004-PEM-	CATMOD2
	>50 acres (>20.2ha) (6 p		
	25 to <50 acres (10.1 to <10 to <25 acres (4 to <10		0.031 ac
	3 to <10 acres (1.2 to <4)		
	0.3 to <3 acres (0.12 to < 0.1 to <0.3 acres (0.04 to		
	< 0.1 to <0.3 acres (0.04 to <0.1 acres (0.		
14 14	Metric 2. Upland b	uffers and surrounding	land use.
'			
max 14 pts. subtota	za. Gardiate areitage barrer matri	Select only one and assign score. Do not of iom (164ft) or more around wetland perimeter	
	MEDIUM. Buffers average	ge 25m to <50m (82 to <164ft) around wetlan	nd perimeter (4)
		ige 10m_to <25m (32ft to <82ft) around wetla s average <10m (<32ft) around wetland perin	
	2b. Intensity of surrounding land us	e. Select one or double check and average)
8		or older forest, prairie, savannah, wildlife ares), shrub land, young second growth forest.	
	MODERATELY HIGH. R	esidential, fenced pasture, park, conservatio	n tillage, new fallow field. (3)
	Matria 2 Ulyahadaan	open pasture, row cropping, mining, constru-	ction. (1)
13 127	Metric 3. Hydrolog	у.	
max 30 pts, subtotal	3a. Sources of Water. Score all the	at apply. 3b. Conne	ectivity. Score all that apply.
	High pH groundwater (5)	_	100 year floodplain (1)
	Other groundwater (3) Precipitation (1)	7	Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1)
2	Seasonal/Intermittent sur Perennial surface water (Part of riparian or upland corridor (1)
	3c. Maximum water depth. Select		on inundation/saturation. Score one or dbl check Semi- to permanently inundated/saturated (4)
	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6i	n) (2)	Regularly inundated/saturated (3)
	<0.4m (<15.7in) (1)	(1) (2)	Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1)
		gic regime. Score one or double check and	average.
	None or none apparent (*) Recovered (7)	2) Check all disturbances observed ditch	point source (nonstormwater)
	Recovering (3)	tile None	filling/grading
	Recent or no recovery (1	dike weir	road bed/RR track dredging
		stormwater input	other
7 34	Metric 4. Habitat A	Iteration and Developm	ent.
		_	
max 20 pts. subtotal	4a. Substrate disturbance. Score of None or none apparent (4		
	Recovered (3)	2	
	Recovering (2) Recent or no recovery (1)		
	4b. Habitat development. Select o		
	Excellent (7) Very good (6)		
	Good (5)	<u> </u>	
	Moderately good (4) Fair (3)	1	
	Poor to fair (2)		
	Poor (1) 4c. Habitat alteration. Score one o	double check and average.	
	None or none apparent (9		
	Recovered (6)	mowing	shrub/sapling removal ROW
1723	Recovering (3) Recent or no recovery (1)	clearcutting Rov	herbaceous/aquatic bed removal sedimentation
211		selective cutting	dredging
24			farming nutrient enrichment
subtotal this			
last revised 1 Febru	iary 2001 jjm		

Site:	iltors	ille - Windsel Rater(s	s): CDK	/ JJP	Date: 식 13/20
sut	34 ototal first pa	Metric 5. Special Wetland	ds.	W004-PEM-CATMOD2	2
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-un Lake Erie coastal/tributary wetland-ree Lake Plain Sand Prairies (Oak Openir Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water for Category 1 Wetland. See Question 1	stricted hydrologs) (10) tened or endar owl habitat or u Qualitative Ra	ngered species (10) usage (10) uting (-10)	76a - 2
7	36	Metric 6. Plant communit	ties, inte	erspersion, microto	ppography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	
		Aquatic bed Emergent Shrub	1	Present and either comprises sma vegetation and is of moderate q significant part but is of low qual	uality, or comprises a
		O Forest	2	Present and either comprises sign	
		Mudflats		vegetation and is of moderate q	
		Open water		part and is of high quality	
		Other 6b. horizontal (plan view) Interspersion.	3	Present and comprises significant vegetation and is of high quality	-
		Select only one.		0264 56 356 3356	
		High (5)		scription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomir	
		Moderate (3) Moderately low (2)	mod	disturbance tolerant native spec	
		Low (1)	mod	Native spp are dominant compone although nonnative and/or distur	_
		None (0)		can also be present, and specie	
		6c. Coverage of invasive plants. Refer		moderately high, but generally w	•
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	, with nonnative spp
		Extensive >75% cover (-5)		and/or disturbance tolerant nativ	e spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	The state of the s
		Sparse 5-25% cover (-1)		the presence of rare, threatened	l, or endangered spp
		Nearly absent <5% cover (0)	B. 169 - 4 1	0	
		Absent (1) 6d. Microtopography.	0	Open Water Class Quality Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	res)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh	-)
		Amphibian breeding pools	Microtopogra	aphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if n of marginal quality	
			2	Present in moderate amounts, but	
		e		quality or in small amounts of hi	
			3	Present in moderate or greater an	nounts
12/				and of highest quality	

Site: Ti	Hons V	The Windsor Rater(s): C	DK/JJP	Date: 4/23/20
7) M	etric 1. Wetland Area (size).		, ,
0			W005-PEM-CATMOD	2
max 6 pts, sub	ototal Sel	ct one size class and assign score.	VVOOS-1 LIVI-CATIVIOD	_
		>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts)		
		10 to <25 acres (4 to <10.1ha) (4 pts)	0.021	
		3 to <10 acres (1.2 to <4ha) (3 pts)	0.924	
		0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)		
		<0.1 acres (0.04ha) (0 pts)		
2	. М	etric 2. Upland buffers and s	urrounding land use	ı <u>.</u>
0	{ '''		g	
max 14 pts. sub	ototal 2a.	Calculate average buffer width. Select only one and a		
		WIDE. Buffers average 50m (164ft) or more are	THOM STATE TO STATE OF	\mathcal{O}
		MEDIUM. Buffers average 25m to <50m (82 to NARROW. Buffers average 10m to <25m (32ft		, 0
		VERY NARROW. Buffers average <10m (<32ft)	around wetland perimeter (0)	,
	2b.	Intensity of surrounding land use. Select one or doub VERY LOW. 2nd growth or older forest, prairie,		
		LOW. Old field (>10 years), shrub land, young s		
		MODERATELY HIGH. Residential, fenced past		llow field. (3)
		HIGH. Urban, industrial, open pasture, row crop	ping, mining, construction. (1)	
16 3		etric 3. Hydrology.		
		George (W.)		
max 30 pts sub	³ 3a.	Sources of Water. Score all that apply. High pH groundwater (5)	3b. Connectivity. Score a	
		Other groundwater (3)	Between stream	n/lake and other human use (1)
		Precipitation (1)		upland (e.g. forest), complex (1)
		Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)		or upland corridor (1) aturation. Score one or dbl check.
	3c.	Maximum water depth. Select only one and assign sc	ore. Semi- to perma	nently inundated/saturated (4)
		>0.7 (27.6in) (3)		ated/saturated (3)
		0.4 to 0.7m (15.7 to 27.6in) (2) < <0.4m (<15.7in) (1)	Seasonally inun	rated in upper 30cm (12in) (1)
	3e.	Modifications to natural hydrologic regime. Score one		
		None or none apparent (12) Check all disturba		
		Recovered (7) Recovering (3) Additch tile	point source (no filling/grading	instormwater)
		Recent or no recovery (1) dike	road bed/RR tra	ıck
		weir	dredging	
rr-		stormwater ii		
9 2	$q \mid M$	etric 4. Habitat Alteration and	d Development.	
max 20 pts. sub	ototal 4a.	Substrate disturbance. Score one or double check and None or none apparent (4)	d average.	
		Recovered (3)		
		Recovering (2)		
	4h	Recent or no recovery (1) Habitat development. Select only one and assign score	re	
	40.	Excellent (7)		
T.		Very good (6)		
		Good (5) Moderately good (4)		
		Fair (3)		
		Poor to fair (2)		
	4c.	Poor (1) Habitat alteration. Score one or double check and ave	rage.	
		None or none apparent (9) Check all disturbar		
		Recovered (6) 3 Mowing 19	zsidential Shrub/sapling re	
		Recovering (3) grazing		uatic bed removal
Γ~	-4	Recent or no recovery (1) clearcutting selective cutt		
12	9	woody debris	removal ℓ <i>o⊷</i> farming	
subtotal	this page	toxic pollutar	tsnutrient enrichm	ent
last revised 1 Fe		01 jjm		

Site: Till	onsville - Windsor Rater	s): ⊂ D	K/JJP	Date: 4/23/20
subtotal first	Metric 5. Special Wetland	ds.	W005-PEM-CATN	MOD2
max 10 pts. subtotal	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ue Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water for	estricted hydro ngs) (10) atened or enda fowl habitat or I Qualitative R	logy (5) angered species (10) usage (10) ating (-10)	
7 36	Metric 6. Plant communi	ties, int	erspersion, microto	ppography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises < 0.1ha (0.2-	471 acres) contiguous area
	Aquatic bed	1	Present and either comprises sm	all part of wetland's
	Emergent		vegetation and is of moderate of	juality, or comprises a
	Shrub		significant part but is of low qua	- H
	Forest	2	Present and either comprises sig	
	<u>O</u> Mudflats		vegetation and is of moderate of	quality or comprises a small
	Open water	-	part and is of high quality	
	Other	3	Present and comprises significan	
	6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	<u>/</u>
	Select only one.	M		
	High (5)		escription of Vegetation Quality	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or predomi	
	Moderately low (2)	mod	Native spp are dominant compon	
	Low (1)	niod	although nonnative and/or distu	=
	None (0)		can also be present, and specie	The state of the s
	6c. Coverage of invasive plants. Refer		moderately high, but generally	-
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native species	
	Extensive >75% cover (-5)	_	and/or disturbance tolerant nati	ve spp absent or virtually
	Moderate 25-75% cover (-3)		absent, and high spp diversity a	and often, but not always,
	Sparse 5-25% cover (-1)		the presence of rare, threatene	d, or endangered spp
	Nearly absent <5% cover (0)			
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	acres)
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
	O Standing dead >25cm (10in) dbh	Microtopoa	ranhy Cayar Saala	
	Amphibian breeding pools	0	raphy Cover Scale Absent	
		1	Present very small amounts or if	more common
		•	of marginal quality	nore common
		2	Present in moderate amounts, bu	t not of highest
		-	quality or in small amounts of hi	
		3	Present in moderate or greater ar	
		_	and of highest quality	
136				

Site: Tillus	11e-Windsor	Rater(s): (DK))	Date: 423 20
2 2	Metric 1. Wetland A	rea (size).	MA O DAM -CAT?
max 6 pts. subtotal	Select one size class and assign sco >50 acres (>20.2ha) (6 pts 25 to <50 acres (10.1 to <2 10 to <25 acres (4 to <10.1 3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1 0.1 to <0.3 acres (0.04 to < 0.1 acres (0.04ha) (0 pts)	ha) (4 pts)) (3 pts) 2ha) (2pts)	100Le-PEM-CATZ
57	Metric 2. Upland bu	ffers and surroundi	ng land use.
max 14 pts. subtotal	MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land use VERY LOW. 2nd growth o LOW. Old field (>10 years MODERATELY HIGH. Re	m (164ft) or more around wetland pe 25m to <50m (82 to <164ft) around e 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) d perimeter (0) d perimeter (7) d perimeter (5) d perimeter (8) d perimeter (9) d perimeter (9) d perimeter (1) d pe
22 29	Metric 3. Hydrology		
max 30 pts. subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surfa Perennial surface water (la 3c. Maximum water depth. Select or >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1) 3e. Modifications to natural hydrolog	ce water (3) ke or stream) (5) lly one and assign score.	Connectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Duration inundation/saturation. Score one or dbl check Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) k and average.
	None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (nonstormwater) filling/grading road bed/RR track highway dredging other
13 42	Metric 4. Habitat Al	teration and Develo	pment.
max 20 pts. subtotal	4a. Substrate disturbance. Score on None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	e or double check and average.	
	4b. Habitat development. Select online Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	one and assign score.	
	Poor (1) 4c. Habitat alteration. Score one or		
	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting	shrub/sapling removal herbaceous/aquatic bed removal sedimentation
42		woody debris removal toxic pollutants	dredging farming nutrient enrichment
subtotal this parameter is a subtotal thin pa			

Site:	HOUVEL	Ille Windsor	Rater(s):	K(D)P	Date: 423/20
Su	42 obtotal first pa	lige		Wasle	
0	42	Metric 5. Special	Wetlands.		
max 10 pts.	subtotal	Check all that apply and score as Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tribut Lake Plain Sand Prairie Relict Wet Prairies (10) Known occurrence state Significant migratory so Category 1 Wetland. S	d (5) ary wetland-unrestricted ary wetland-restricted h es (Oak Openings) (10) e/federal threatened or a engbird/water fowl habita	ydrology (5) endangered species (10) at or usage (10)	
4	46	Metric 6. Plant co			nicrotopography.
nax 20 pts.	subtotal	6a. Wetland Vegetation Commun		ion Community Cover Scal	e
		Score all present using 0 to 3 sca Aquatic bed Emergent	0 1	Present and either cor	0.1ha (0.2471 acres) contiguous area nprises small part of wetland's moderate quality, or comprises a
		Shrub Forest Mudflats Open water	2	vegetation and is of	nprises significant part of wetland's moderate quality or comprises a sma
		Other 6b. horizontal (plan view) Interspondent Select only one.	ersion.	part and is of high queen Present and comprises vegetation and is of	s significant part, or more, of wetland'
		High (5)	Narrativ	e Description of Vegetation	Quality
		Moderately high(4) Moderate (3)	low		or predominance of nonnative or
		Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. to Table 1 ORAM long form for lis		although nonnative a can also be present,	ant component of the vegetation, and/or disturbance tolerant native spp and species diversity moderate to generally w/o presence of rare
		or deduct points for coverage Extensive >75% cover Moderate 25-75% cover Sparse 5-25% cover (-1	high (-5) r (-3)	A predominance of nat and/or disturbance to absent, and high spp	bive species, with nonnative spp olerant native spp absent or virtually o diversity and often, but not always, threatened, or endangered spp
		Nearly absent <5% cov Absent (1)	Mudflat	and Open Water Class Qua	
		6d. Microtopography. Score all present using 0 to 3 scal	0	Absent <0.1ha (0.247	
		Vegetated hummucks/ti	PROPERTY AND ADMINISTRATION OF THE PROPERTY AND ADM	Low 0.1 to <1ha (0.24) Moderate 1 to <4ha (2	
		Coarse woody debris >	15cm (6in) 3	High 4ha (9.88 acres)	· · · · · · · · · · · · · · · · · · ·
		Standing dead >25cm (Amphibian breeding po	A CONTRACTOR OF THE PROPERTY O	pography Cover Scale	
			0	Absent	
			1	Present very small am of marginal quality	ounts or if more common
			2		mounts, but not of highest nounts of highest quality
			3	Present in moderate or and of highest quality	The southern the chest of the south

Site: +	msuille Windson Rater(s): JJP	Date: 4-20.00 LC
	Metric 1. Wetland Area (size).	
max 6 pts. subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts)	FO-CATMOD2
	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	
12 13	Metric 2. Upland buffers and surrounding land	d use.
max 14 pts, subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter. (82 to <164ft) around wetland perimeter. (93 to <82ft) around wetland perimeter. (93 to <83 to <83 to <83 to <83 to <83 to <84 to <	neter (4) rimeter (1) 0) (7) e, new fallow field. (3)
16 79	Metric 3. Hydrology.	
max 30 pts. subtotal	High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) 100 ye Betwee Part of	Score all that apply. For all
	3e. Modifications to natural hydrologic regime. Score one or double check and average	nally saturated in upper 30cm (12in) (1)
	Recovering (3) Recent or no recovery (1) Recovering (3) Itile Rilling/g road be weir stormwater input Itile Recovering (3) Itile Recovering (4) Itile Recover	ed/RR track ng
7 36	Metric 4. Habitat Alteration and Development.	4
max 20 pts. subtotal	4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	
	4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	
ŷ.	4c. Habitat alteration. Score one or double check and average.	
36 subtotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (3	ng 📗
PARTICAISER I LEDING	ny 2001 jini	

Site:	Tito	nsuille Windson Rater	(s): 11	P Date: 4-22-207
Su	36 obtotal first pa	Metric 5. Special Wetlan	ds.	W007-PFO-CATMOD2
max 10 pts.	subtotal	Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-re Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	estricted hydrol ings) (10) atened or enda fowl habitat or 1 Qualitative Ra	ngered species (10) usage (10) ating (-10)
7 max 20 pts.	43			erspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises small part of wetland's
		Emergent		vegetation and is of moderate quality, or comprises a
		Shrub	-	significant part but is of low quality
		2 Forest	2	Present and either comprises significant part of wetland's
		Mudflats		vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality
		Select only one.		
		High (5)	Narrative De	scription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)		disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		Low (1)		although nonnative and/or disturbance tolerant native spp
		None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp
		or deduct points for coverage	high	A predominance of native species, with nonnative spp
		Extensive >75% cover (-5)	· ing··	and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
			-	the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0) Absent (1)	Mudflet and	Open Water Class Quality
				Open Water Class Quality
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopoar	aphy Cover Scale
			0	Absent
			1	Present very small amounts or if more common of marginal quality
		25	2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
			3	Present in moderate or greater amounts
			3	and of highest quality
11/1				and of riightout quality

43

Site: 7, 1+sc	muille - Windson Rater(s): 1) P	Date: 4-22-207
3 3	Metric 1. Wetland Area (size).	
max 6 pts. subtotal	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	
3 6	Metric 2. Upland buffers and surrounding land use.	
max 14 pts. subtotal	 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallowed the first open pasture, row cropping, mining, construction. (1) 	ow field. (3)
17 23	Metric 3. Hydrology.	
max 30 pts. subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) Part of wetland/up Part of vetland/up Part of wetland/up Part of vetland/up Part of wetland/up Part of vetland/up Part of	in (1) lake and other human use (1) pland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3)
	None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) Check all disturbances observed ditch point source (non-filling/grading filling/grading road bed/RR track dredging other	
12 35	Metric 4. Habitat Alteration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	
	4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	
	4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Check all disturbances observed	
35 subtotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1)	tic bed removal
last revised 1 Februar	ry zuun jim	

ORAM vi 5.0 Scoring Forms Page 7 of 10

Site: 1	ilten	suilly - Windson Rate	r(s):	JJP	Date: 4-22-207
SI	35 abtotal first pa	Metric 5. Special Wetla	nds.	W008-PEM-C	CATMOD2
max 10 pts.	subtotal	Check all that apply and score as indicated.			
		Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland Lake Erie coastal/tributary wetland Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal the Significant migratory songbird/wate Category 1 Wetland. See Questio	restricted hydr enings) (10) reatened or end er fowl habitat on n 1 Qualitative	dangered species (10) or usage (10) Rating (-10)	
2	37	Metric 6. Plant commun	nities, in	terspersion, r	nicrotopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	n Community Cover Sca	ale
		Score all present using 0 to 3 scale.	0	Absent or comprises	<0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1		emprises small part of wetland's
		Emergent			f moderate quality, or comprises a
		Shrub		significant part but i	
		Forest	2		mprises significant part of wetland's
		Mudflats		2007 50	f moderate quality or comprises a small
		Open water		part and is of high o	
		Other	3	The state of the s	es significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.	-	vegetation and is of	nigh quality
		Select only one.	Massativa	Danaulusiau as Vauatatia	on Overlier
		High (5)		Description of Vegetation	
		Moderately high(4) Moderate (3)	low	disturbance tolerant	l/or predominance of nonnative or
		Moderately low (2)	mod		ant component of the vegetation,
		Low (1)	mod		and/or disturbance tolerant native spp
		None (0)			t, and species diversity moderate to
		6c. Coverage of invasive plants. Refer			it generally w/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endar	
		or deduct points for coverage	high		ative species, with nonnative spp
		Extensive >75% cover (-5)	5	1	tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)			p diversity and often, but not always,
		Sparse 5-25% cover (-1)		Laboratoria de la companyo de la com	e, threatened, or endangered spp
		Nearly absent <5% cover (0)			
		Absent (1)	Mudflat an	d Open Water Class Qu	ality
		6d. Microtopography.	0	Absent < 0.1ha (0.247	7 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.24	
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha ((2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres)	or more
		Standing dead >25cm (10in) dbh	22400 127		
		Amphibian breeding pools	Microtopo	graphy Cover Scale	
			0	Absent	
			1	of marginal quality	nounts or if more common
			2		amounts, but not of highest mounts of highest quality
			3	Present in moderate of	
2-				and of highest quali	
< _/_					

APPENDIX E Agency Coordination



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 ≥ 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 ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are

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

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

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). 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.

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

Sincerely,

Patrice M. Ashfield Field Office Supervisor

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



August 3, 2020 Project C170352.92

Ms. Patrice M. Ashfield United States Fish and Wildlife Service Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, Ohio 43230

American Electric Power
Tiltonsville – Windsor 138 kV Ratings Increase Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jefferson County, Ohio

Dear Ms. Ashfield:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Tiltonsville – Windsor 138 Kilovolt (kV) Ratings Increase Project (Project) in Jefferson County, Ohio. As part of this request, please also provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests known in the area.

The Tiltonsville-Windsor 138 kV line 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.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists mainly of maintained transmission line right-of-way across forested area and open agricultural field. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 234.203.0772 or via email at k.vonderwish@gaiconsultants.com if you have any questions or require further information.

Sincerely,

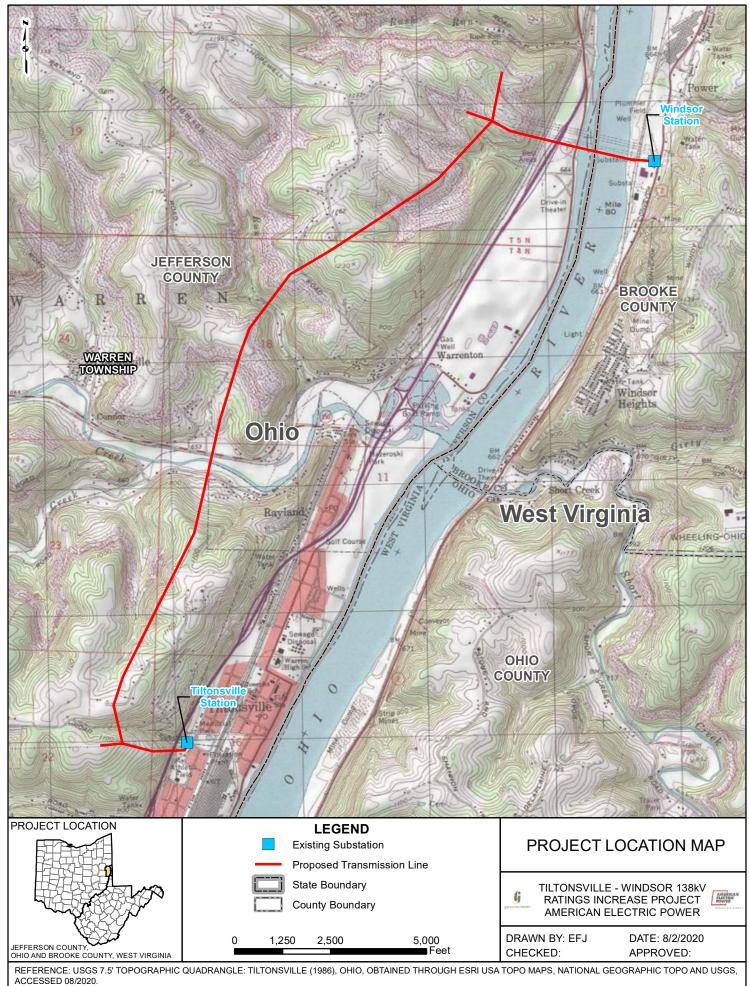
GAI Consultants, Inc.

Kristen L. Vonderwish Project Environmental Specialist

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



ACCESSED 08/2020.



August 3, 2020 Project C170352.92

Environmental Review Staff
Ohio Department of Natural Resources
Division of Wildlife - Ohio Natural Heritage Program
2045 Morse Road, Building G-3
Columbus, Ohio 43229-6693

American Electric Power Tiltonsville - Windsor 138 kV Ratings Increase Project Request for Technical Assistance Regarding Threatened and Endangered Species and Critical Habitat Jefferson County, Ohio

Dear Staff:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Tiltonsville – Windsor 138 Kilovolt (kV) Ratings Increase Project (Project) in Jefferson County, Ohio. As part of this request, please also provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests known in the area.

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Sincerely,

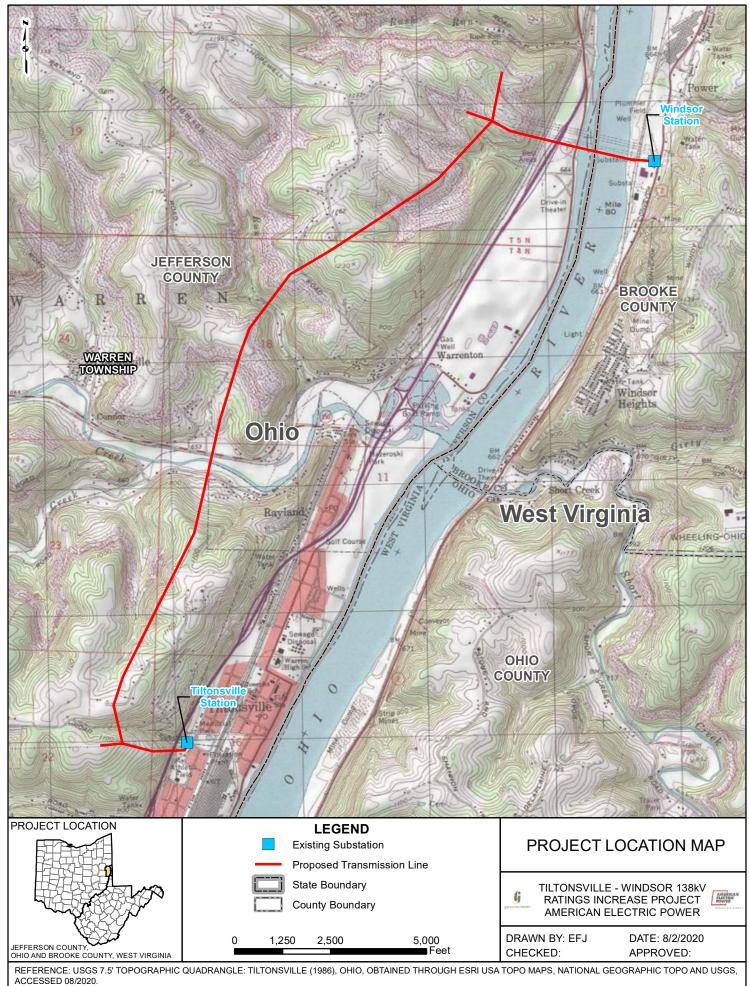
GAI Consultants, Inc.

Kristen L. Vonderwish Project Environmental Specialist

Attachments: Attachment 1 (Project Location Map)

Project Shapefiles

ATTACHMENT 1 PROJECT LOCATION MAP



ACCESSED 08/2020.

IPaC

U.S. Fish & Wildlife Service

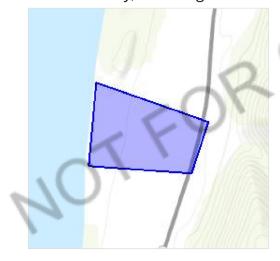
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Brooke County, West Virginia



Local office

West Virginia Ecological Services Field Office

\((304) 636-6586

(304) 636-7824

90 Vance Drive Elkins, WV 26241-9475

http://www.fws.gov/westvirginiafieldoffice/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the <u>Ecological Services Program</u> of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

- 1. Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information.
- 2. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME STATUS

IPaC: Explore Location

8/19/2020

Indiana Bat Myotis sodalis

This species only needs to be considered if the following condition applies:

 All activities in this location should consider potential effects to this species. This project is not within a known-use area, but potentially occupied habitat may exist. Please contact the WVFO for additional consultation.

There is **final** critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/5949

Northern Long-eared Bat Myotis septentrionalis

This species only needs to be considered if the following condition applies:

 No known hibernacula or maternity roost trees occur within the action area. Any 'take' that may occur incidental to this project is not prohibited under the final 4(d) rule. Please submit a Streamlined 4(d) Rule Consultation form to the WVFO.

No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045

Endangered

Threatened

Flowering Plants

NAME STATUS

Running Buffalo Clover Trifolium stoloniferum

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/2529

Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act^{1} and the Bald and Golden Eagle Protection Act^{2} .

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds
 http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge Network</u> (<u>AKN</u>). The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to

confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION

Wetlands in the National Wetlands Inventory

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of Engineers District</u>.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the <u>NWI map</u> to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



December 4, 2020 Project C170352.92

Ms. Amy Toohey Environmental Specialist-Principal American Electric Power Company 8600 Smiths Mill Road New Albany, Ohio 43054

Wetland Delineation and Stream Identification Addendum No. 1 Letter Report Tiltonsville – Windsor 138 kV Ratings Increase Project Jefferson County, Ohio and Brook County, West Virginia

Dear Ms. Toohey:

In April of 2020, and November 2020, GAI Consultants, Inc. (GAI) conducted a wetland and stream study on behalf of American Electric Power (AEP) for the Tiltonsville – Windsor 138 kV Ratings Increase Project (Project) in Jefferson County, Ohio and Brook County, West Virginia. A Wetland Delineation and Stream Identification Report (WDSIR) was provided to AEP in September of 2020. The WDSIR included the methods and results of the field study.

Subsequent design changes to the Project resulted in an expansion of the study area. A supplemental wetland and stream study was conducted on the expanded study area on November 20 and 24, 2020. One ephemeral stream, one PEM wetland and two PFO wetlands were identified within the expanded study area shown on Sheets 3 through 9 (Attachment 1, Figures 2 and 3).

Mapping depicting the newly studied areas and delineated features is included as Attachment 1. Data collected on the newly identified stream and wetlands are included in Attachment 2 and 3 (Tables 1 and 2). Photographs are included in Attachment 4. The United States Army Corps of Engineers (USACE) Wetland Determination Data Forms documenting the wetland area and corresponding upland area are provided in Attachment 5. HHEI and ORAM Data Forms are provided in Attachments 6 and 7.

We appreciate working with you on this Project. If you have any questions or need additional information, please contact me at 330.323.1894 or J.Noble@gaiconsultants.com.

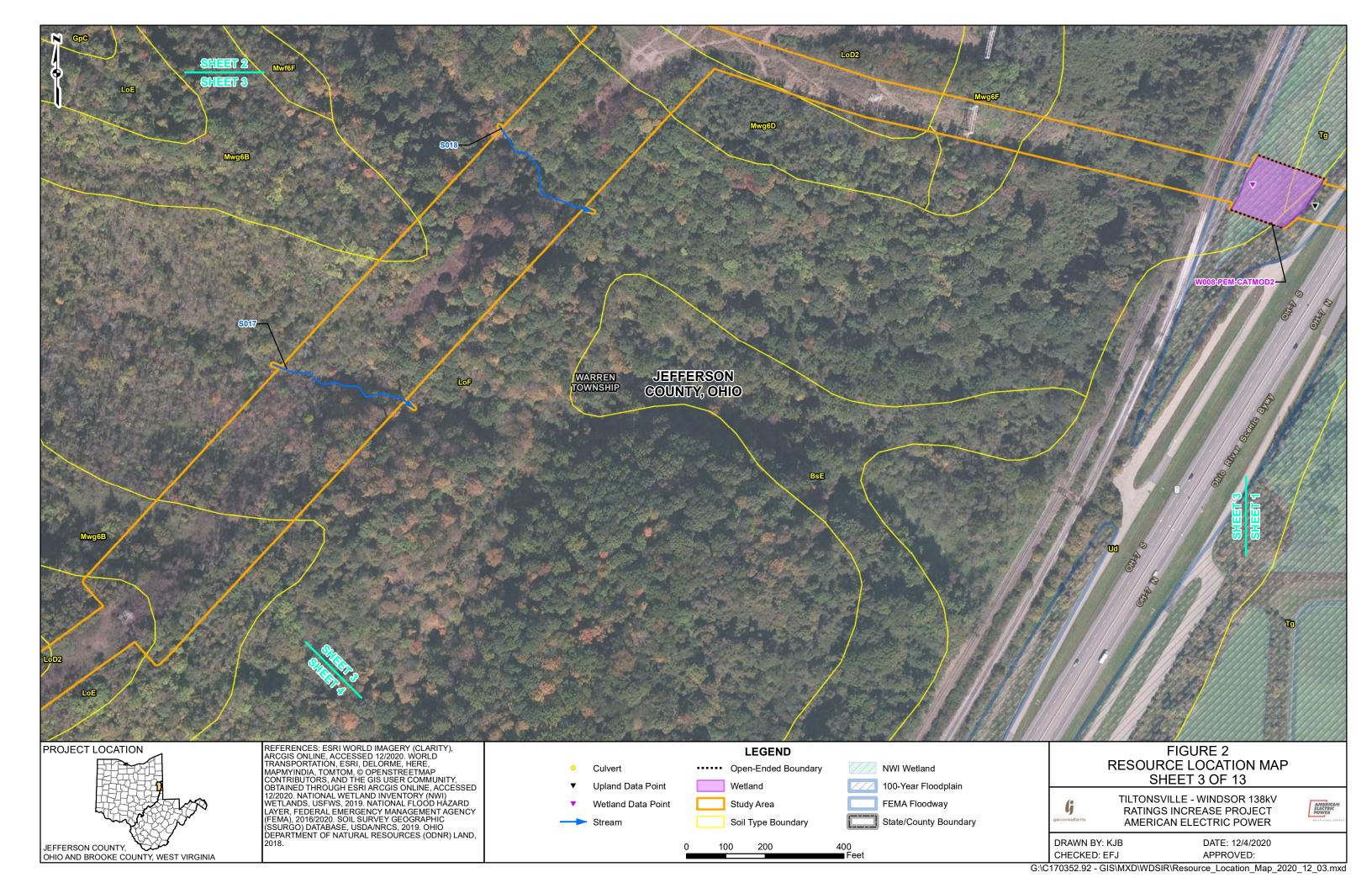
Sincerely,

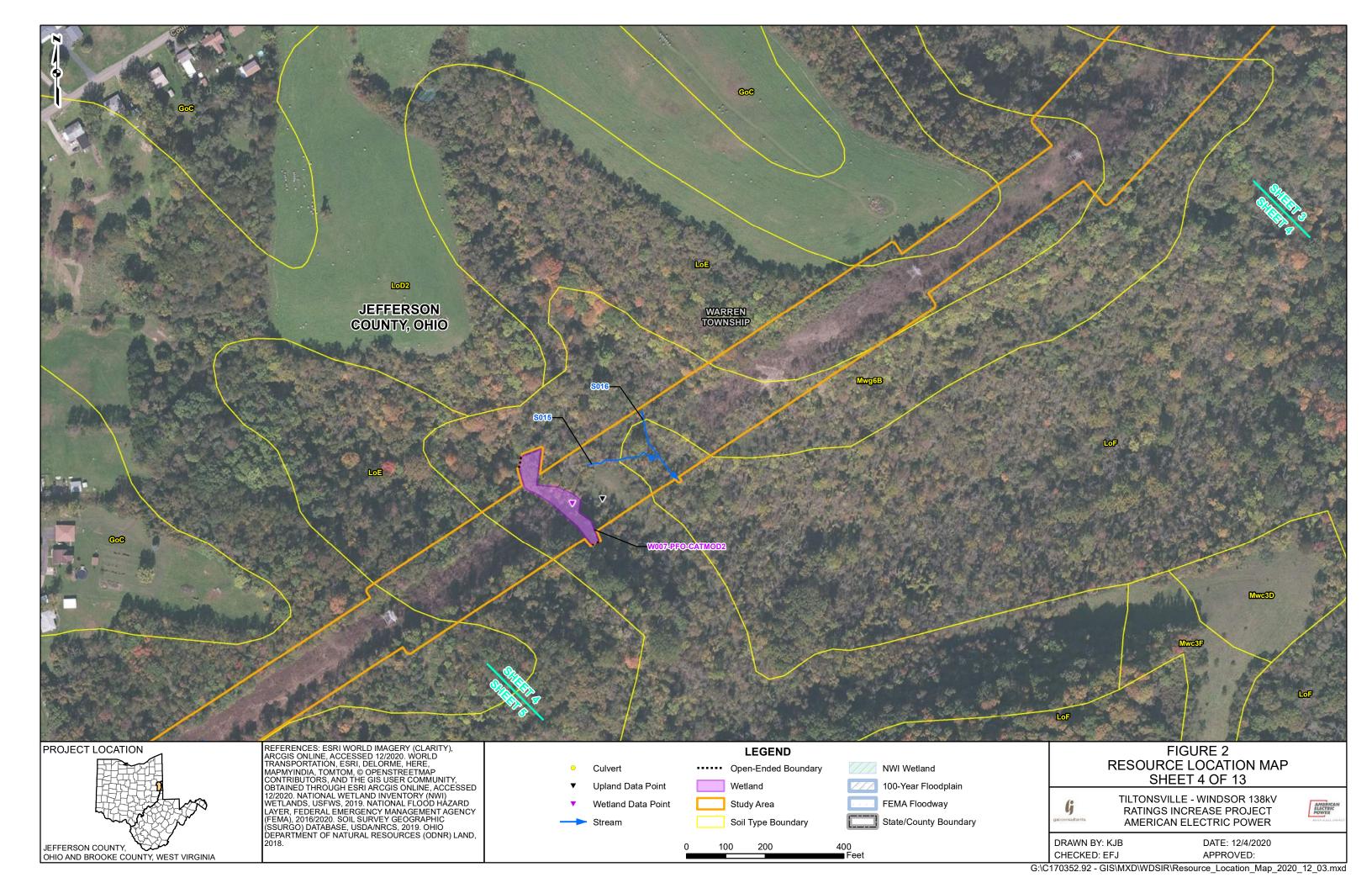
GAI Consultants, Inc.

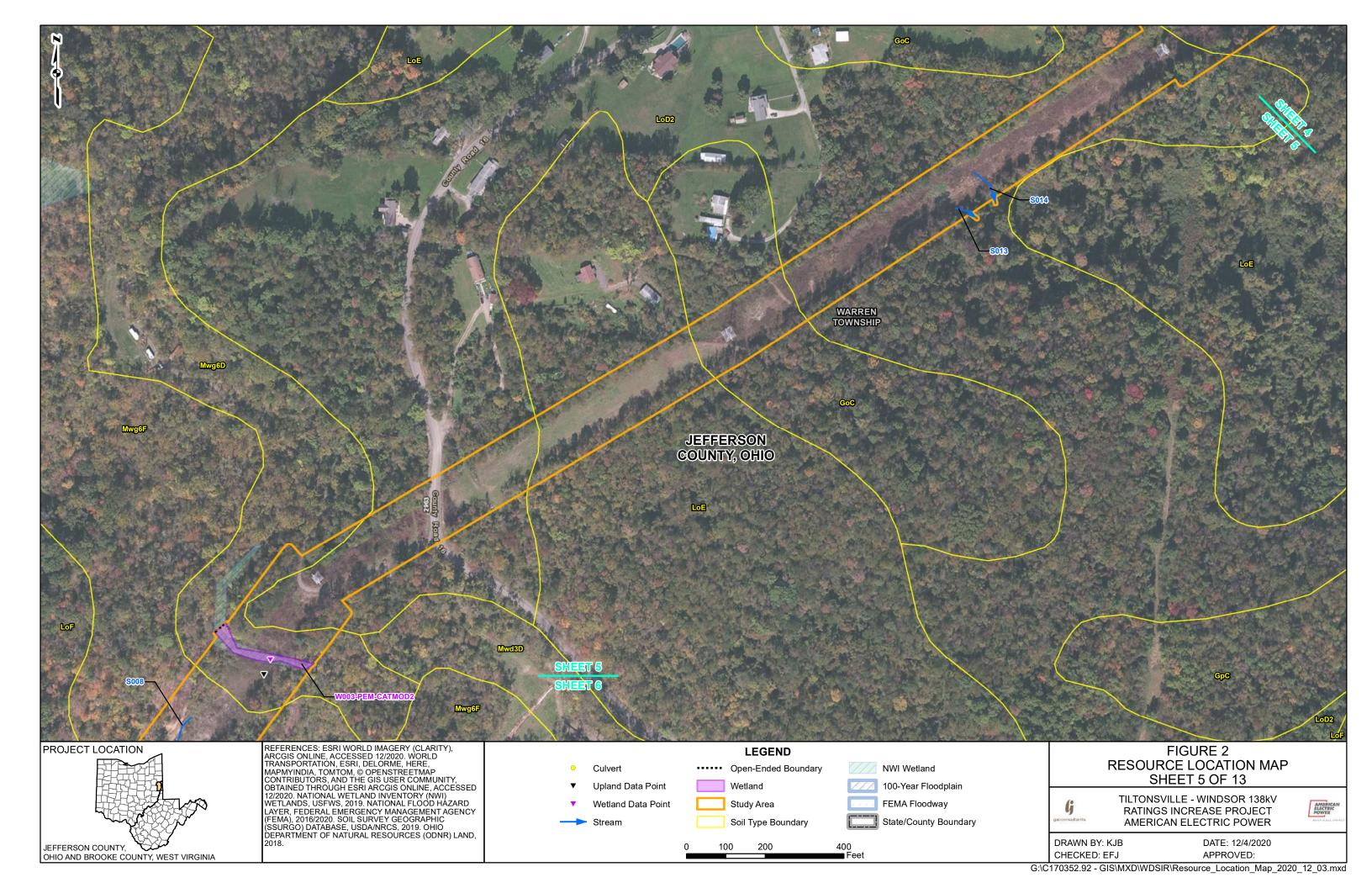
Joshua J. Noble Senior Environmental Manager

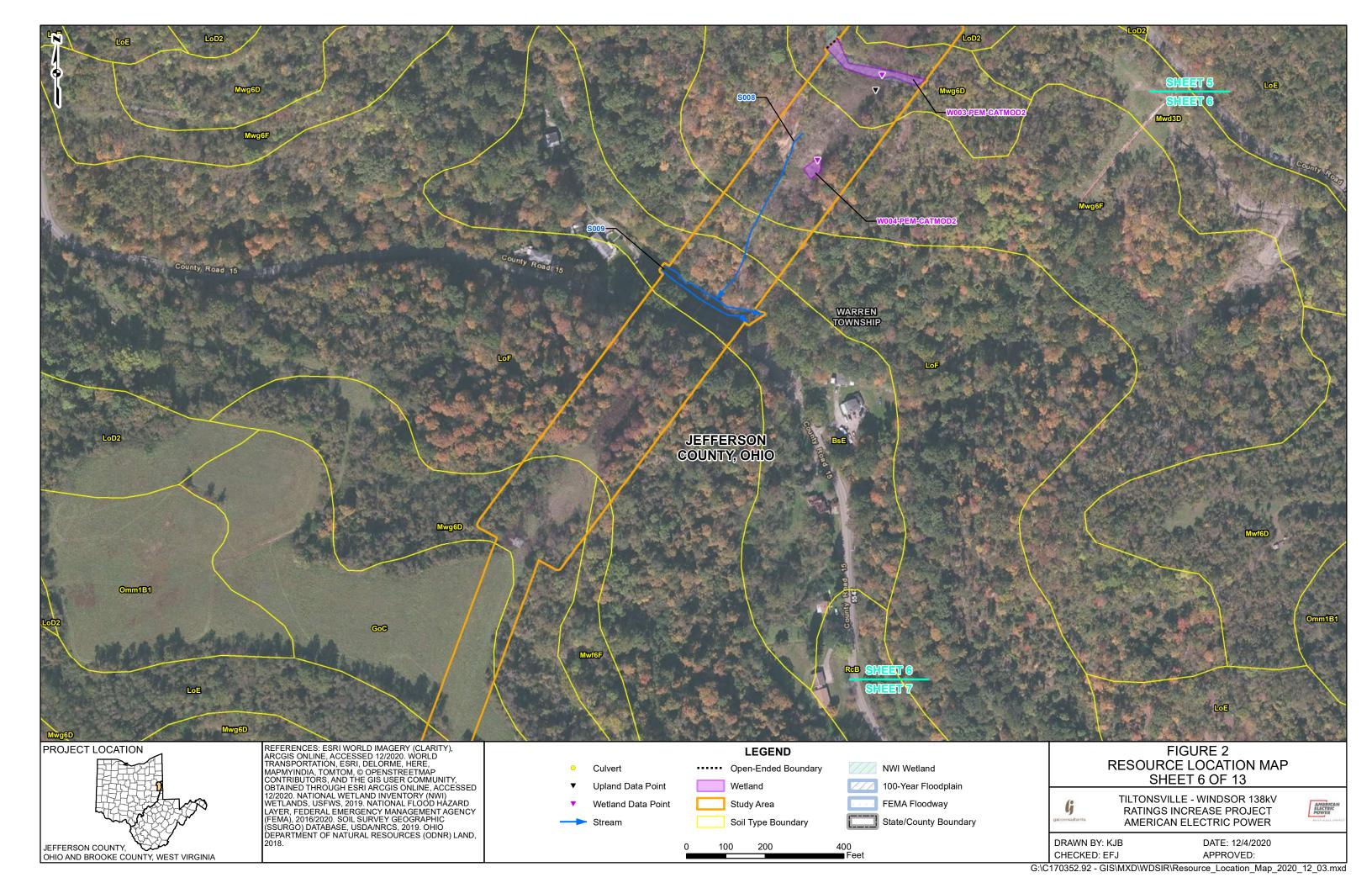
Attachments: Attachment 1 (Project Mapping)

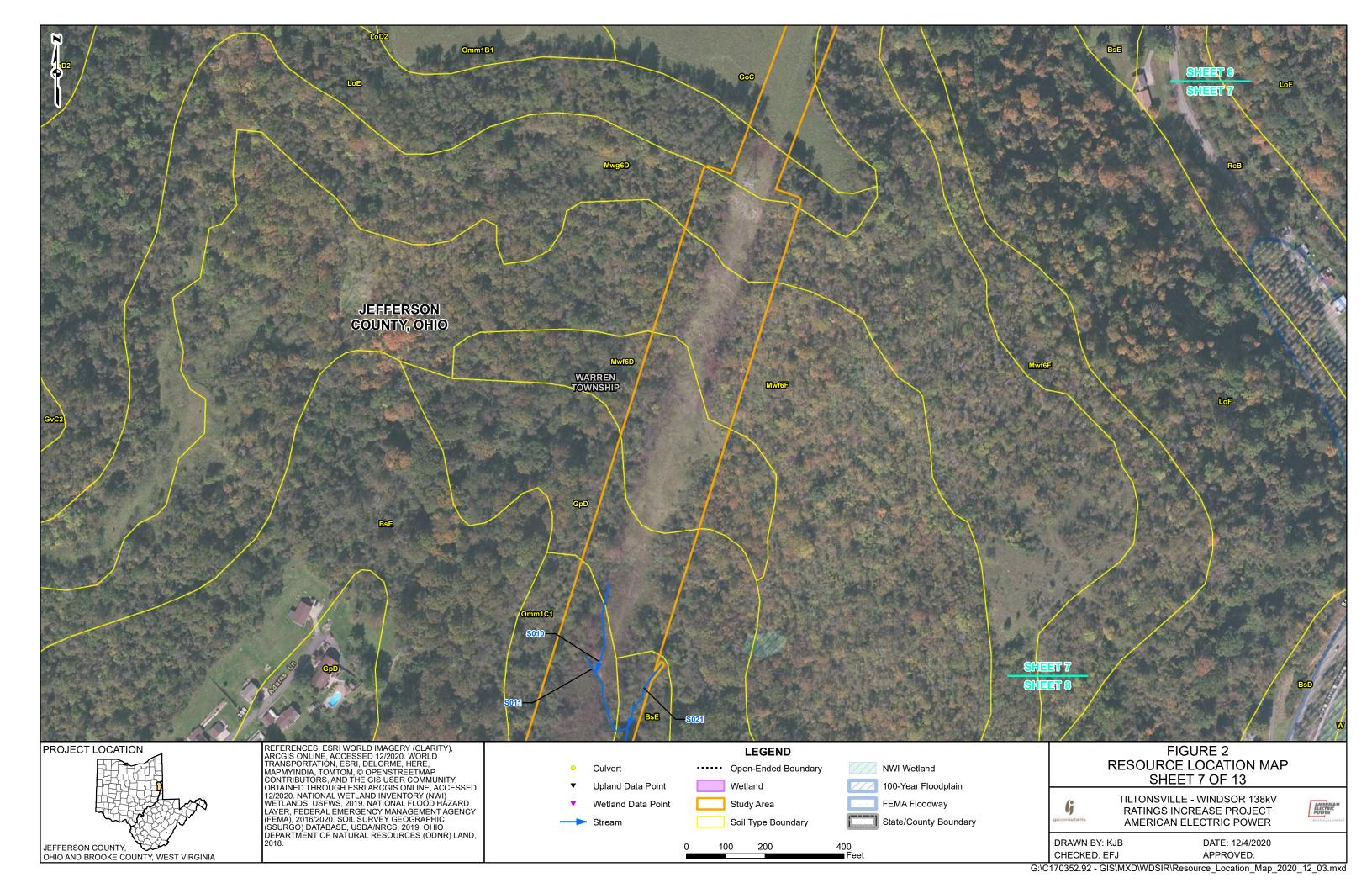
ATTACHMENT 1 PROJECT MAPPING

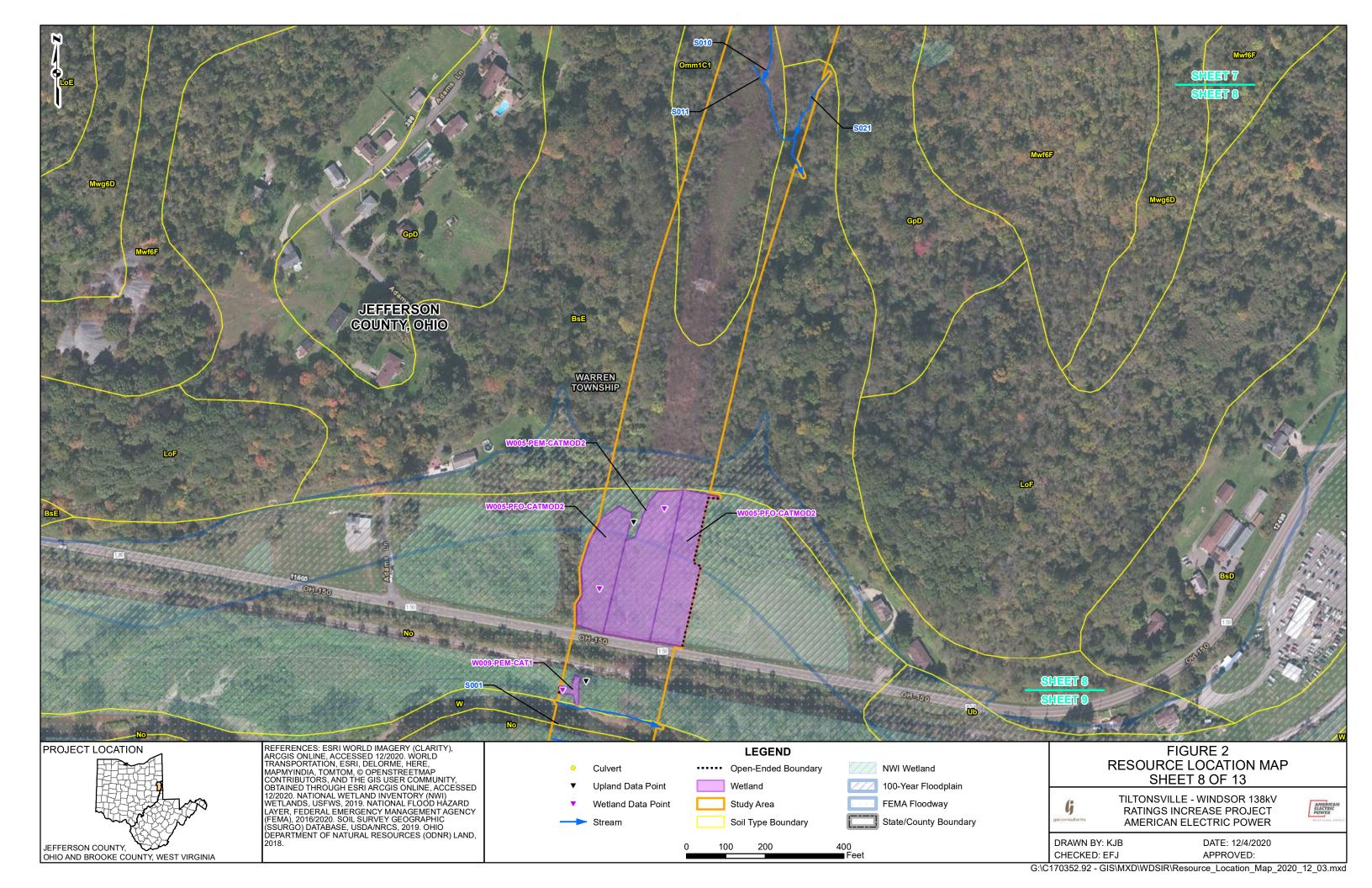


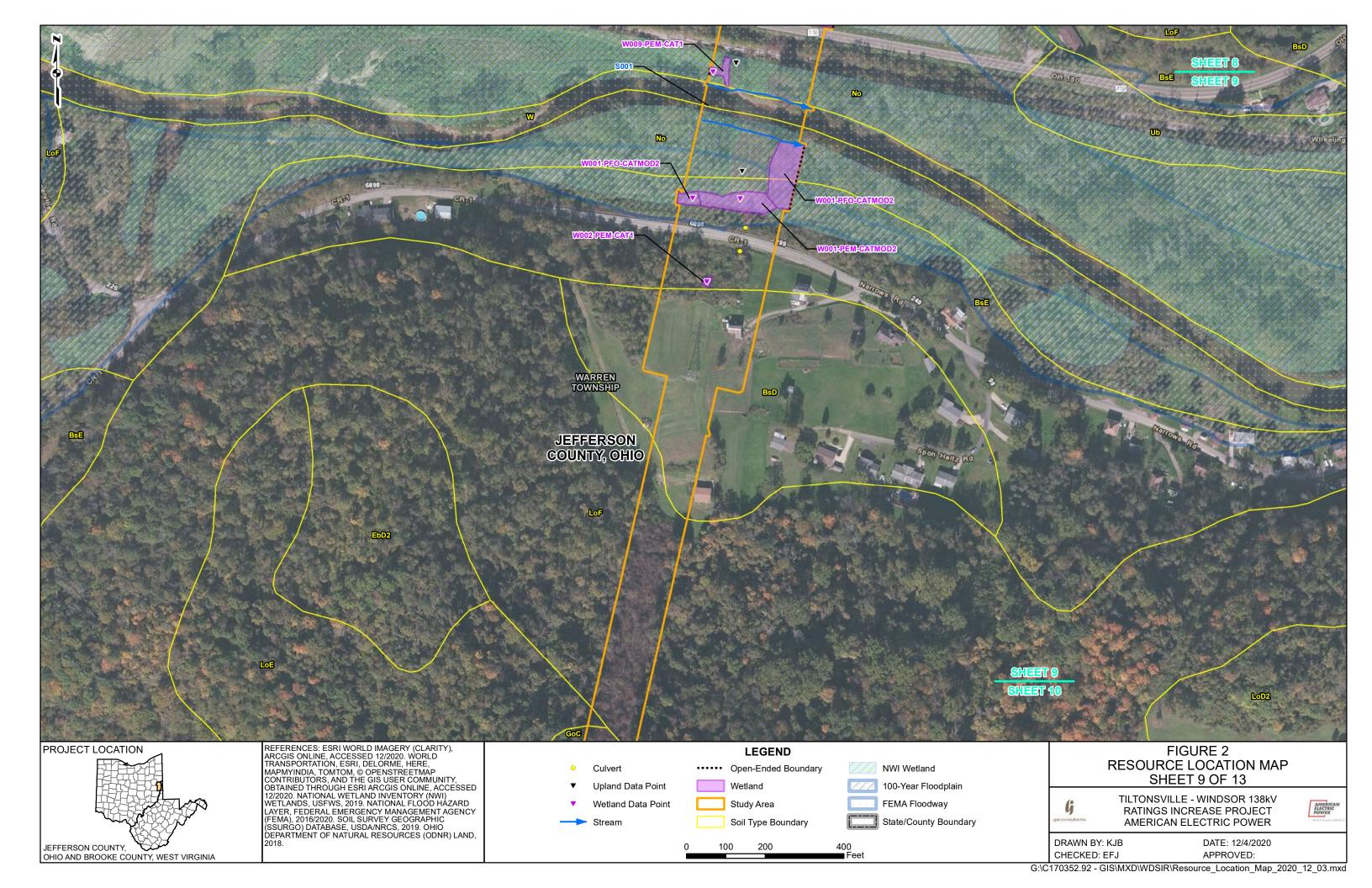


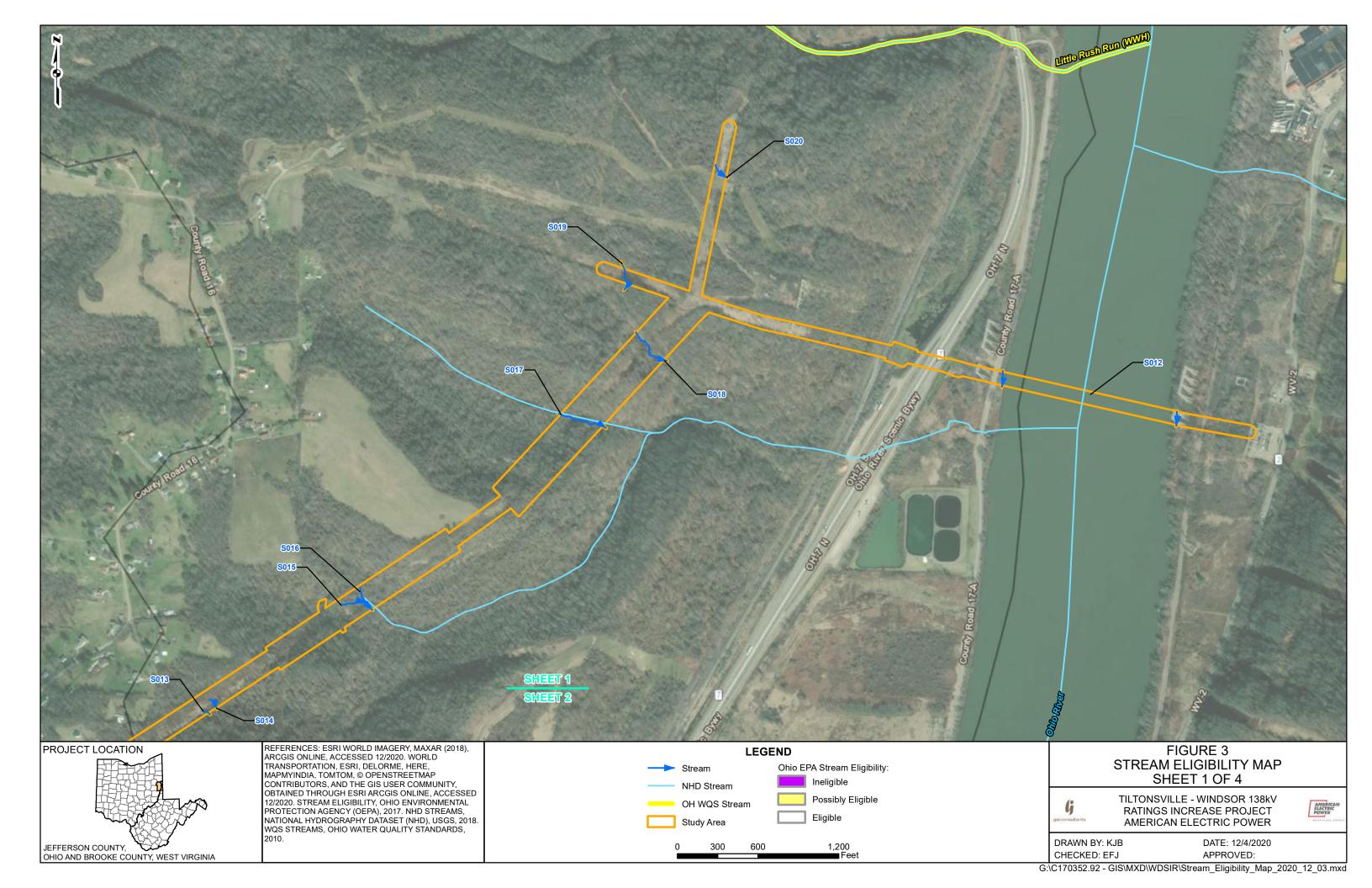


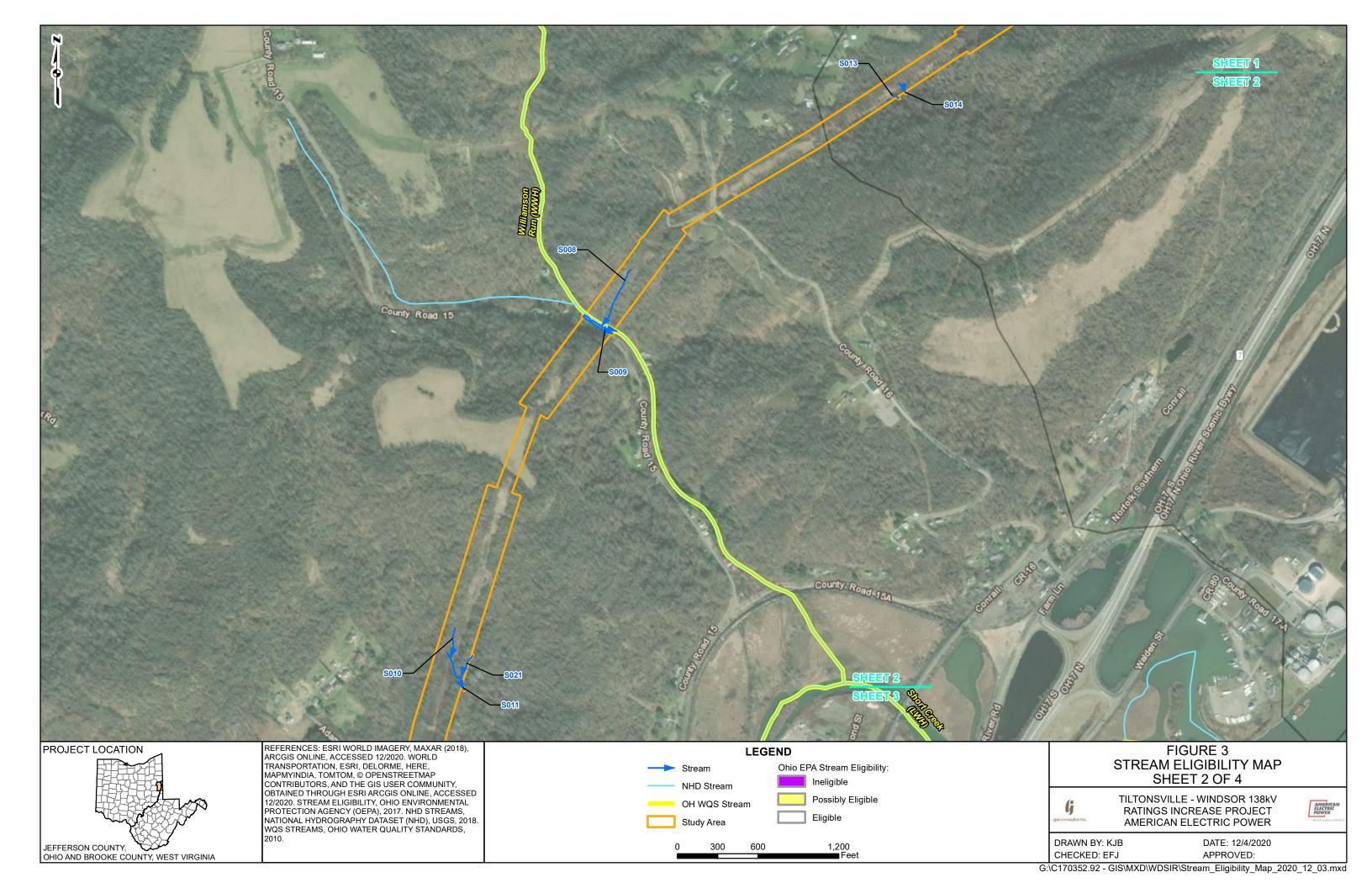


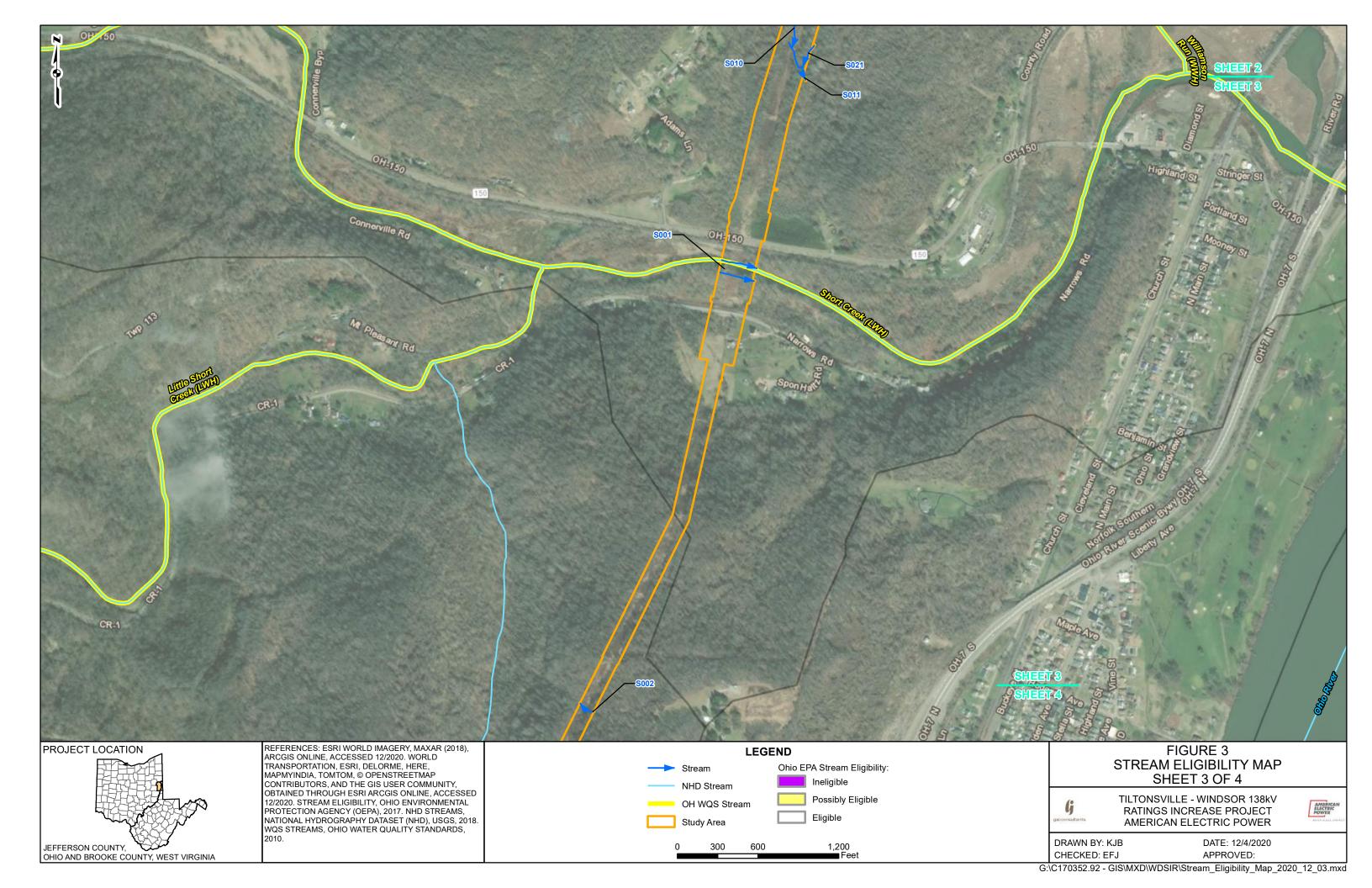












ATTACHMENT 2

TABLE 1

TABLE 1
WETLANDS IDENTIFIED OF EXTENDED WITHIN THE EXPANDED STUDY AREA

	Loc	ation				C	RAM	Nearest	Existing			Propose	d Impacts
Wetland ID	Latitude	Longitude	Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Structure # (Existing / Proposed)	Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Temporary Matting Area (acre)	Permanent Impact Area (acre)
W001-PEM-CATMOD2	40.185101	-80.70272	No	PEM	0.183	40	Modified 2	Modified 2 9 / 9	N/A	N/A	N/A	0	0
W001-PFO-CATMOD2	40.185132	-80.703151	No	PFO	0.292	40	Modified 2		N/A	N/A	N/A	0	0
W003-PEM-CATMOD2	40.198502	-80.69536	No	PEM	0.125	43	Modified 2	5/5	N/A	N/A	N/A	0	0
W005-PEM-CATMOD2	40.186837	-80.702182	No	PEM	0.929	39.5	Modified 2	0./0	N/A	N/A	N/A	0	0
W005-PFO-CATMOD2	40.18671	-80.702587	No	PFO	1.272	39.5	Modified 2	dified 2 8 / 8	N/A	N/A	N/A	0	0
W007-PFO-CATMOD2	40.20335	-80.68541	No	PFO	0.274	43	Modified 2	3/3	N/A	N/A	N/A	0	0
W009-PEM-CAT1	40.186008	-80.702941	No	PEM	0.038	25	1	9/9	N/A	N/A	N/A	0	0
				Total:	3.113							0	0

ATTACHMENT 3

TABLE 2

TABLE 2
STREAMS IDENTIFIED OF EXTENDED WITHIN THE EXPANDED STUDY AREA

	Loca	ation							Field Ev	<i>y</i> aluation			Propose	d Impacts
Stream ID	Latitude	Longitude	Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Method	Score	Category / Rating / OAC Designation	Ohio EPA 401 Eligibility	Stream Crossing?	Fill Type	Length (LF)
S001	40.185587	-80.702601	Perennial	Short Creek	277	80	75	Chapter 3745-1-13	N/A	wwh	Eligible	N/A	N/A	0
S009	40.196914	-80.696903	Perennial	Williamson Run	288	18	17.5	Chapter 3745-1-13	N/A	wwh	Eligible	N/A	N/A	0
S011	40.190124	-80.700943	Intermittent	UNT to Short Creek	346	4	3.5	HHEI	40	Modified Small Drainage Warmwater Stream	Eligible	N/A	N/A	0
S013	40.201511	-80.688893	Intermittent	UNT to Ohio River	62	4	1.5	HHEI	46	Modified Small Drainage Warmwater Stream	Eligible	N/A	N/A	0
S014	40.201708	-80.688677	Ephemeral	UNT to Ohio River	100	3	2	HHEI	19	Modified Ephemeral Stream	Eligible	N/A	N/A	0
S016	40.203724	-80.684603	Perennial	UNT to Ohio River	207	8	7	HHEI	72	Modified Small Drainage Warmwater Stream	Eligible	N/A	N/A	0
S017	40.207291	-80.678709	Perennial	UNT to Ohio River	402	10	6	HHEI	77	Modified Small Drainage Warmwater Stream	Eligible	N/A	N/A	0
S018	40.208743	-80.676881	Perennial	UNT to Ohio River	361	10	8	HHEI	83	Modified Small Drainage Warmwater Stream	Eligible	N/A	N/A	0
S021	40.190063	-80.70058	Ephemeral	UNT to Short Creek	190	3	2	HHEI	21	Ephemeral Stream	Eligible	N/A	N/A	0
				Total:	2233									0

ATTACHMENT 4

PHOTOGRAPHS



Photograph 1. Wetland W001-PFO-CATMOD2, Facing West



Photograph 2. Wetland W001-PFO-CATMOD2, Facing South



Photograph 3. Wetland W005-PFO-CATMOD2, Facing East



Photograph 4. Wetland W005-PFO-CATMOD2, Facing North



Photograph 5. Wetland W009-PEM-CAT1, Facing West



Photograph 6. Wetland W009-PEM-CAT1, Facing East



Photograph 7. Stream S021, Upstream, Facing North



Photograph 8. Stream S021, Downstream, Facing South

ATTACHMENT 5 WETLAND DETERMINATION DATA FORMS

and the second s	- Eastern Mountains and Pledmont Region
Project/Site: THORSAIL WINDSON City/O	County: LFECS(M CO . Sampling Date: 1 20 20
Applicant/Owner:	State: OH Sampling Point: Wellano
Investigator(s): Section Secti	on, Township, Range:
Landform (hillslope, terrace, etc.): Depal SSUM Local rel	ief (concave, convex, none): CONCOVC Slope (%): 0 /
Subregion (LRR or MLRA): LRR V Lat: 40.185132	Long: -80.703151 Datum: NAD83
0 - 0 1 - 1 6 1 0	aum 25-401. Slaphini classification: PFOIA
Are climatic / hydrologic conditions on the site typical for this time of year? Y	
Are Vegetation \underline{NO} , Soil \underline{NO} , or Hydrology \underline{NO} significantly distur	/
Are Vegetation $\underline{n_0}$, Soil $\underline{n_0}$, or Hydrology $\underline{n_0}$ naturally problems	
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area
Hydric Soil Present? Yes No	within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks: Wetland data for W001-PFO-0	CATMOD2 (PFO)
Metianol viala isi	Crio),
Data taken with in PFOIA NI	NI.
Dala lacks to the	` '
HYDROLOGY	β
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (
High Water Table (A2) Hydrogen Sulfide Od	
	es on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced	
Sediment Deposits (B2) Recent Iron Reduction	
Drift Deposits (B3) Thin Muck Surface (0	
Algal Mat or Crust (B4) Other (Explain in Rer	marks) 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)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	vious inspections), if available:
Remarks:	2 52 55
Hydrology Indicators are C	3,04,00.
	*

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

Sampling Point: Welland

2010	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	% Cover	Species?	Status	Number of Dominant Species
1. Platanus occidentalis	<u>50</u>		talle	That Are OBL, FACW, or FAC: (A)
2. Olmus americana	20	4	Fach	
3. Acer negundo	10	N	Fac	Total Number of Dominant Species Across All Strata: (B)
3. Tech headerthan			1140	Species Across All Strata: (B)
4	-			Percent of Dominant Species
5	-			That Are OBL, FACW, or FAC:(A/B)
6				
7.				Prevalence Index worksheet:
	20	= Total Cov		Total % Cover of: Multiply by:
EON of total cours		total cover:		OBL species x 1 =
50% of total cover:	20% 01	total cover.		FACW species x 2 =
Sapling/Shrub Stratum (Plot size: \5'\)	10	,		
1. Ulmus americand	. <u>10 </u>	4	tach	FAC species x 3 =
2	8			FACU species x 4 =
3				UPL species x 5 =
UT				Column Totals: (A) (B)
4				(-)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7			17	
8		-	-	1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
9	10			3 - Prevalence Index is ≤3.01
		= Total Cov		4 - Morphological Adaptations ¹ (Provide supporting
, 50% of total cover:	20% of	total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size:)				
1. Pholarts anundinaced	20	V	tach	Problematic Hydrophytic Vegetation ¹ (Explain)
2. I vsimachia hummularia	115	VI	Fach	/
2. Charles the Living to the	1	_	· OLOV	¹ Indicators of hydric soil and wetland hydrology must
3			$\overline{}$	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				_
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of
				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9,				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11	_			Mont. All books conversed to a locate we condition
	25	= Total Cove	-	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total accord	200/ -5	total covi	er	of size, and woody plants less than 5.20 it tall.
50% of total cover:	20% or	total cover:		Woody vine - All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:)				height.
1. none				
2				
3.		9 3		
<u> </u>				
4				Hydrophytic
5	_			Vegetation Present? Yes No
		= Total Cove		Present? Yes No
50% of total cover:	20% of	total cover:		
Remarks: (Include photo numbers here or on a separate s	sheet.)			
	•			
Wetland veg is present				
			3	.,

Sampling Point: Wettand

	cription: (Describe	to the dept				or confirm	n the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Feature:	Type	Loc ²	Texture	Remarks		
0-16	10 N/2 1-12	85	75/12 4/10	13	C	PI	C		rtomants	
010	MULTIP	00	MEULEN	1		10	<u> </u>			
	- 9									
								07/		
-		102								
		-								
-	-									
					-	-				
							-			
-							-	-		
-					-	, , , , , , , , , , , , , , , , , , , 	+	×.		
	Concentration, D=Dep	letion, RM=	Reduced Matrix, MS	=Masked	Sand Gr	ains.			ng, M=Matrix.	
-	Indicators:								roblematic Hy	
Histoso	` '		Dark Surface						A10) (MLRA 14	47)
	pipedon (A2)		Polyvalue Bel				148) (Redox (A16)	
	listic (A3)		Thin Dark Sur			147, 148)		MLRA 14	7, 1 48) oodplain Soils (E10)
	en Sulfide (A4) d Layers (A5)		Loamy Gleyer Depleted Mat		F2)		— '	MLRA 13)		r 19)
	uck (A10) (LRR N)		Redox Dark S		6)		\		v Dark Surface	(TF12)
	d Below Dark Surfac	e (A11)	Depleted Dark	•	,				in in Remarks)	
	ark Surface (A12)	- ()	Redox Depre						•	
Sandy l	Mucky Mineral (S1) (I	-RR N,	Iron-Mangane			LRR N,				
MLR	A 147, 148)		MLRA 136	•						
	Gleyed Matrix (S4)		Umbric Surfac						ydrophytic veg	
	Redox (S5)		Piedmont Flo				•	-	logy must be p	
	d Matrix (S6)		Red Parent M	laterial (F	21) (MLR	A 127, 147	7) ur	nless disturb	ed or problema	atic.
	Layer (if observed):	52								
Type:			_						/	
Depth (in	nches):		_				Hydric Soi	I Present?	Yes	No
Remarks:										
M	cets +3.									
'''										

	- Eastern Mountains and Pledmont Region
Project/Site: Thomsville WindSov City/C	ounty: Jcf-(CSOV) CO. Sampling Date: 1 20 20
Applicant/Owner: AEY	State: Ott Sampling Point: Wettand
Investigator(s): KLV Section	on, Township, Range:
Landform (hillslope, terrace, etc.): DeWession Local reli	ef (concave, convex, none): COOOVC Slope (%): O/
Subregion (LRR or MLRA): LRR V 40.186008	Long:80.702941 Datum: NAD 83
Soil Map Unit Name: No - Nolin Sittlem 0-31/S	NWI classification: PEMIA
Are climatic / hydrologic conditions on the site typical for this time of year? Y	
Are Vegetation \underline{NO} , Soil \underline{NO} , or Hydrology \underline{NO} significantly disturb	ped? Are "Normal Circumstances" present? Yes No
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problema	
SUMMARY OF FINDINGS – Attach site map showing sam	pling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Wetland datu for W009-PEM-CA Datu taken between Creek ar	Is the Sampled Area within a Wetland? Yes No T1 (PEM) A Railyoud tracks.
HYDROLOGY	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)	or (C1)
Field Observations:	
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Yes No Depth (inches): Depth (inches): Depth (inches):	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous)	vious inspections), if available:
Hydrology Indications are C3,1	22, and D5.
	.9

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

Sampling Point: Welland

20'	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30)	% Cover Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
3		Total Number of Dominant Species Across All Strata: (B)
4	·	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7		Prevalence Index worksheet:
	= Total Cover	Total % Cover of: Multiply by:
50% of total cover:	20% of total cover:	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 5 ()	20 % of total cover	FACW species x 2 =
		FAC species x 3 =
1. None		17
2	12	FACU species x 4 =
3		UPL species x 5 =
4		Column Totals: (A) (B)
5		Prevalence Index = B/A =
6		Hydrophytic Vegetation Indicators:
7,		★ 1 - Rapid Test for Hydrophytic Vegetation
8		2 - Dominance Test is >50%
9		3 - Prevalence Index is ≤3.0¹
Anima -	= Total Cover	4 - Morphological Adaptations¹ (Provide supporting
	20% of total cover:	data in Remarks or on a separate sheet)
Herb Stratum (Plot size:	1.16	
1. Phalaris arundinaced	100 Y tuch	Problematic Hydrophytic Vegetation¹ (Explain)
2		¹ Indicators of hydric soil and wetland hydrology must
3	s ———— :————	be present, unless disturbed or problematic.
4		Definitions of Four Vegetation Strata:
5		_
6		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7		more in diameter at breast height (DBH), regardless of height.
8		
9		Sapling/Shrub – Woody plants, excluding vines, less
10		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
		l '
11	Total Cover	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover:	20% of total cover:	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 30'\(\gamma\))		height.
1. None		
2		
3		
4		Hydrophytic
5		Ministra
	= Total Cover	Present? Yes No
50% of total cover:	20% of total cover:	
Remarks: (Include photo numbers here or on a separate	sheet.)	
Wetland veg is present		
Q °		

Depth	Matrix		Redo	x Features		m the absence of in		
(inches)	Color (moist)	%	Color (moist)		pe ¹ Loc ²	<u>Texture</u>	Remarks	
D-1(e_	NR412	85	754K46	15 C	PL PL	<u>SL</u>		
	1 .1		, ,					
	£-	-				2 *		
					_			
		. —						
								
				===>:=				
	<u> </u>		//					
Type: C=C	oncentration D=Der	oletion RM=	=Reduced Matrix, MS	=S=Masked Sar	nd Grains	2l ocation: PL=Po	re Lining, M=Matrix.	
	Indicators:	DIGUOTI, TXIVI-	-reduced imatrix, ivic	- Masked Cal	d Grains.		for Problematic Hyd	ric Soils ³ :
Histosol			Dark Surface	(\$7)			Muck (A10) (MLRA 147	
	pipedon (A2)				88) (MLRA 147		Prairie Redox (A16)	,
	istic (A3)				RA 147, 148)		RA 147, 148)	
	en Sulfide (A4)		Loamy Gleye	d Matrix (F2)	•		ont Floodplain Soils (F	19)
Stratified	d Layers (A5)		Depleted Mar				RA 136, 147)	
	uck (A10) (LRR N)		Redox Dark S	, ,			Shallow Dark Surface (*	TF12)
	d Below Dark Surfac	ce (A11)		k Surface (F7)	1	Other	(Explain in Remarks)	
	ark Surface (A12)	1 DD N	Redox Depre		40) (LDD N			
_	/lucky Mineral (S1) (LRK N,	Iron-Mangan		12) (LRR N,			
	A 147, 148) Gleyed Matrix (S4)		MLRA 136	•	Δ 136 122)	3Indicato	rs of hydrophytic veget	ation and
	Redox (S5)				F19) (MLRA 1		hydrology must be pre	
	Matrix (S6)				MLRA 127, 14		disturbed or problemati	
	Layer (if observed)	:						
Type:								
	ches):					Hydric Soil Pres	sent? Yes	No
Remarks:								
	1							
Me	ets F3.							
1 15								
							7	

	ORM – Eastern Mountains and Piedmont Region
Project/Site: Titlorsville Windsor	City/County: JefferSon Co Sampling Date: 1 20 20
Applicant/Owner:	State: OH Sampling Point: Opla W
Investigator(s): KLV	Section, Township, Range:
Landform (hillslope, terrace, etc.):	ocal relief (concave, convex, none): MML Slope (%): O
Subregion (LRR or MLRA): LRR 40.1860	
Soil Map Unit Name: No-Nolin Sittleam (-3	1. Slavos NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of y	1 - /
Are Vegetation No , Soil No , or Hydrology No significantly	y disturbed? Are "Normal Circumstances" present? Yes No
Are Vegetation NO, Soil NO, or Hydrology NO naturally pr	
	g sampling point locations, transects, important features, etc.
Account of the birds Account to the map showing	g sampling point locations, transcotts, important locations, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No Ves	Is the Sampled Area within a Wetland? Yes No
Data taken within flood pla	an along railroad tracks.
HYDROLOGY	
Water Marks (B1) Presence of R	Plants (B14) Sparsely Vegetated Concave Surface (B8) Tide Odor (C1) Drainage Patterns (B10) Sospheres on Living Roots (C3) Moss Trim Lines (B16) Tideduced Iron (C4) Dry-Season Water Table (C2) Eduction in Tilled Soils (C6) Crayfish Burrows (C8) Tidace (C7) Saturation Visible on Aerial Imagery (C9)
Field Observations:	
Surface Water Present? Yes NoDepth (inches	
Water Table Present? Yes No Depth (inches	
Saturation Present? Yes No Depth (inches (includes capillary fringe)	s): Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:
Domadus	
Hydrology 15 not present.	

VEGETATION (Four Strata) – Use scientific	names of plants.	Sampling Point: Upland
Tree Stratum (Plot size: 30'Y 1. ACEY NEGUNO	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A)
3		Total Number of Dominant Species Across All Strata: (B)
5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
7	= Total Cover 20% of total cover:	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FAC species x 3 =
1		FACU species 50 $\times 4 = 200$ UPL species $\times 5 = 200$ (B) Prevalence Index = B/A = 3.8
6		Hydrophytic Vegetation Indicators:
89		1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹
Herb-Stratum (Plot size:	= Total Cover 20% of total cover: 50 Fact	4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)
3		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4		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.
8		Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
50% of total cover: Woody Vine Stratum (Plot size:)	50 = Total Cover 20% of total cover:	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
V2 . CA @		Hydrophytic Vegetation
	= Total Cover 20% of total cover:	Present? Yes No
Remarks: (Include photo numbers here or on a separate Wettand Vez 15 not do	sheet.)	

Sampling Point: Uplano

Depth	Matrix		Redox Featu	ıres					
(inches)	Color (moist)	% (Type ¹	_Loc ² _	Texture		Remarks	
0-16	10/1R412	100				<u>SU</u>			
	31 31								
		×=====			57				
7	×	(7				
					=======================================				
							-		
_									
			, i =						
				_					
-		· · · · ·							
	-			- 1	-		-		
		letion, RM=Red	duced Matrix, MS=Masl	ked Sand Gra	ins.			ng, M=Matrix.	
Hydric Soil I								oblematic H	
Histosol		_	Dark Surface (S7)	. (O.O.) (##				A10) (MLRA 1	
	pipedon (A2)	_	_ Polyvalue Below Su			148)	Coast Prairie MLRA 14	Redox (A16)	
Black His	n Sulfide (A4)	_	Thin Dark Surface (Loamy Gleyed Matr		47, 140)			odplain Soils	(F19)
	Layers (A5)	_	Depleted Matrix (F3			_	(MLRA 13		(1.10)
	ck (A10) (LRR N)	_	Redox Dark Surface					Dark Surface	e (TF12)
	Below Dark Surface	e (A11)	Depleted Dark Surfa				Other (Explai	in in Remarks)
	ırk Surface (A12)	_	_ Redox Depressions						
	lucky Mineral (S1) (L	.RR N, _	Iron-Manganese Ma	sses (F12) (L	RR N,				
	147, 148)		MLRA 136)	2\ /MI DA 42 4	2 422\	3 _{1m}	diagtora of h	draphytic vo	actation and
	leyed Matrix (S4) edox (S5)	_	Umbric Surface (F1:Piedmont Floodplair					ydrophytic veç logy must be	
	Matrix (S6)	_	Red Parent Material				-	ed or problem	
			_	() (
Restrictive L	.ayer (if observed):								
Type:	_ayer (if observed):								
Type:						Hydric So	il Present?	Yes	No _
			=			Hydric So	il Present?	Yes	No
Type: Depth (inco	ches):					Hydric So	il Present?	Yes	No V
Type: Depth (inco	ches):		not present			Hydric So	il Present?	Yes	No
Type: Depth (inco	ches):		not present	. 261		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):		not present	a - 360		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):		not present	.W.		Hydric So	il Present?	Yes	No V
Type: Depth (income Remarks:	ches):		not present	341		Hydric So	il Present?	Yes	No V
Type: Depth (incomercial Remarks:	ches):		not present	2 243		Hydric So	il Present?	Yes	No V
Type: Depth (income Remarks:	ches):	s are r	not present	340		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	sec		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	Set:		Hydric So	il Present?	Yes	No V
Type: Depth (income Remarks:	ches):	s are r	not present			Hydric So	il Present?	Yes	No V
Type: Depth (income Remarks:	ches):	s are r	not present	26 (Sec)		Hydric So	il Present?	Yes	No
Type: Depth (incomercial Remarks:	ches):	s are r	not present	2 340		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	Sec		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	Sec		Hydric So	il Present?	Yes	No V
Type: Depth (inco	ches):	s are r	not present	Set:		Hydric So	il Present?	Yes	No V
Type: Depth (income Remarks:	ches):	s are r	not present	26 Sed			il Present?	Yes	No V
Type: Depth (income Remarks:	ches):	s are r	not present	340		Hydric So	il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	. Sec			il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	Sec			il Present?	Yes	No
Type: Depth (income Remarks:	ches):	s are r	not present	Sec			il Present?	Yes	No V

WEILAND DETERMINATION DATA FORM - Eas	tern Wountains and Fledition Region
Project/Site: TiHansvII Windsor City/County:	Detterson CO Sampling Date: 11 20 20
Applicant/Owner:	State: OH Sampling Point: WCHONO
Investigator(s): Section, Tow	vnship, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (con	ncave, convex, none): Can awe Slope (%):
Subregion (LRR or MLRA): LRR \ Lat: 40.186710	Long:80.702587 Datum: NAD85
Soil Map Unit Name: No-Nolin SiH lam 0-31. Sla	NWI classification: PHVIC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	No (If no, explain in Remarks.)
Are Vegetation MO , Soil MO , or Hydrology MO significantly disturbed?	Are "Normal Circumstances" present? Yes No
Are Vegetation $\underline{n_0}$, Soil $\underline{n_0}$, or Hydrology $\underline{n_0}$ naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling	point locations, transects, important features, etc.
Hydric Soil Present? Wetland Hydrology Present? Remarks: Wes No within the properties of	e Sampled Area n a Wetland? Yes No
Wetland data for woos-pro-catmod	2
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)
Surface Water (A1) True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	
Saturation (A3)Oxidized Rhizospheres on L	
Water Marks (B1) Presence of Reduced Iron (i	
Sediment Deposits (B2) Recent Iron Reduction in Til	
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)	✓FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches): Saturation Present? Yes Depth (inches): Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous i	nspections), if available.
Remarks:	310 D2 D5
Remarks: Hydrology Indicators are C3, 1	510, 02,00
	A

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

Sampling Point: Wolland

2010	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	% Cover Species? Status	Number of Dominant Species 2
1. Acer negundo	50 y Fac	That Are OBL, FACW, or FAC: (A)
2.		
3		Total Number of Dominant Species Across All Strata: (B)
		Species Across Air Strata.
4		Percent of Dominant Species
5		That Are OBL, FACW, or FAC: (A/B)
6		-
7		Prevalence Index worksheet:
	Fac = Total Cover	Total % Cover of:Multiply by:
50% of total cover:		OBL species x 1 =
Sapling/Shrub Stratum (Plot size:	20 % of total cover.	FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 101)	20 V Fac	FAC species x 3 =
1. Aler negundo	20 y tac	
2		FACU species x 4 =
3		UPL species x 5 =
4		Column Totals: (A) (B)
_		
5		Prevalence Index = B/A =
6		Hydrophytic Vegetation Indicators:
		1 - Rapid Test for Hydrophytic Vegetation
8		2 - Dominance Test is >50%
9.	-	/
	= Total Cover	3 - Prevalence Index is ≤3.01
EON/ of total cover	20% of total cover:	4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover.	20% of total cover	data in Remarks or on a separate sheet)
Herb Stratum (Plot size:	215 1 50	Problematic Hydrophytic Vegetation¹ (Explain)
1. Lysimachia nummularia	30 V Fach	
2		
3		Indicators of hydric soil and wetland hydrology must
		be present, unless disturbed or problematic.
4		Definitions of Four Vegetation Strata:
5	· · · · · · · · · · · · · · · · · · ·	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6		more in diameter at breast height (DBH), regardless of
7	است وست	height.
8		
9		Sapling/Shrub – Woody plants, excluding vines, less
		than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10		injuan.
11	7/	Herb - All herbaceous (non-woody) plants, regardless
	= Total Cover	of size, and woody plants less than 3.28 ft tall.
50% of total cover:	20% of total cover:	Manada di Allanda di A
Woody Vine Stratum (Plot size: 30)		Woody vine – All woody vines greater than 3.28 ft in height.
1. None		norg. tu
2		
3		
4	· · · · · · · · · · · · · · · · · · ·	Hydrophytic
5		1 2 1 2 1
	= Total Cover	Present? Yes No No
50% of total cover:		
Remarks: (Include photo numbers here or on a separate s	2	
	all .	
Wetland veg 15 present	t -	
Manua My 13 passes		
V		

Profile Description: (Describ Depth <u>Matrix</u>			x Features					
(inches) Color (moist)	_ <u>%</u> _ <u>C</u> c	olor (moist)	% <u>Typ</u>	e Loc²	Texture		Remarks	
0-16 104K41L	-80_{-15}	AKAIO	<u>20</u> C	_ PL_	<u>SL</u>			
		· ·						
				_				
	-:							
	_;							
Type: C=Concentration, D=D	epletion, RM=Redu	ced Matrix, MS	S=Masked Sand	Grains.	² Location: PL	≃Pore Linir	ng, M=Matrix.	
lydric Soil Indicators:							oblematic Hyd	ric Soils³:
Histosol (A1)		Dark Surface	(S7)		20	m Muck (A	(10) (MLRA 14	7)
Histic Epipedon (A2)	<u> </u>		low Surface (S8) (MLRA 147	, 148) Co	ast Prairie	Redox (A16)	
Black Histic (A3)		Thin Dark Su	rface (S9) (MLR	A 147, 148)		(MLRA 14		
Hydrogen Sulfide (A4)	_	Loamy Gleye					odplain Soils (F	19)
Stratified Layers (A5)		Depleted Mal				(MLRA 13		
2 cm Muck (A10) (LRR N)		Redox Dark S					Dark Surface (TF12)
Depleted Below Dark Surfa	ace (A11)		k Surface (F7)		Ot	her (Explai	n in Remarks)	
Thick Dark Surface (A12)		Redox Depre		2) /I DD N				
Sandy Mucky Mineral (S1)	(LRR N,	iron-iviangane MLRA 130	ese Masses (F1	Z) (LKK N,				
MLRA 147, 148) Sandy Gleyed Matrix (S4)			ce (F13) (MLRA	136 122\	3Indic	rators of hy	drophytic vege	tation and
Sandy Cleyed Matrix (34) Sandy Redox (S5)	_		odplain Soils (F				ogy must be pr	
Stripped Matrix (S6)	_		/laterial (F21) (N		•	-	ed or problemat	
Restrictive Layer (if observed								
Туре:							/	
Depth (inches):					Hydric Soil F	Present?	Yes V	No
Remarks:							<u>``</u>	
Meets F	5							
MECIS +	5							

ATTACHEMENT 6

PRIMARY HEADWATER HABITAT EVALUATION (HHEI) DATA FORMS

hio One Commented Protection Agency	Primary H	leadwater Hab	itat Field Evalua HHEI Score (sum	ation Form of metrics 1+2+3)	21
SITE NUMBER LENGTH OF STRE	EAM REACH (N) 190 O SCORER KL	LAT 40.190063) COMMENTS S	LONG -80.7005	DRAINAGE AREA (MP) <u> </u>	
				S PHWH Streams" for In	
(Max of 32 TYPE BLDR BOUL BEDRG COBBI GRAV SAND Total of Bidr Slabs, i	2). Additotal number of sign	PERCENT TYPE	ck ONLY two predominant sund (Max of 8). Final metric so SILT [3 pt]: LEAF PACKWOODY DEBR FINE DETRITUS [3 pts]: CLAY or HARDPAN [9 pt]: MUCK [9 pts]: ARTIFICIAL [3 pts]: TOTAL NUMBER OF SU	PERCENT SIS [3 pts]	HHEI Metric Points Substrate Max = 40
time of ev > 30 centin > 22.5 - 30	aluation. Avoid plunge pool neters [20 pts] cm [30 pts] cm [25 pts]		ithin the 61 meter (200 feet m water pipes) (Check C 5 cm - 10 cm [15 pts] < 5 cm [5pts] NO WATER OR MOIST CI MAXIMUM POOL DE	ONLY one box):	Pool Depth Max = 30
3. BANK FU > 4.0 meter > 3.0 m -4	LL WIOTH (Measuredas rs (> 13') [30 pts] .0 m (> 9' 7'-13') [25 pts] .0 m (> 4' 8" -9' 7") [20 pts		urernents) (Check ONL) > 1.0 m - 1.5 m (> 3' 3" - 4" ≤1.0 m (≤ 3' 3")[5 pts] AVERAGE BANKFUL	Yone box); (8°)[15 pts]	Benkfull Width Max=30
20000		This information of	nustalso be completed		
	PARIAN ZONE AND FLOO RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None	FLOODPLAIN R Hature Fores Immature Fores	TE: River Left (L) and Right QUALITY (Most Predomina L it, Wetland rest, Shrub or Old Field Park, New Field		гор
FL Stre	OW REGIME (At Time of E earn Flowing sourface flow with isolated p MMENTS	ocols (interstitial)			ent)
STREAM Flat 0.5 %100 %	GRADIENT ESTIMATE Flat to Moderate	Moderate (2 \$100 \$)	Moderate to Seve	Severe :10 %	100 8)

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

QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S) Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream
□ CWH Name: Distance from Evaluated Stream □ EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATER SHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order:
County: Jefferson Co. Township/City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of lest precipitation: Quantity:
Photo-documentation Notes:
Elevated Turbidity?(Y/N): Canopy (% open): 301.
Were samples collected for water chemistry? (Y/N): Lab Sample # or □ (attach results):
Field Measures:Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)
is the sampling reach representative of the stream (Y/N) If not, explain:
Additional comments/description of pollution impacts:
BIOLOGICAL OBSERVATIONS
(Record all observations below) Fish Observed? (Y/N) Species observed (if known):
Frogs or Tadpoles Observed? (Y/N) Species observed (if known):
Salamenders Observed? (Y/N) N Species observed (if known):
Aquatic Macroinvertebrates Observed? (Y/N) Species observed (if known):
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
Include important landmarks and other features of interest for site evaluation and anarrative description of the stream's location
(Forestal)
FLOW
The Star Star Star Star Star Star Star Star

ATTACHMENT 7

OHIO RAPID ASSESSMENT METHOD FOR WETLANDS (ORAM) DATA FORMS

Site: THONSVIII	e Windsor	Rater(s): CDK (1)	IKLV	Date: 4 2 20
	latuia 4. Watland A	(-:)		11/20/20
17 2 W	letric 1. Wetland A	rea (size).	Les I DINA	DE LOTHAD?
max 6 pts. subtotal Se	lect one size class and assign scor		7001-LEW!	/PFO/CATMODZ
Ů.	>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <2 10 to <25 acres (4 to <10.1 3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1.	0.2ha) (5 pts) ha) (4 pts)) (3 pts) 2ha) (2pts)		
	0.1 to <0.3 acres (0.04 to < <0.1 acres (0.04ha) (0 pts)	0.12ha) (1 pt)		
60	letric 2. Upland bu			
	MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers a Intensity of surrounding land use. VERY LOW. 2nd growth of LOW. Old field (>10 years) MODERATELY HIGH. Res	n (164ft) or more around wetland 25m to <50m (82 to <164ft) arour a 10m to <25m (32ft to <82ft) aro average <10m (<32ft) around wetl	perimeter (7) and wetland perimeter (4) und wetland perimeter (1) and perimeter (0) I average. vildlife area, etc. (7) h forest. (5) nservation tillage, new fallo	ow field. (3)
22 20 M	etric 3. Hydrology		, 35/10/100/10/11	
max 30 pts. subtotal 3a.	Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1)	apply, 3t		
	Seasonal/Intermittent surface Perennial surface water (lal Maximum water depth. Select or >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1) Modifications to natural hydrologic	se or stream) (5) 36 Iy one and assign score. (2)	d. Duration inundation/sat Semi- to permany Regularly inunda Seasonally inunda Seasonally satura	
	None or none apparent (12 Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (nor filling/grading road bed/RR trac	
7 37 M	letric 4. Habitat Alf	teration and Devel	opment.	-
max 20 pts. subtotal 4a.	Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2)	e or double check and average.		
4b.	Recent or no recovery (1) Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	one and assign score.		
4c.	Habitat alteration. Score one or d	ouble check and average.		
37	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed removal
subtotal this page last revised 1 February 20	001 jjm			

Site:	THORE	SVILL WINGSOY Rater	(s):CDK	Date: 4 21/20
	27	1		WOUL-PEM/PFU/CATMODZ
	51	·		
su	ibtotal first p	7	حام	WOOI-PENTIA-O CATMONZ
0	37	Metric 5. Special Wetlan	as.	
max 10 pts.	subtotal	Check all that apply and score as indicated.		
		Bog (10) Fen (10)		
		Old growth forest (10)		
		Mature forested wetland (5)		
		Lake Erie coastal/tributary wetland-u		
		Lake Erie coastal/tributary wetland-ro		ogy (5)
		Relict Wet Prairies (10)	mgs) (10)	
		Known occurrence state/federal thre	atened or enda	ngered species (10)
		Significant migratory songbird/water		
		Category 1 Wetland. See Question		
3	40	Metric 6. Plant communi	ities, inte	erspersion, microtopography.
max 20 pts	subtotal] 6a. Wetland Vegetation Communities.	Vagatation	Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises small part of wetland's
		Emergent		vegetation and is of moderate quality, or comprises a
		Shrub Forest	2	significant part but is of low quality
		Mudflats	2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality
		Select only one. High (5)	Narrative De	escription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)		disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		None (0)		although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add	6	threatened or endangered spp
		or deduct points for coverage	high	A predominance of native species, with nonnative spp
		Extensive >75% cover (-5) Moderate 25-75% cover (-3)		and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0)	05	
		Absent (1)		Open Water Class Quality
		6d. Microtopography. Score all present using 0 to 3 scale.	0	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh	Misset	rentu Carra Saala
		Amphibian breeding pools	Microtopogi	Absent
			1	Present very small amounts or if more common
			2	of marginal quality
			2	Present in moderate amounts, but not of highest
			3	quality or in small amounts of highest quality Present in moderate or greater amounts
				and of highest quality
11/5			-	

End of Quantitative Rating. Complete Categorization Worksheets.

Site: Tillons	aulle Windsor	Rater(s): CDK/WY	KLV Date: 4 23	120									
	_	1 1	11/12	0/20									
22	Metric 1. Wetland A	rea (size).		•									
max 6 pts, subtotal	Select one size class and assign sco	re.	- DENALDER LOATIMADZ										
	>50 acres (>20.2ha) (6 pts 25 to <50 acres (10.1 to <2	0.2ha) (5.pts)	5-PEM PFO CATMODZ										
	10 to <25 acres (4 to <10.1	ha) (4 pts)	•										
	3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1												
	0.1 to <0.3 acres (0.12 to <												
	<0.1 acres (0.04ha) (0 pts)												
2 4	Metric 2. Upland bu												
max 14 pts. subtotal	2a. Calculate average buffer width.												
		m (164ft) or more around wetland p 25m to <50m (82 to <164ft) around		(4)									
	NARROW. Buffers average	e 10m to <25m (32ft to <82ft) arour	nd wetland perimeter (1)										
		average <10m (<32ft) around wetlar . Select one or double check and a											
	VERY LOW, 2nd growth o	ensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)											
), shrub land, young second growth sidential, fenced pasture, park, cons	forest. (5) servation tillage, new fallow field. (3)										
		oen pasture, row cropping, mining, o											
18 22	Metric 3. Hydrology	1.											
max 30 pts. subtotal	Ja. Sources of Water. Score all that	apply. 3b.	Connectivity. Score all that apply.										
	High pH groundwater (5) Other groundwater (3)		100 year floodplain (1) Between stream/lake and other huma	an use (1)									
	Precipitation (1)	36	Part of wetland/upland (e.g. forest), o										
	Seasonal/Intermittent surfa		Part of riparian or upland corridor (1)	or dbl check									
	Perennial surface water (la 3c. Maximum water depth. Select or		Duration inundation/saturation. Score one Semi- to permanently inundated/satu										
	>0.7 (27.6in) (3)		Regularly inundated/saturated (3)										
	0.4 to 0.7m (15.7 to 27.6in <0.4m (<15.7in) (1)	(2)	Seasonally inundated (2) Seasonally saturated in upper 30cm	(12in) (1)									
	3e. Modifications to natural hydrolog	ic regime. Score one or double che	ck and average.										
	None or none apparent (12	Check all disturbances observed											
	Recovered (7) 5	ditch	point source (nonstormwater) filling/grading										
	Recent or no recovery (1)	dike	road bed/RR track										
		weir stormwater input	dredging other										
17	T												
9.5 31.5	Metric 4. Habitat Al	teration and Develo	opment.										
max 20 pts. subtotal	4a. Substrate disturbance. Score or												
	None or none apparent (4)												
	Recovered (3) 2,5												
	Recent or no recovery (1) 4b. Habitat development. Select only	v one and assign score.											
	Excellent (7)	y one and accign accie.											
	Very good (6) Good (5)												
	Moderately good (4)												
	Fair (3)												
	Poor to fair (2) Poor (1)												
	4c. Habitat alteration. Score one or	double check and average.											
	None or none apparent (9)												
	Recovered (6) Recovering (3)	mowing grazing	shrub/sapling removal herbaceous/aquatic bed removal										
-	Recent or no recovery (1)	clearcutting	sedimentation										
215		selective cutting woody debris removal	dredging farming										
51.0		toxic pollutants	nutrient enrichment										
subtotal this pa	-												
last revised 1 Februa	ary∠uu1 jjm												

	. ^-	7.01.
Site: Titonsville Windsor Rater	s): CDK	(J)Y KLV Date: 4 23 26
——————————————————————————————————————		11/20/20
010		11/20/20
13131		.,
a Matel Cost as as		
subtotal first page	_	
👝 スi < Metric 5. Special Wetland	ds. 、	C DENOTORIONES LUTTO
0 0 0	N.	1005-PEM/PFO/CATMODZ
max 10 pts. subtotal Check all that apply and score as indicated.		, ,
and depty and deep day indicated.		
Bog (10)		
Fen (10)		
Old growth forest (10)		
Mature forested wetland (5)		
Lake Erie coastal/tributary wetland-ui	nrestricted hyd	rology (10)
Lake Erie coastal/tributary wetland-re	stricted hydro	logy (5)
Lake Plain Sand Prairies (Oak Openi	ngs) (10)	
Relict Wet Prairies (10)		
Known occurrence state/federal threa	atened or enda	angered species (10)
Significant migratory songbird/water f		
Category 1 Wetland. See Question 1		3 (/
📿 🕰 🖂 Metric 6. Plant communi	ties, int	erspersion, microtopography.
	•	
max 20 pts. subtotal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
Aquatic bed	1	Present and either comprises small part of wetland's
Emergent		vegetation and is of moderate quality, or comprises a
Shrub	* _	significant part but is of low quality
Forest	2	Present and either comprises significant part of wetland's
Mudflats		vegetation and is of moderate quality or comprises a small
Open water	-	part and is of high quality
Other	3	Present and comprises significant part, or more, of wetland's
6b. horizontal (plan view) Interspersion.	-	vegetation and is of high quality
Select only one.		
High (5)	Narrative D	escription of Vegetation Quality
Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
Moderate (3)		disturbance tolerant native species
Moderately low (2)	mod	Native spp are dominant component of the vegetation,
Low (1)		although nonnative and/or disturbance tolerant native spp
None (0)		can also be present, and species diversity moderate to
6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
to Table 1 ORAM long form for list. Add		threatened or endangered spp
or deduct points for coverage	hink	
	high	A predominance of native species, with nonnative spp
Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
Nearly absent <5% cover (0)		
Absent (1)	Mudflat and	Open Water Class Quality
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
Standing dead >25cm (10in) dbh		
Amphibian breeding pools	Microtopog	raphy Cover Scale
	0	Absent
		Present very small amounts or if more common
	*	of marginal quality
	2	Present in moderate amounts, but not of highest
	2	quality or in small amounts of highest quality
	2	
	3	Present in moderate or greater amounts
- ^ -		and of highest quality

End of Quantitative Rating. Complete Categorization Worksheets.

Site: Ti	Honsy	111	e Wind	SOV	Rater(s):	KLV		Date: \\Z	0/20					
	1	7		Wetland A	Area (size)	• 10	W009-PEM-CAT1							
max 6 pts.	subtotal]	oat one cizo d	ologo and accian see	aro.									
max g pts.	Subtotal	Sei	- International Control	class and assign sco cres (>20.2ha) (6 pts										
				<50 acres (10.1 to <2										
				<25 acres (4 to <10.1										
				10 acres (1.2 to <4ha <3 acres (0.12 to <1										
			0.1 to	<0.3 acres (0.04 to <	<0.12ha) (1 pt)									
г т		٦		cres (0.04ha) (0 pts)		_								
6	7						ing land use.							
max 14 pts.	subtotal	2a.		verage buffer width.										
				. Buffers average 50 JM. Buffers average										
			MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)											
		01	VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)											
		2D.	2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)											
		LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)												
								ow field. (3)	97 27					
		la.		Urban, industrial, o		cropping, mining, c	construction. (1)							
1151	12	IM	etric 3.	Hydrology	y.									
may 20 mts	auhtatal .]	20000000000000000000000000000000000000			95	Community day Conso all	that apply						
max 30 pts.	subtotal	3a.		Nater. Score all that ₀H groundwater (5)	т арргу,	30.	Connectivity. Score all							
				groundwater (3)			Between stream	lake and other hu						
				itation (1)	(2)			pland (e.g. forest)						
				nal/Intermittent surfa nial surface water (la		3d.	Duration inundation/sat	r upland corridor (uration: Score on						
		3c.	-	ater depth. Select of			Semi- to perman	ently inundated/sa						
				27.6in) (3)) (O)		Regularly inunda							
				0.7m (15.7 to 27.6in (<15.7in) (1)) (2)		Seasonally inund	ated (2) ated in upper 30cr	n (12in) (1)					
		3e.		s to natural hydrolog	ic regime. Score	one or double che			=					
			None o	or none apparent (12	2) Check all distu	rbances observed			1					
				rered (7)	ditch		point source (nor	nstormwater)						
				rering (3) at or no recovery (1)	tile		filling/grading road bed/RR trace	:k						
				1011010001017 (17	weir		dredging							
					stormwa	ter input	other							
7	29	M	etric 4.	Habitat Al	Iteration a	nd Develo	pment.							
max 20 pts.	subtotal	ا 4a	Substrate di	sturbance. Score or	ne or double check	cand average.								
			100	or none apparent (4))									
				ered (3) ering (2)										
				it or no recovery (1)										
		4b.		elopment. Select onl	ly one and assign	score.								
			Excelle	ent (/) jood (6)				5						
			Good											
				ately good (4)										
			Fair (3	6) o fair (2)										
			Poor (
		4c.	Habitat alter	ation. Score one or	double check and	average.			=1					
				or none apparent (9)	The same of the sa	rbances observed								
			$\overline{}$	ered (6) ering (3)	mowing		shrub/sapling rer							
26				it or no recovery (1)	clearcutt	ing	sedimentation							
ſ	00	1			selective		dredging							
	29				woody de	ebris removal utants	farming nutrient enrichme	ent						
L sut	ototal this pa	⊒ age			Lovic boil	acanto								

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Site: Tilton	SVILL WindSor Rater	(s): KU	U Date: 1 \ Z0 Z0										
subtotal first p	□ ■ Metric 5. Special Wetlar	nds.	W009-PEM-CAT1										
max 10 pts. subtotal	Check all that apply and score as indicated												
max 10 pts, subtotel		Fen (10) Old growth forest (10)											
	Lake Plain Sand Prairies (Oak Openings) (10)												
9	Relict Wet Prairies (10) Known occurrence state/federal threatened or endangered species (10) Significant migratory songbird/water fowl habitat or usage (10) Category 1 Wetland. See Question 1 Qualitative Rating (-10)												
-4 25	Metric 6. Plant commun	ities, inte	erspersion, microtopography.										
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale										
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area										
	Aquatic bed Emergent Shrub	E.	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality										
	Forest	2	Present and either comprises significant part of wetland's										
	Mudflats		vegetation and is of moderate quality or comprises a small										
	Open water Other	3	part and is of high quality Present and comprises significant part, or more, of wetland's										
	6b. horizontal (plan view) Interspersion.	3	vegetation and is of high quality										
	Select only one.	1)											
	High (5)		scription of Vegetation Quality										
	Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or										
	Moderate (3) Moderately low (2)	mod	disturbance tolerant native species Native spp are dominant component of the vegetation,										
	Low (1)	mod	although nonnative and/or disturbance tolerant native spp										
	None (0)		can also be present, and species diversity moderate to										
	6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare										
	to Table 1 ORAM long form for list. Add	- Etab	threatened or endangered spp										
	or deduct points for coverage Extensive >75% cover (-5)	high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually										
	Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,										
	Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp										
	Nearly absent <5% cover (0) Absent (1)	Mudflat and	Open Water Class Quality										
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)										
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)										
	Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more										
	Standing dead >25cm (10in) dbh	5 J	I right that (olde deleta) of files										
	Amphibian breeding pools	Microtopogr	aphy Cover Scale										
		0	Absent										
31		3 .	Present very small amounts or if more common of marginal quality										
	×	2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality										
		3	Present in moderate or greater amounts										

End of Quantitative Rating. Complete Categorization Worksheets.



February 9, 2021 Project C170352.92

Ms. Amy Toohey Environmental Specialist-Principal American Electric Power Company 8600 Smiths Mill Road New Albany, Ohio 43054

Ecological Survey Report Addendum No. 2 Letter Report Tiltonsville – Windsor 138 kV Ratings Increase Project Jefferson County, Ohio and Brooke County, West Virginia

Dear Ms. Toohey:

In April of 2020, November 2020, and January 2021 GAI Consultants, Inc. (GAI) conducted a wetland and stream review on behalf of American Electric Power (AEP) for the Tiltonsville – Windsor 138 kV Ratings Increase Project (Project) in Jefferson County, Ohio and Brooke County, West Virginia. An Ecological Survey Report (ESR) was provided to AEP in September 2020. The ESR included the methods and results of the field study.

Subsequent design changes to the Project resulted in an expansion of the Study Area (SA) of the Project along the Winsdor Extension segment of the Project, which includes the Ohio River crossing. A supplemental wetland and stream field review were conducted on the expanded SA on January 25, 2021. Wetland resources previously identified with the original SA were extended within the limits of the expanded SA. No new features were identified within the expanded SA.

Mapping depicting the newly studied areas and delineated features are included as Attachment 1. The updated Wetland Resource Table (Table 1) is included as Attachment 2, and the updated Stream Resource Table (Table 2) is included as Attachment 3.

We appreciate working with you on this Project. If you have any questions or need additional information, please contact me at 330.323.1894 or <u>j.noble@gaiconsultants.com</u>.

Sincerely,

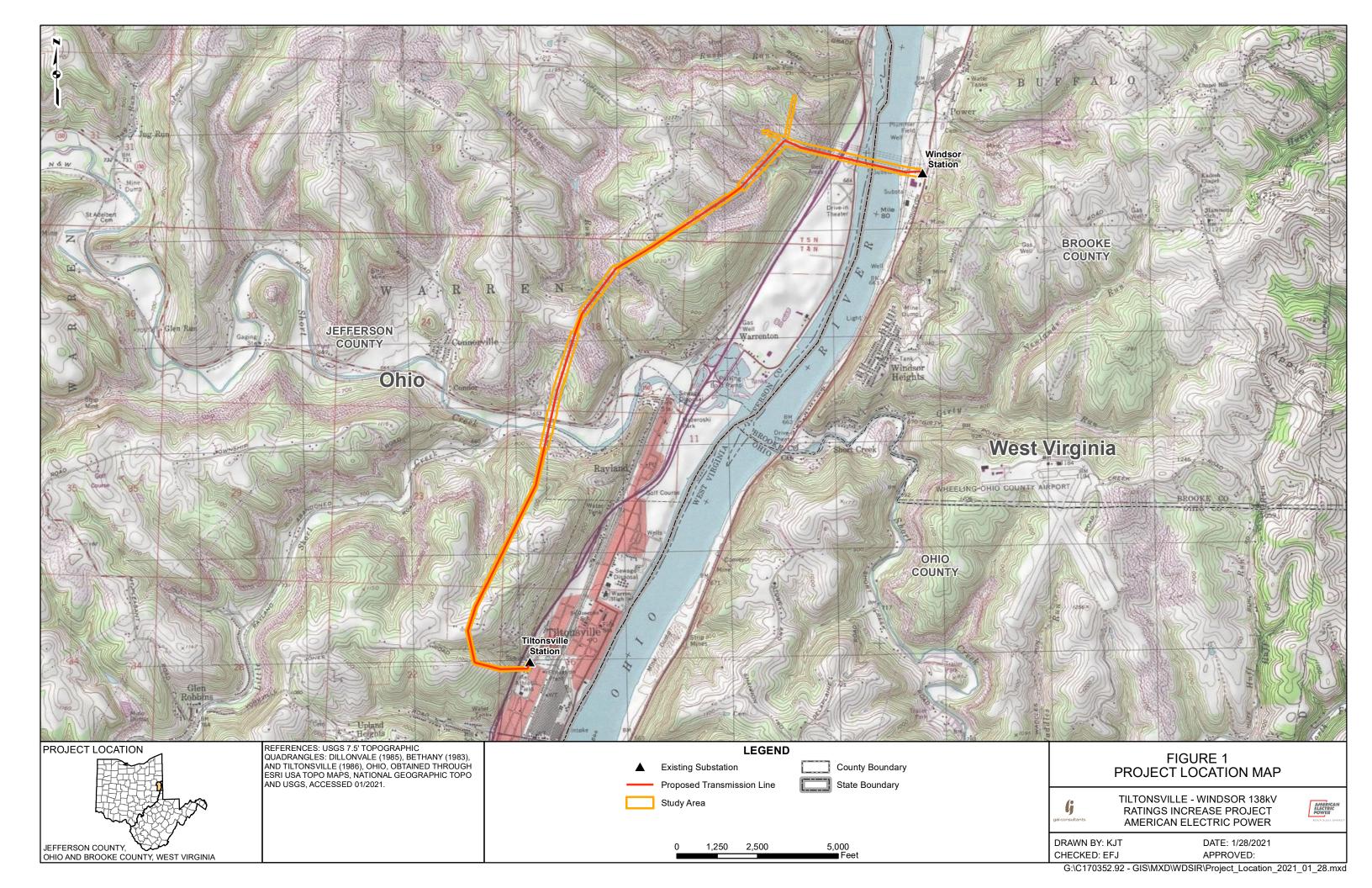
GAI Consultants, Inc.

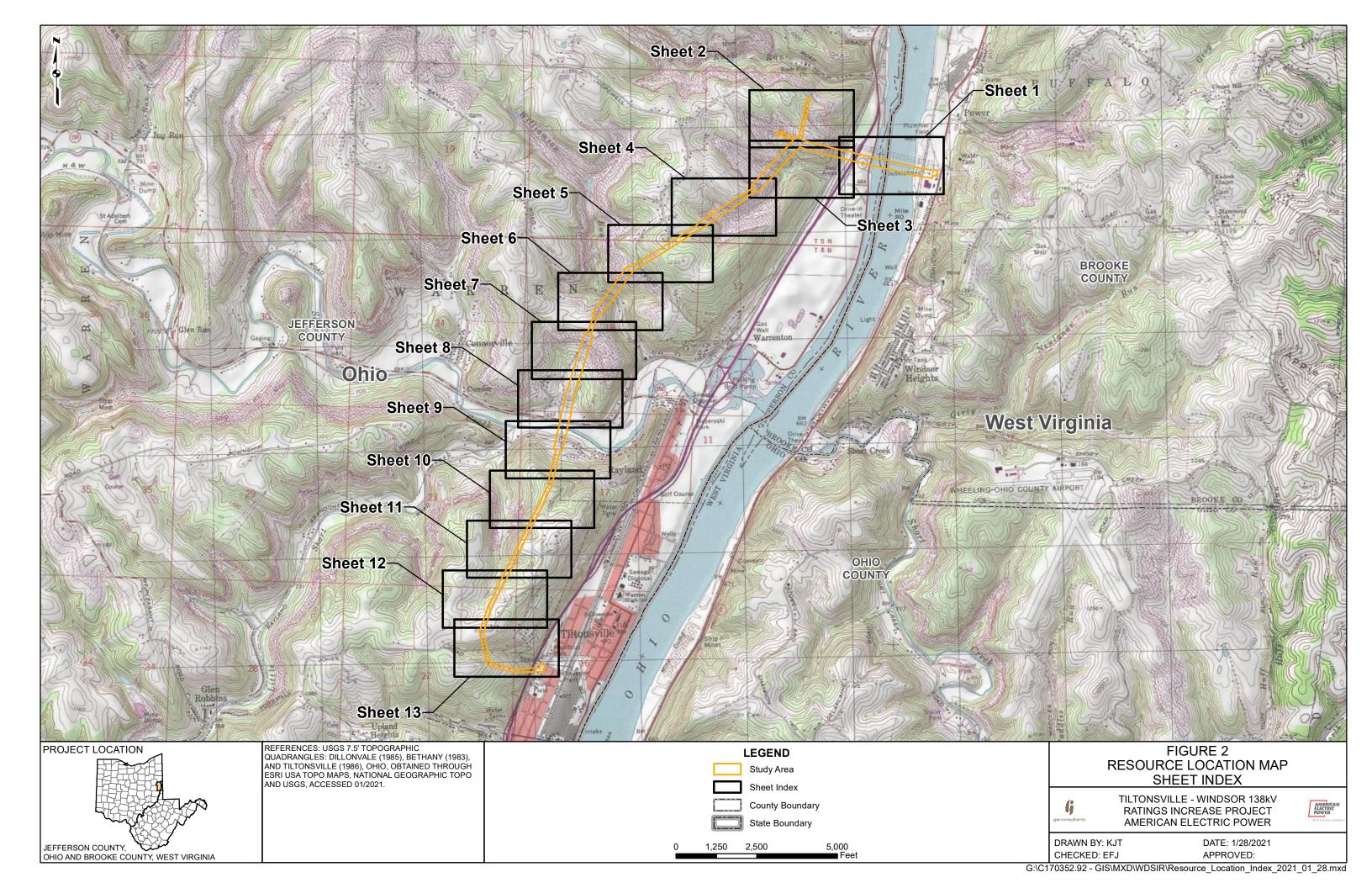
Joshua J. Noble Senior Environmental Manager

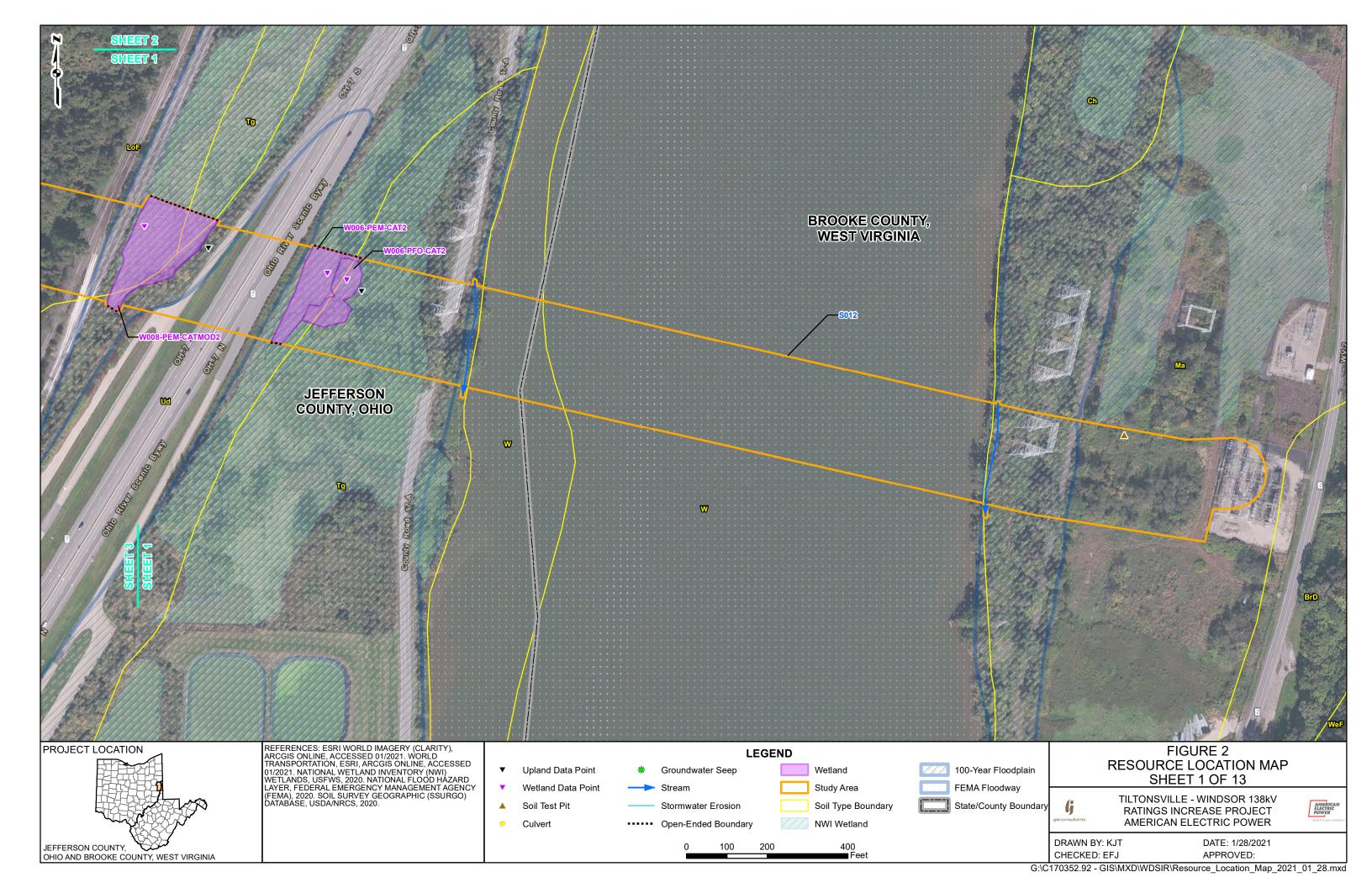
Attachments: Attachment 1 (Project Mapping)

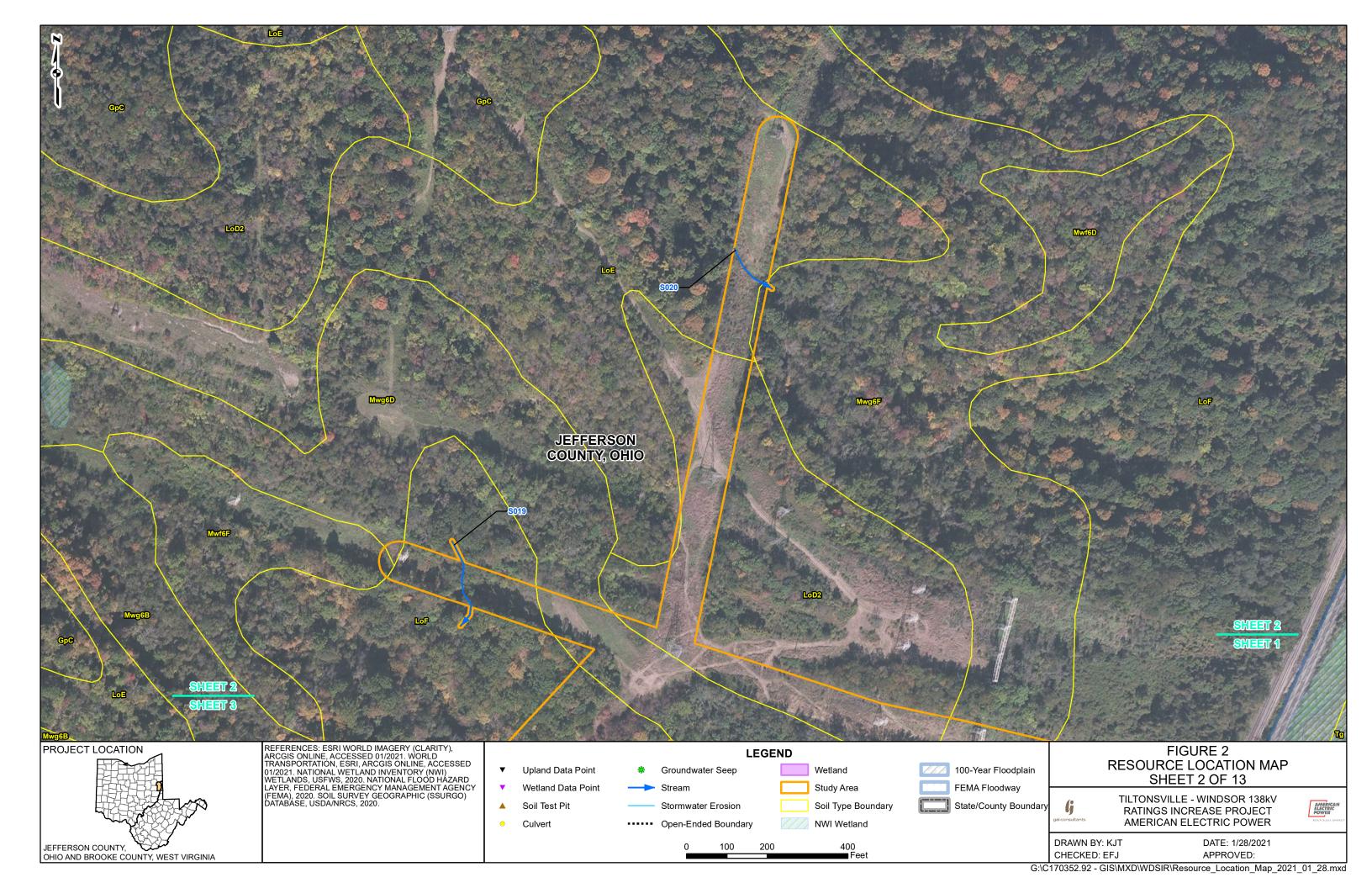
Attachment 2 (Table 1 – Wetland Resource Table) Attachment 3 (Table 2 – Stream Resource Table) Ms. Amy Toohey February 9, 2021 Project C170352.92

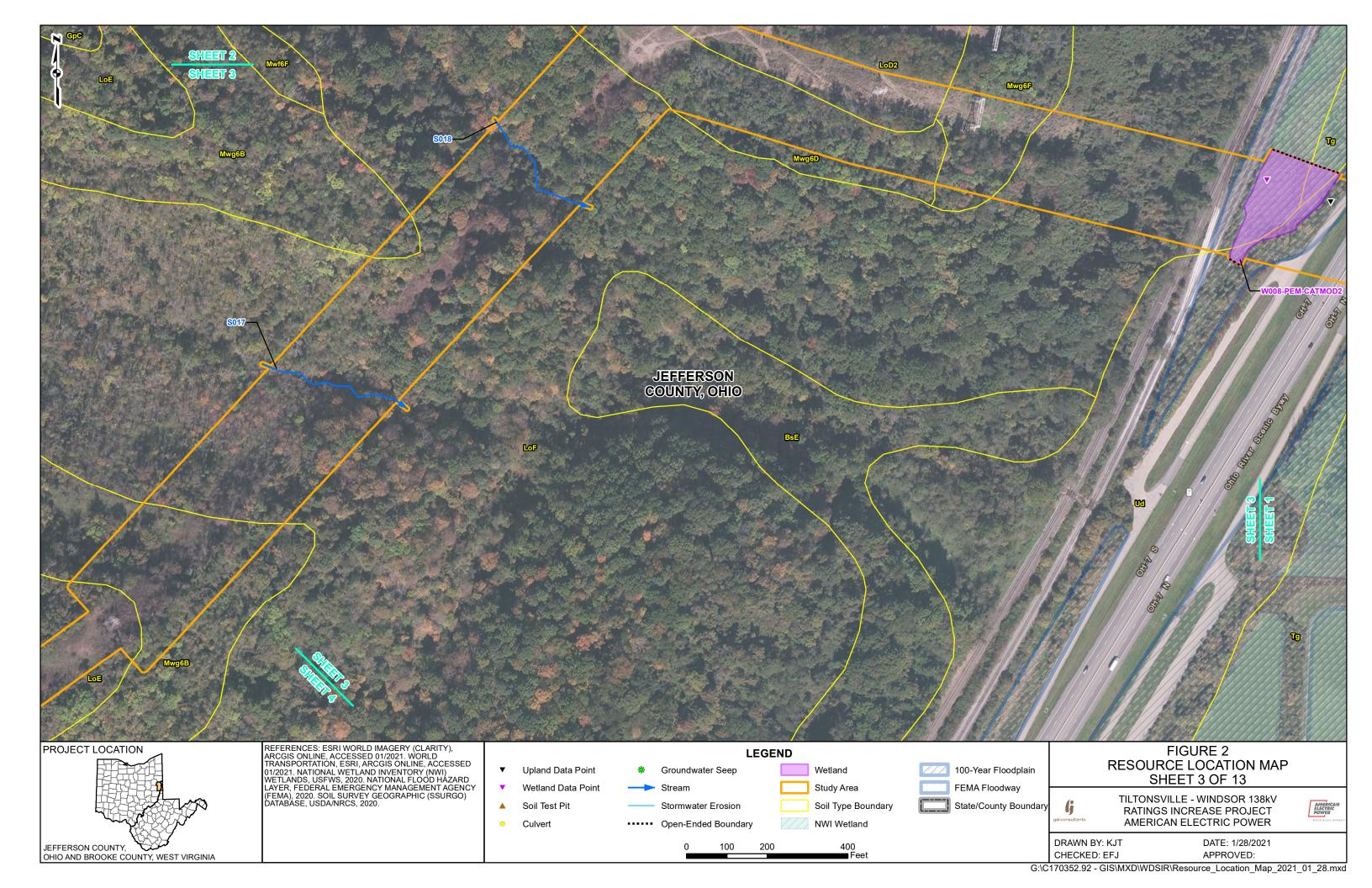
ATTACHMENT 1 Project Mapping

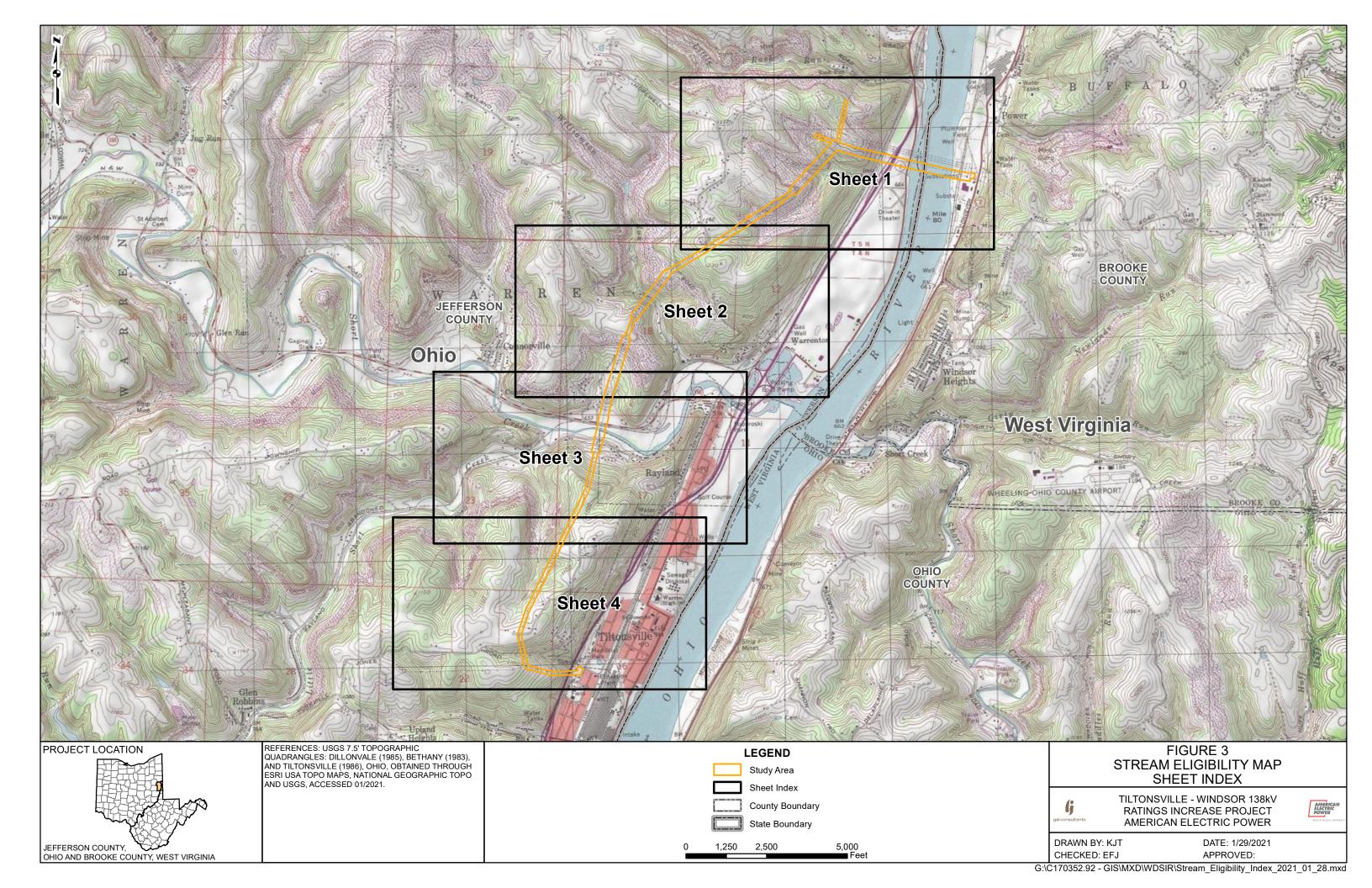


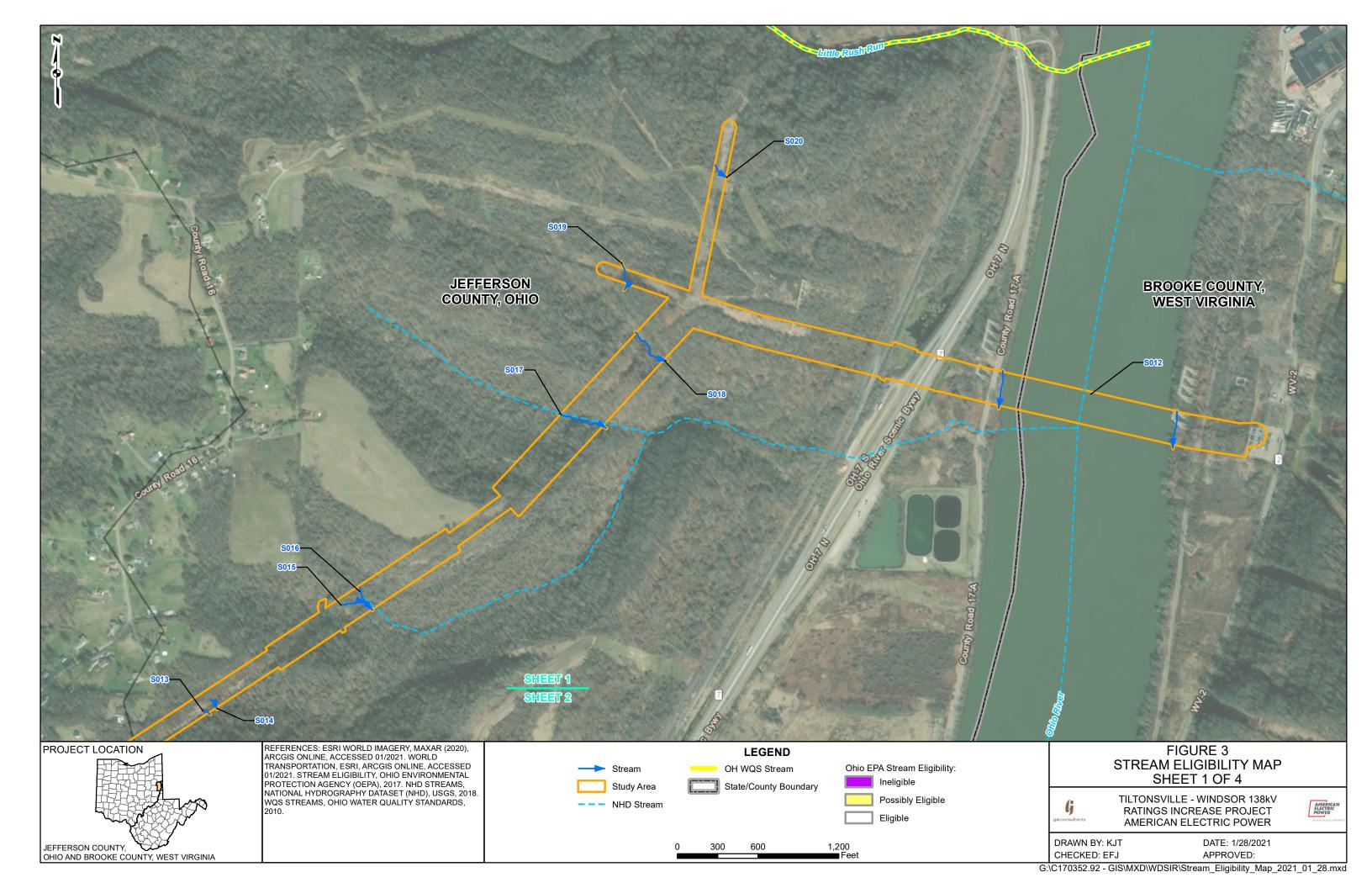












Ms. Amy Toohey February 9, 2021 Project C170352.92

ATTACHMENT 2 Wetland Resource Table

TABLE 1
WETLANDS EXTENDED WITHIN THE EXPANDED STUDY AREA

	Location		С	RAM	Nearest Full-tion Business				Proposed Impacts								
Wetland ID	Latitude	Longitude	Isolated?	Habitat Type	Delineated Area (acre)	Score	Category	Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Temporary Matting Area (acre)	Permanent Impact Area (acre)				
W006-PEM-CAT2	40.208108	-80.668931	No	PEM	0.379	40	46 2			46 2		2/2	N/A	N/A	N/A	0	0
W006-PFO-CAT2	40.208049	-80.668700	No	PFO	0.269	46		2/2	N/A	N/A	N/A	0	0				
W008-PEM-CATMOD2	40.208415	-80.670272	No	PEM	0.816	37	Modified 2	2/2	N/A	N/A	N/A	0	0				
				Total:	1.464							0	0				

Ms. Amy Toohey February 9, 2021 Project C170352.92

ATTACHMENT 3 Stream Resource Table

TABLE 2 STREAMS EXTENDED WITHIN THE EXPANDED STUDY AREA

	Lo	cation													Delineated	Bankfull	OHWM	Field Evaluation			Ohio EPA		Proposed	d Impacts
Stream ID	Latitude	Longitude	Stream Type	Stream Name	Length (feet)	ength Width V	Width (feet)	Method	Score	Category / Rating / OAC Designation	401 Eligibility	Stream Crossing?	Fill Type	Length (LF)										
S012	40.207746	-80.667528	Perennial	Ohio River	288	1200	1200	Chapter 3745-1-13	N/A	WWH	Eligible	N/A	N/A	0										
	Total:													0										

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/2/2021 11:33:42 AM

in

Case No(s). 21-0173-EL-BLN

Summary: Notice Letter of Notification Application for the Windsor Extension (OH) 138 kV Transmission Line Project electronically filed by Tanner Wolffram on behalf of AEP Ohio Transmission Company, Inc.