

LETTER OF NOTIFICATION FOR Culbertson 138kV Station Project



PUCO Case No. 20-0542-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.

March 16, 2020

LETTER OF NOTIFICATION FOR CULBERTSON 138KV STATION PROJECT

LETTER OF NOTIFICATION

AEP Ohio Transmission Company, Inc.'s Culbertson 138kV Station Project

4906-6-05

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

4906-6-05(B) General Information

B(1) Project Description

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

The Company has identified the need to construct the Culbertson 138kV Station Project (the "Project") in Washington Township, Muskingum County, Ohio. The Project consists of constructing a new transmission substation to provide electricity to a customer's facility. The station will be approximately 1.5-acres and located adjacent to the customer's station. The station will receive looped service (approximately 0.5-mile in length) from the Ohio Central - Philo 138 kV #1 circuit (this line extension will be filed with OPSB under separate cover).

The Project will be constructed on property currently owned by the Customer. The Company will purchase approximately 2 acres of land from the Customer to construct and operate the station. The location of the customer's property and property to be purchased by the Company (collectively the "Project Area") is shown on Figure 1.1 and Figure 1.2 in Appendix A.

The Project meets the requirements for a Letter of Notification ("LON") because it is within the types of projects defined by Item (3) of *Appendix A* to O.A.C. 4906-1-01, *Application Requirement Matrix For Electric Power Transmission Lines*:

(3) Constructing a new electric power transmission substation.

The Project has been assigned PUCO Case No. 20-0542-EL-BLN.

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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 Project is part of the Company's plan to modify transmission facilities in the Muskingum County, OH area to serve a customer's new facility and operations in the area. The new customer facility will require 30MW of peak power to be served via a new dedicated station delivery (Culbertson Station). The Company will construct Culbertson Station, as well as the new 0.5 mile of double circuit 138kV line extensions that will connect the delivery point to existing transmission line facilities. The Company plans to file the line extension with OPSB in the near future. The station will be constructed on the customer's property, ownership of which will be transferred to the Company.

The Project need and solution were submitted to the PJM Subregional RTEP Committee during the September 2019 and February 2020 meeting, respectively (see Appendix B). The PJM supplemental number will be provided to the OPSB once issued by PJM. The Project will be included in the Company's 2020 Long Term Forecast Report.

B(3) Project Location

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

The location of the Project in relation to existing transmission lines and stations is shown on **Figure 1.1**. The Project directly impacts the following existing facilities:

- Ohio Central-Philo 138 kV transmission line

B(4) Alternatives Considered

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

The Project is located on property owned by the customer, which will be transferred to the Company to construct and operate the station. The Project Area and surrounding land uses consist of open field and industrial land. The Project Area does not contain any streams or wetlands and the nearest residence is located over 3,000 feet from the Project Area. The location of the Project minimizes impacts to the community and the environment, while taking into account the engineering and construction needs of the customer. Therefore, no significant alternatives were considered as part of this project.

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B(5) Public Information Program

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

The Company will inform affected property owners and tenants about this Project 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 all requirements of OAC Section 4906-6-08(A)(1-6). Further, the Company has mailed (or will mail) a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). The Company maintains a website (<http://aeptransmission.com/ohio/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library in each political subdivision for this Project. The Company retains right-of-way land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the project.

B(6) Construction Schedule

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

The Company anticipates construction of the Project will begin in June 2020, and the in-service date of the Project will be approximately September 2020.

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 1.1 included in Appendix A identifies the location of the Project Area on a United States Geological Survey 1:24,000 quadrangle map. Figure 1.2 in Appendix A is an aerial map of the Project Area.

To visit the Project from Columbus, take I-70 W towards Wheeling, West Virginia. Continue on I-70 for approximately 54 miles, take exit 157 for OH-93 N toward Adamsville and turn left. After 1.9 miles turn left onto Innovation Way and keep left for approximately 0.9-mile and arrive at the Project on the right. The coordinates of the entrance to the Culbertson Station is latitude 39.981709, longitude -81.959911.

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B(8) Property Agreements

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

Construction of the new Culbertson Station will occur on property currently owned by the customer (approximately 95 acres; Parcel No. 70-15-13-02-000). The Company will purchase approximately 2 acres of the parcel for construction of the station and access roads. No other property acquisition or easements are required to construct and operate Culbertson Station.

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.

Equipment proposed for the Project includes:

- 1) 4 - 138kV circuit breakers
- 2) 1 - DICM

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)(i) Calculated Electric and Magnetic Field Strength Levels

Not applicable. The proposed Project is an electric transmission station and there are no occupied residences or institutions located within 100 feet of the Project.

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

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

Not applicable. The proposed Project is an electric transmission station and there are no occupied residences or institutions located within 100 feet of the Project.

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B(9)(b)(ii)(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 \$6,000,000.

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 within Washington Township, Muskingum County, Ohio. Land uses in the Project Area consist of open field and industrial land. Deciduous forest occurs to the south and developed land is limited to adjacent roads and industrial buildings to the north.

The Project is adjacent to existing industrial facilities with rural residential located along OH-93. The closest residence is located greater than 3,000 feet to the southeast of the proposed Culbertson Station. There are no commercial buildings or complexes in the area immediately surrounding the Project.

B(10)(b) Agricultural Land Information

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

Based on coordination with the Muskingum County Auditor's Office on February 21, 2020, the Project (Parcel Nos. 70-15-13-02-000) is not located within a registered agricultural district land. Additionally, the Project Area does not contain active agricultural row crop land (see Appendix C).

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 conducted a cultural resource survey and report for the Project in June 2019. Correspondence from the State Historic Preservation Office ("SHPO") was received in January 2020, see Appendix C. The SHPO stated that the Project will have no adverse effect on historic properties and that no further archaeological work is necessary.

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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 (“OEPA”) for authorization of construction storm water discharges under General Permit OHC0000004, and AEP Ohio Transco will implement and maintain best management practices, as outlined in the project-specific Storm Water Pollution Prevention Plan, to minimize erosion and control sediment to protect surface water quality during storm events. The Project will not impact streams or wetlands, and no tree clearing will be required for the Project. Therefore, a permit from the U.S. Army Corps of Engineers (“USACE”) will not be required for the Project.

The Project is not located within a Federal Emergency Management Agency (“FEMA”) 100-year floodplain area (Federal Emergency Management Agency, Flood Insurance Rate Map, Panel 0305G, Map Number 29119C0305G, Effective Date July 6, 2010). Therefore, no floodplain permitting is required for the Project. There are no other known local, state or federal requirements that must be met prior to commencement of the Project.

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

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

The USFWS *County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species* (available at <https://www.fws.gov/midwest/endangered/lists/pdf/OhioCtyList29Jan2018.pdf>) document was reviewed to determine the threatened and endangered species known to occur in Muskingum County. This USFWS publication listed the following species as occurring within Muskingum County: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), fanshell (*Cyprogenia stegaria*; federally endangered), rabbitsfoot (*Quadrula cylindrica*; federally threatened), sheepnose (*Plethobasus cyphus*; federally endangered), and snuffbox (*Epioblasma triquetra*; federally endangered). As part of the ecological study completed for the Project, a coordination letter was submitted to the USFWS’ Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. A response has not been received. However, the Project does not require waterway impacts or tree clearing, thus impacts to these federally listed species are not anticipated.

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Several state-listed threatened species, endangered species, and species of concern are listed by the Ohio Department of Natural Resources (available at <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/state-listed%20species/muskingum.pdf>) as occurring, or potentially occurring in Muskingum County. These state-listed species are addressed in detail in the Ecological Report included in Appendix C.

A coordination letter was submitted to the ODNR DOW NHP in February 2020, seeking an environmental review of the proposed Project for potential impacts on state-listed threatened or endangered species. A response has not been received.

The Company will provide OPSB with supplemental information containing the responses from ODNR and USFWS upon receipt. Coordination letters with the ODNR and USFWS are provided in Appendix D.

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 ODNR and USFWS in February 2020 requesting a review of the Project Area and identification of areas of ecological concern. Responses have not been received. The Company will provide OPSB supplemental information containing the responses from ODNR and USFWS upon receipt. Coordination letters with the ODNR and USFWS are provided in Appendix D. However, the Company does not anticipate impacts to state or federally managed land or ecological resources to occur as a result of the Project.

No properties identified in the National Conservation Easement Database (<http://www.conservationeasement.us>) were identified in the Project vicinity.

The Project is not located within a Federal Emergency Management Agency ("FEMA") 100-year floodplain area (Federal Emergency Management Agency, Flood Insurance Rate Map, Panel 0305G, Map Number 29119C0305G, Effective Date July 6, 2010). Therefore, no floodplain permitting is required for the Project.

Wetland and stream delineation field surveys were completed within the Project Area by the Company's consultant in February 2020. The results of the wetland and stream delineations are presented in the Ecological Survey Report included in Appendix D. Two Palustrine Emergent (PEM) wetlands were identified in a review area of approximately ten acres in the location of the proposed station. These wetland resources are beyond the extent of the work area and station. Therefore, these resources will not be impacted by the Project.

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B(10)(g) Unusual Conditions

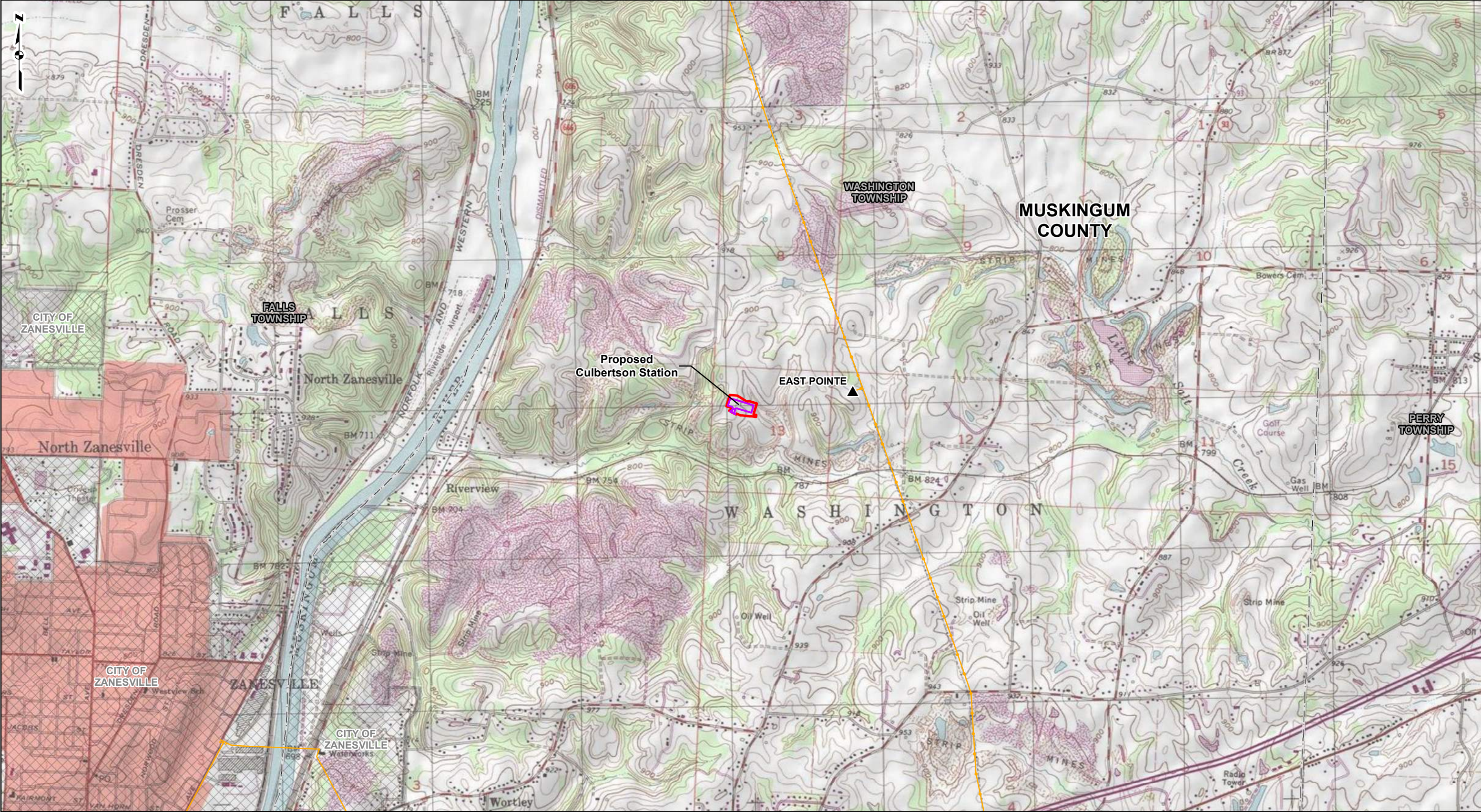
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

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

LETTER OF NOTIFICATION FOR CULBERTSON 138KV GREENFIELD STATION PROJECT

Appendix A Project Maps

Figures 1.1 and 1.2



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ADAMSVILLE (1978), DRESDEN (1978), ZANESVILLE EAST (1978), AND ZANESVILLE WEST (1985), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 03/2020. EXISTING STATIONS/TRANSMISSION LINE DATA, AEP, 2019.

LEGEND

- | | | | |
|--|--------------------|--|----------------------------------|
| | Project Area | | Existing Station |
| | Proposed Station | | Existing 69kV Transmission Line |
| | Municipal Boundary | | Existing 138kV Transmission Line |
| | City Boundary | | |

0 1,000 2,000 4,000 Feet

FIGURE 1.1
PROJECT LOCATION MAP



CULBERTSON STATION
AMERICAN ELECTRIC POWER



DRAWN BY: EFJ
CHECKED: MBW

DATE: 3/11/2020
APPROVED: JJN



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCES: WORLD IMAGERY (CLARITY),
TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED
03/2020.

LEGEND

- Project Area
- Proposed Station
- Proposed Permanent Station Entrance
- Existing Substation
- Existing 138kV Transmission Line

0 150 300 600 Feet

**FIGURE 1.2
PROJECT LAYOUT MAP**

 **CULBERTSON STATION
AMERICAN ELECTRIC POWER** 

DRAWN BY: EFJ
CHECKED: MBW

DATE: 3/11/2020
APPROVED: JJN

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Appendix B PJM Submittal

Need Number: AEP-2019-OH051

Process Stage: Solutions Meeting 02/21/2020

Previously Presented:

Need Meeting 9/25/2019

Supplemental Project Driver:

Customer Service

Specific Assumption Reference:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 7)

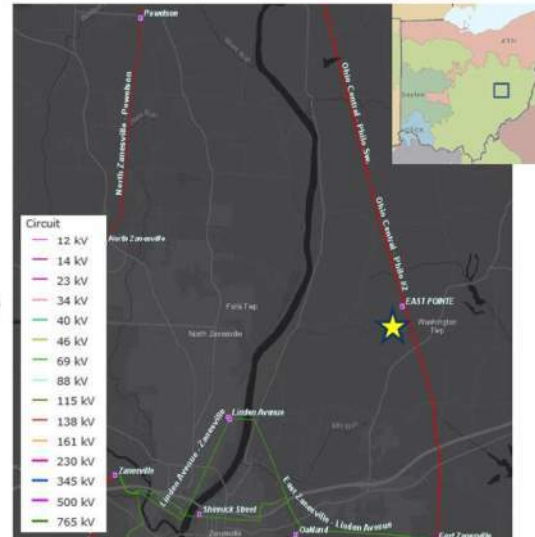
Problem Statement:

Customer Service:

- Peak load: 30MW
- A customer has requested new service on the Ohio Central – Philo #1 138 kV circuit.

Model: 2024 RTEP

AEP Transmission Zone M-3 Process
Culbertson 138kV Greenfield Station



AEP Transmission Zone M-3 Process
Culbertson 138kV Greenfield Station

Need Number: AEP-2019-OH051

Process Stage: Solutions Meeting 02/21/2020

Proposed Solution:

- Install approximately 0.5 Miles of 138kV double circuit line to tie the greenfield Culbertson station to the Ohio Central – Philo #1 138kV circuit. **Estimated Cost: \$1.9M**
- Culbertson 138kV: Install 4 greenfield 138kV 2000A 40kA CBs in a ring bus configuration to serve the new customer station. **Estimated Cost: \$8.0M**

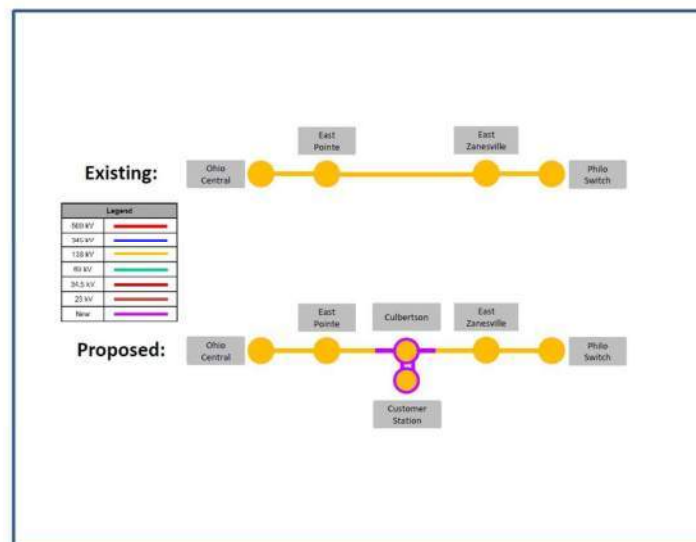
Total Estimated Transmission Cost: \$9.9M

Alternatives Considered:

- No viable cost-effective transmission alternative was identified.

Projected In-Service: 09/01/2020

Project Status: Engineering



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Appendix C Phase I Cultural Resource Investigations Report



In reply, refer to
2020-MUS-47208

January 17, 2020

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

**RE: Long Culbertson 138kV Extension and Station Area Project, Washington Township,
Muskingum County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received on January 13, 2020 regarding the proposed Long Culbertson 138kV Extension and Station Area Project, Washington Township, Muskingum 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 Cultural Resources Management Investigations for the 1.4 km (.9 mi) Long Culbertson 138kV Extension and Station Area in Washington Township, Muskingum 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 cultural resources are located within the project area and no archaeological sites were identified during survey. No historic properties 50 years or older are located within the Area of Potential Effect (APE).

Based on the information provided, we agree the project will not affect historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorricks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Amy Toohey, AEP (ajtoohey@aep.com)

RPR Serial No: 1082325

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Appendix D Ecological Survey Report

Ecological Survey Report

AEP Ohio Transmission Company
AMG Vanadium 138 kV Service Project
Muskingum County, Ohio

GAI Project Number: C170352.94, Task 008

March 2020



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

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

Ecological Survey Report

AEP Ohio Transmission Company
AMG Vanadium 138 kV Service Project
Muskingum County, Ohio

GAI Project Number: C170352.94, Task 008

March 2020

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

Prepared by:
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Project Environmental Specialist

Joshua J. Noble, MS
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 AMG Vanadium 138 kV Service Project (Project) located in Muskingum County, Ohio (OH). The proposed Project involves the install a 0.5-mile double-circuit 138 kV extension (Culbertson 138 kV Extension) from the Ohio Central-Philo 138 kV transmission line to the AMG Vanadium facility. This extension will require the construction of a new substation (Culbertson Station), and the removal of a 0.25-mile section of the Ohio Central-Philo line.

An ecological survey was conducted on February 12, 2020. The Project study area consisted of 9.0 acres, as shown in Figure 1.

The Project study area is located within the Blount Run – Muskingum River (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] #050400040305) watershed.

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

2.0 Methods

2.1 Wetlands

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

2.1.1 Preliminary Data Gathering

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

- ▶ USGS 7.5-minute topographic mapping for Adamsville (USGS, 1978), Dresden (USGS, 1981), Zanesville East (1977), and Zanesville West (1985), OH (Figure 1);
- ▶ United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping (USFWS, 2017) (Figure 2);
- ▶ Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2015) (Figure 2); and
- ▶ United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS, 2017) soil mapping (Figure 2).

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

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

2.1.2 Onsite Inspection

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

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

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

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

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

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

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

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

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

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

2.2 Waterbodies

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

2.2.1 Preliminary Data Gathering

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

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

2.2.2 Onsite Inspection

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

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

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

2.3 Rare, Threatened, and Endangered Species

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

2.3.1 Preliminary Data Gathering

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

2.3.2 Onsite Inspection

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

3.0 Results

3.1 Wetlands

3.1.1 Preliminary Data Gathering

Desktop review of available USFWS NWI digital data for the Project revealed one NWI mapped wetland within the Project study Area. The NWI wetland is classified as a palustrine, unconsolidated bottom, artificially flooded (PUBK) which corresponds to W001 (USFWS, 2017).

According to the USDA-NRCS soil mapping, eight (8) 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

Six (6) wetlands were identified and delineated within the Project study area. Five (5) wetlands are classified as PEM, one wetland is classified as PSS, and one wetland is classified as PUB. 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 six (6) 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

Thirty-three (33) stream segments were identified and delineated within the Project study area. Ten (10) stream segments were classified as having a perennial flow regime, twenty-three (23) were classified as intermittent and ten (10) were classified as ephemeral. 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 ($1.0\text{-}20.0 \text{ mi}^2$) 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 six (6) federally Endangered or Threatened species that may occur within the Project study area (USFWS, 2017). The list of species includes the following:

- ▶ Indiana bat (*Myotis sodalis*) - Endangered;
- ▶ Northern long-eared bat (*Myotis septentrionalis*) - Threatened;
- ▶ Fanshell (*Cyprogenia stegaria*) - Endangered;
- ▶ Rabbitsfoot (*Quadrula cylindrica cylindrica*) – Threatened;
- ▶ Sheepnose Mussel (*Plethobasus cyphus*) – Endangered; and
- ▶ Snuffbox Mussel (*Epioblasma triquetra*) – Endangered

In addition to the species listed above, there are nine (9) migratory bird species that may occur within the Project study area.

3.3.2 Onsite Inspection

Potential habitat for RTE species was evaluated within the Project study area. In general, the habitat encountered within the study area consisted of maintained transmission line right-of-way, open field, and PEM wetlands. Two intermittent and one ephemeral streams were identified within the study area. Representative photographs of the identified habitat types are included in Appendix A.

3.3.3 Regulatory Discussion

State-listed RTE species fall under the jurisdiction of the ODNR, Division of Wildlife, while federally-listed species are covered under Section 7 of the Endangered Species Act. The Bald and Golden Eagle Protection Act and Migratory Bird Act aim to extend protection to certain bird species that fall under the jurisdiction of the USFWS. Based on the desktop review and onsite inspection, informal consultation with the ODNR and USFWS has been initiated to determine if any activities associated with the proposed Project may affect state- and/or federally-listed RTE species. The ODNR and USFWS consultation letters were submitted on February 20, 2020. The ODNR and USFWS responses will be appended when received.

4.0 Conclusions

An ecological survey was conducted within the Project study area on February 12, 2020. Three streams (one ephemeral and two intermittent) were identified within the Project study area. Six 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	Size ⁵ (acres)	ORAM v. 5.0 Score ⁶	ORAM Category ⁷	Figure 2 (sheet)
W001-PEM-CAT1	39.981754	-81.957768	UNT to Muskingum River	Jurisdictional; Adjacent	PEM	0.199753	25	1	1
W001-PUB-CAT1	39.982146	-81.956539	UNT to Muskingum River	Jurisdictional; Adjacent	PUB	3.398541			1
W002-PEM-CAT1	39.982805	-81.958279	UNT to Muskingum River	Jurisdictional; Abutting	PEM	0.041914	20	1	1
W003-PEM-CAT1	39.983591	-81.949765	UNT to Muskingum River	Jurisdictional; Adjacent	PEM	0.172361	26	1	1
W004-PEM-CAT1	39.981599	-81.949027	UNT to Muskingum River	Jurisdictional; Adjacent	PEM	0.303428	15	1	1
W005-PSS-CAT1	39.98125	-81.948515	UNT to Muskingum River	Jurisdictional; Abutting	PSS	0.041007	29	1	1
W006-PEM-CAT1	39.980157	-81.948692	UNT to Muskingum River	Jurisdictional; Abutting	PEM	0.031047	17	1	1

Notes:

- ¹ GAI map designation.
- ² North American Datum, 1983.
- ³ 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
- ⁵ Total acreage of wetland located within the Project study area.
- ⁶ 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.
- ⁷ 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 Classification ⁴	HHEI Score ⁵	PHWH Class ⁵	QHEI Score ⁶	Width (feet) ⁷	OHWM Width (feet)	OHWM Depth (inches)	Stream Length ⁸ (feet)	Latitude ⁹	Longitude ⁹	Figure 2 (sheet)
S001	UNT to Muskingum River	-	Possibly Eligible	Ephemeral	NRPW	26	Class I	-	3	2	4	254.549366	39.982019	-81.951357	1
S002	UNT to Muskingum River	-	Possibly Eligible	Intermittent	RPW	26	Class I	-	3	2	4	56.558495	39.983495	-81.950213	1
S003	UNT to Muskingum River	-	Possibly Eligible	Intermittent	RPW	57	Class II	-	6	5	6	493.020414	39.980402	-81.948309	1

Notes:117

- ¹GAI map designation.
- ²As 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.
- ³As 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).
- ⁴Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process. RPW - Relatively Permanent Waters.
- ⁵Scoring 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.
- ⁶Narrative 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.
- ⁷Width in feet from tops of stream bank.
- ⁸Total stream length (in feet) located within the Project study area.
- ⁹North American Datum, 1983.

Table 3
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	<i>Cryptobranchus alleganiensis</i>	Flooded agricultural fields or other water-holding depressions, underground burrows	E, FSC	No	No; Known habitat types are not present within the Project area	-
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	Areas of sandy soils associated with river valleys. Flooded agricultural fields or other water-holding depressions, underground burrows.	E	Yes	No; Known habitat types are not present within the Project area	-
Bats						
Indiana bat	<i>Myotis sodalis</i>	Trees >3" dbh	E, FE	Yes	No; Known habitat types are not present within the Project area	April 1 to September 30
Northern long-eared bat	<i>Myotis septentrionalis</i>	Roost sites can be trees, caves, and mines	FT	Yes	No; Known habitat types are not present within the Project area	April 1 to September 30
Dragonflies						
Plains Clubtail	<i>Gomphus externus</i>	Sandy, gravelly or muddy streams and rivers with moderate current and grassy or wooded banks.	E	No	No; Known habitat types are not present within the Project area	-
Tiger Spiketail	<i>Cordulegaster erronea</i>	Depositional headwater streams. Juveniles in spring seepages and large streams or at low elevations. Adults in river/stream/riparian/floodplain corridors. Sandy substrate, silt, detritus, slow gradient, rock and soft substrates in headwater streams.	SC	No	No; Known habitat types are not present within the Project area	-
Fish						

Common Name	Scientific Name	Habitat Type	Listing Status ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
<i>Fish (continued)</i>						
Noturus stigmosus	<i>Northern Madtom</i>	Deep swift riffles of large rivers, around cobbles or boulders.	E	No	No; Known habitat types are not present within the Project area	-
American Eel	<i>Anguilla rostrata</i>	Moderate or large rivers with continuous flow and moderately clear water. Prefer deep pools with cover for hiding	T	No	No; Known habitat types are not present within the Project area	-
Blue Sucker	<i>Cycleptus elongatus</i>	Deep, swiftly flowing chutes or channels of large rivers	T	No	No; Known habitat types are not present within the Project area	-
Blue Catfish	<i>Ictalurus furcatus</i>	Very large rivers, prefer to feed in areas with swift currents	SC	No	No; Known habitat types are not present within the Project area	-
<i>Mussels</i>						
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	Large streams and small rivers	E, FE	No	No; Known habitat types are not present within the Project area	-
Long-solid	<i>Fusconaia maculata maculata</i>	Large or small rivers with gravel substrate	E	No	No; Known habitat types are not present within the Project area	-
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Medium to large rivers and streams with moderate gradient and riffles	E, FT	No	No; Known habitat types are not present within the Project area	-
Snuffbox	<i>Epioblasma triquetra</i>	Medium to large rivers in mud, sand, or gravel	E, FE	No	No; Known habitat types are not present within the Project area	-
Pocketbook	<i>Lampsilis ovata</i>	Impoundments and free-flowing, shallow rivers. Can be found in streams as shallow as 0.6m. Prefers moderate to strong current but can be found in standing water. Prefers gravel and coarse sand mixed with silt or mud	E	No	No; Known habitat types are not present within the Project area	-
Ohio Pigtoe	<i>Pleurobema cordatum</i>	Large rivers with strong currents, in sand and gravel.	E	No	No; Known habitat types are not present within the Project area	-

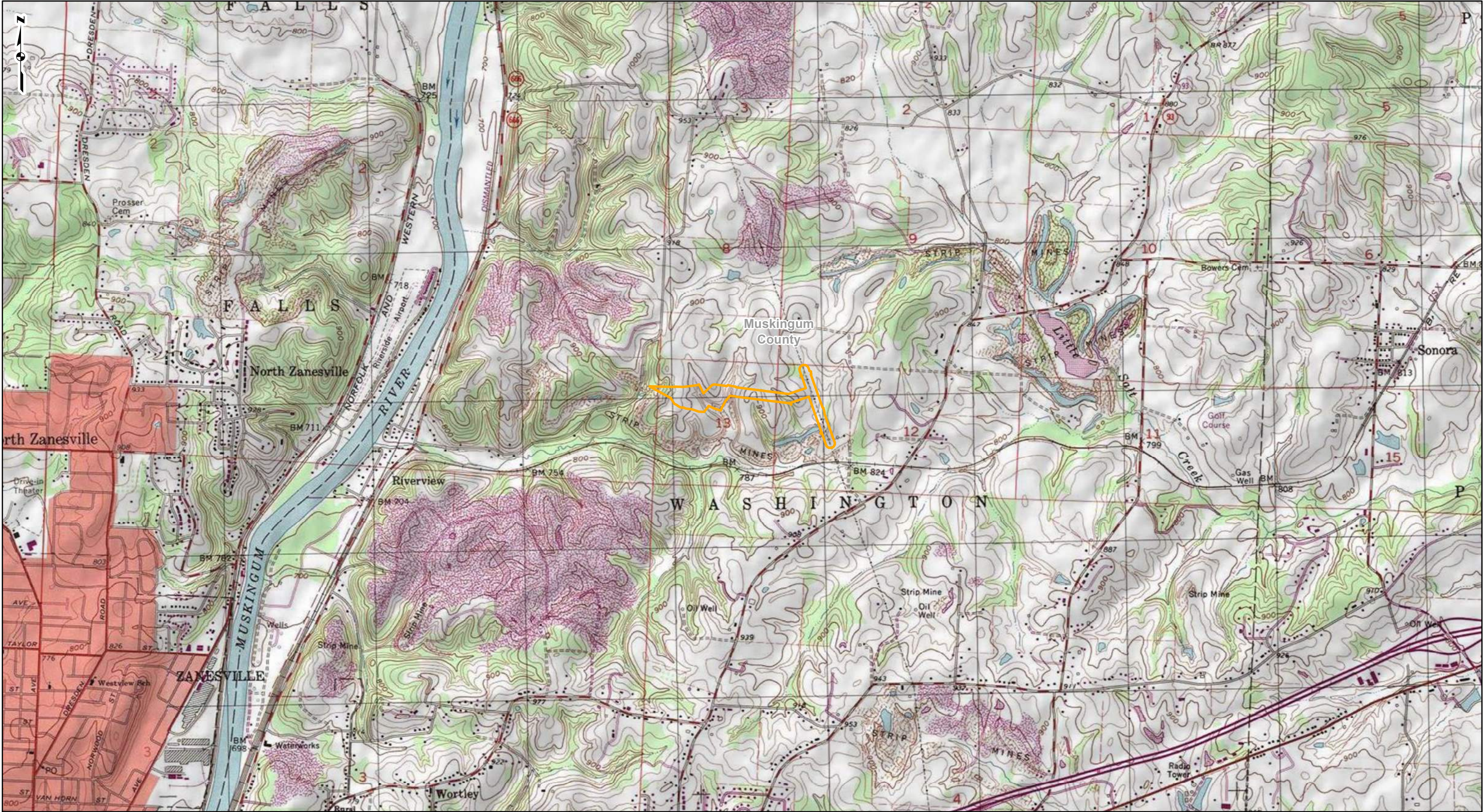
Common Name	Scientific Name	Habitat Type	Listing Status ¹	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Mussels (continued)						
Pyramid Pigtoe	<i>Pleurobema rubrum</i>	Medium to large rivers with low to moderate gradient. Riffles or shoals in shallow water, and in coarse-particle substrates, along sand bars, or in deep water with stable mud and muddy sandy bottoms. Moderate to swift currents.	E	No	No; Known habitat types are not present within the Project area	-
Rayed Bean	<i>Villosa fabalis</i>	Small, headwater streams and large rivers and wave-washed areas of glacial lakes. Gravel or sand substrates, around roots of aquatic vegetation.	E, FE	No	No; Known habitat types are not present within the Project area	-
Black Sandshell	<i>Ligumia recta</i>	Rivers with strong currents and lakes with firm substrate of gravel or sand.	T	No	No; Known habitat types are not present within the Project area	-
Threehorn Wartyback	<i>Obliquaria reflexa</i>	Medium to large rivers, with slackwater conditions to swift currents and gravel to muddy sand.	T	No	No; Known habitat types are not present within the Project area	-
Fawnsfoot	<i>Truncilla donaciformis</i>	Small to large rivers and lakes with firm gravel or sand substrates.	T	No	No; Known habitat types are not present within the Project area	-
Purple Wartyback	<i>Cyclonaias tuberculata</i>	Medium to large rivers with gravel	SC	No	No; Known habitat types are not present within the Project area	-
Creek Heelsplitter	<i>Lasmigona compressa</i>	Headwaters of small or medium rivers in fine gravel or sand	SC	No	No; Known habitat types are not present within the Project area	-
Fanshell	<i>Cyprogenia stegaria</i>	Medium to large rivers in sand or gravel in deep water of moderate current.	E, FE	No	No; Known habitat types are not present within the Project area	-
Sheepnose	<i>Plethobasus cyphus</i>	Large rivers and streams, in shallow areas with moderate to swift currents and coarse sand and gravel.	E, FE	No	No; Known habitat types are not present within the Project area	-
Reptiles						

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 (continued)						
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	Woodlands with sandy soils, fields, farmland and coastal areas.	SC	No	No; Known habitat types are not present within the Project area	-
Birds						
Northern Harrier	<i>Circus hudsonius</i>	Marshes, fields, and prairies. Open terrain, both wet and dry habitats, with good cover. Marshes and sometimes dry open fields.	E	No	No; Known habitat types are not present within the Project area	-
Trumpeter Swan	<i>Cygnus buccinator</i>	Lakes, ponds, large rivers, and bays. Large but shallow freshwater ponds and wide, slow-flowing rivers with ample vegetation. Mainly in forested regions.	T	No	No; Known habitat types are not present within the Project area	-
Bewick's Wren	<i>Thryomanes bewickii</i>	Thickets, underbrush, and gardens. Mainly bushy areas around the edges of woods.	EX	No	No; Known habitat types are not present within the Project area	-

Notes:

- ¹ 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.
- ² Natural Heritage Database record at or within a one-mile radius of the Project area.
- ³ ODNR, Division of Wildlife (DOW) comments included in the ODNR response, dated May 20, 2019.
- ⁴ Federally listed species, migratory bird, or species of concern comments included in the USFWS response, dated April 18, 2019.

FIGURES



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: DRESDEN (1978), ZANESVILLE WEST (1985), ADAMSVILLE (1978), AND ZANESVILLE EAST (1977), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 02/2020.

LEGEND

- Study Area
- County Boundary



FIGURE 1
PROJECT LOCATION MAP

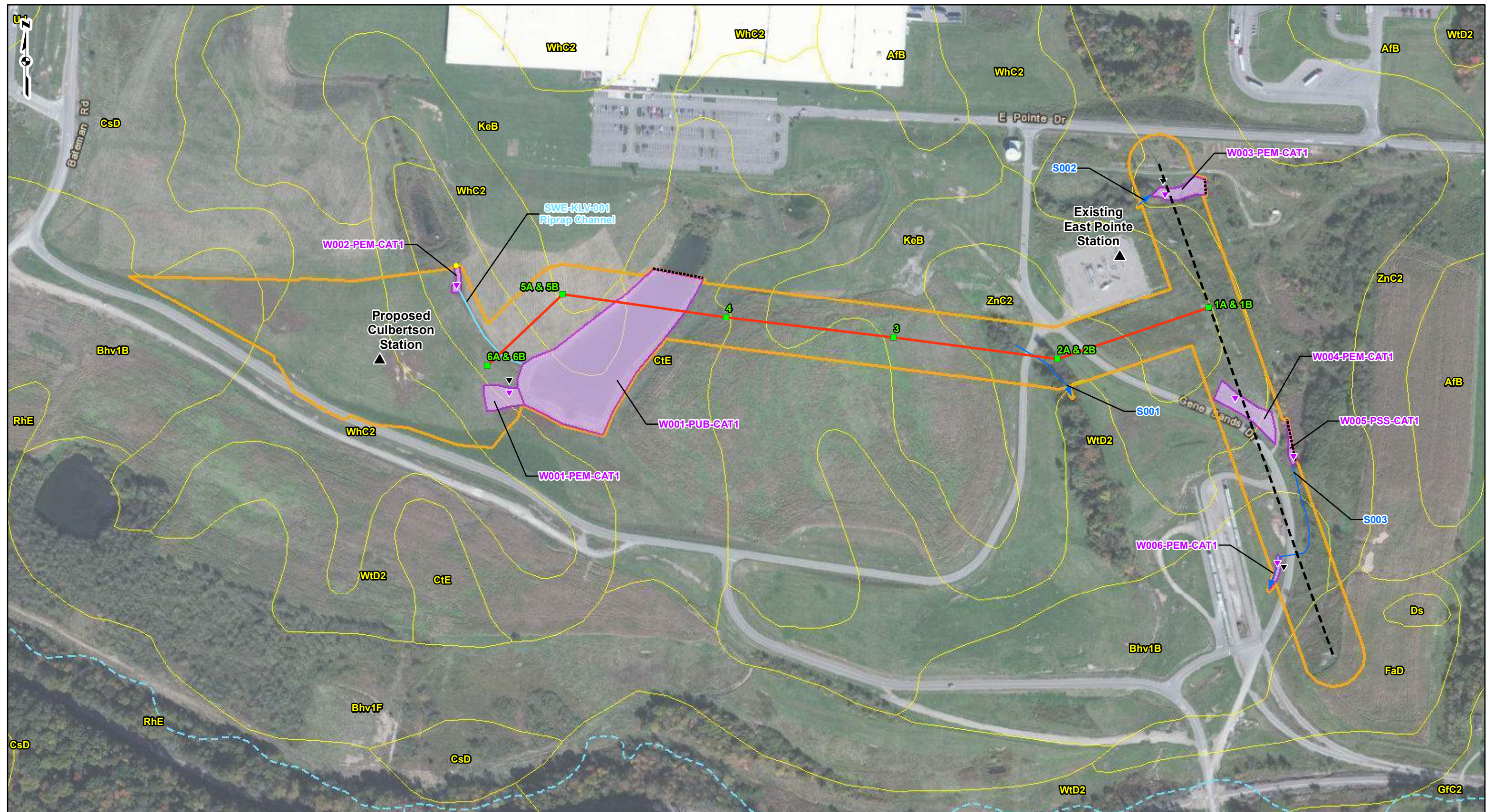


CULBERTSON 138 KV LINE EXTENSION
AND AMG METERING STATION
AMERICAN ELECTRIC POWER



DRAWN BY: KJB
CHECKED: EFJ

DATE: 2/24/2020
APPROVED:



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCES: ESRI WORLD IMAGERY (CLARITY), ARCGIS ONLINE, 2017, ACCESSED 03/2020. WORLD TRANSPORTATION, ESRI, DELORME, HERE, MAPMYINDIA, TOMTOM, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY, OBTAINED THROUGH ESRI ARCGIS ONLINE, ACCESSED 03/2020. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2018. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2019. NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2018. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE FOR MUSKINGUM COUNTY, OHIO, USDA/NRCS, 2018.

LEGEND

- | | | | |
|------------------------------|---------------------|-----------------------|----------------------|
| ▲ Station | ▼ Upland Data Point | — Stormwater Erosion | — NHD Stream |
| ■ Proposed Structure | ▼ Upland Data Point | — Open-Ended Boundary | — Soil Type Boundary |
| — Existing Transmission Line | ● Culvert Point | — Wetland | — NWI Wetland |
| — Proposed Transmission Line | → Stream | — Study Area | — FEMA Floodplain |

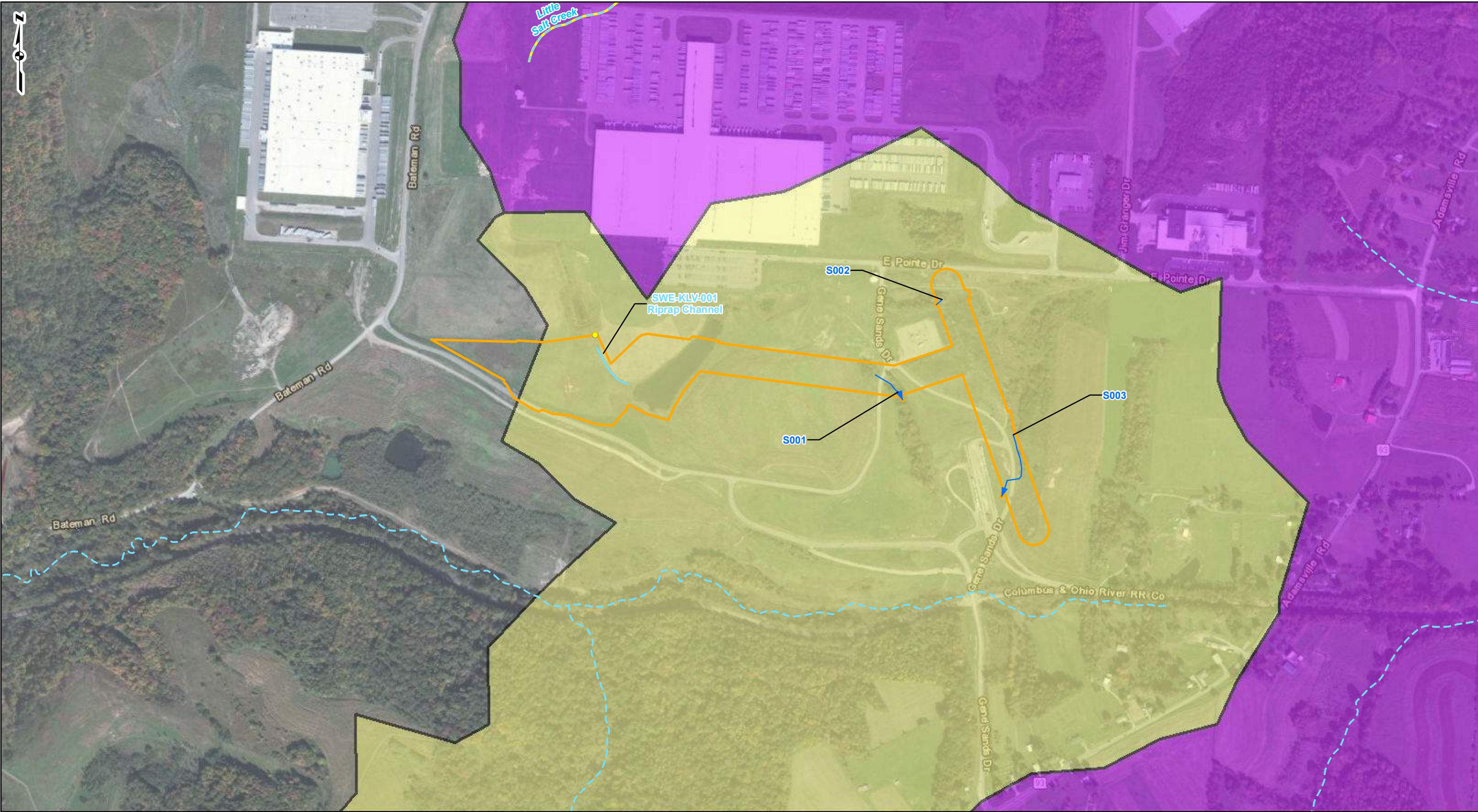
0 150 300 600 Feet

FIGURE 2 RESOURCE LOCATION MAP

CULBERTSON 138 kV LINE EXTENSION
AND AMG METERING STATION
AMERICAN ELECTRIC POWER

DRAWN BY: KJB
CHECKED: EFJ

DATE: 3/3/2020
APPROVED:



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCES: ESRI WORLD IMAGERY (CLARITY), ARCGIS ONLINE, 2017, ACCESSED 03/2020. WORLD TRANSPORTATION, ESRI, DELORME, HERE, MAPMYINDIA, TOMTOM, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY, OBTAINED THROUGH ESRI ARCGIS ONLINE, ACCESSED 03/2020. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2018. STREAM ELIGIBILITY, OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA), 2017. WQS STREAMS, OHIO WATER QUALITY STANDARDS (WQS), 2010.

LEGEND

- Culvert Point
- ➔ Stream
- Stormwater Erosion

- NHD Stream
- OH WQS Stream
- Study Area

OH EPA Stream Eligibility

- Eligible
- Ineligible
- Possibly Eligible

0 300 600 1,200 Feet

FIGURE 3
STREAM ELIGIBILITY MAP



CULBERTSON 138 KV LINE EXTENSION
AND AMG METERING STATION
AMERICAN ELECTRIC POWER



DRAWN BY: KJB
CHECKED: EFJ

DATE: 3/3/2020
APPROVED:

APPENDIX A

Photographs



Photograph 1. Wetland W001-PEM-CAT1, Facing East



Photograph 2. Wetland W001-PEM-CAT1, Facing West



Photograph 3. Wetland W001-PUB-CAT1 Facing North



Photograph 4. Wetland W001-PUB-CAT1, Facing West



Photograph 5. Wetland W002-PEM-CAT1, Facing South



Photograph 6. Wetland W002-PEM-CAT1, Facing North



Photograph 7. Wetland W003-PEM-CAT1, Facing East



Photograph 8. Wetland W003-PEM-CAT1, Facing West



Photograph 9. Wetland W004-PEM-CAT1, Facing East



Photograph 10. Wetland W004-PEM-CAT1, Facing South



Photograph 11. Wetland W005-PSS-CAT1, Facing North



Photograph 12. Wetland W005-PSS-CAT1, Facing East



Photograph 13. Wetland W006-PEM-CAT1, Facing South



Photograph 14. Wetland W006-PEM-CAT1, Facing East



Photograph 15. Stream S001, Upstream, Facing Northwest



Photograph 16. Stream S001, Downstream, Facing Southeast



Photograph 17. Stream S002, Upstream, Facing West



Photograph 18. Stream S002, Downstream, Facing East



Photograph 19. Stream S003, Upstream, Facing North



Photograph 20. Stream S003, Downstream, Facing South



Photograph 81. Representative upland habitat, Facing North



Photograph 82. Representative upland habitat, Facing West

APPENDIX B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co Sampling Date: 2/12/2020
 Applicant/Owner: ATP State: OH Sampling Point: WOH-KLV-001
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp. WOH-PEM-CAT1
 Landform (hillslope, terrace, etc.): Depression/Slope Local relief (concave, convex, none): concave/convex Slope (%): 0.1
 Subregion (LRR or MLRA): LRKN Lat: 39.981787 Long: -81.957474 Datum: NAD83
 Soil Map Unit Name: CTE-Cashoan Westmoreland Silt loam 25-40% Slope NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation Y, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for WOH-KLV-001 (PEM/PUB).</u> <u>Data taken in open field on strip mine site.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>5"</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology Indicators are A1, A2, A3, C3, D2 and D5.</u>		

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

 Sampling Point: W011-KLV-a>1

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Sapling Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Shrub Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Herb Stratum (Plot size: <u>5'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Scirpus cyperinus</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>
2. <u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
3. <u>Eupatorium perfoliatum</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4. <u>Typha x glauca</u>	<u>15</u>	<u>N</u>	<u>Obl</u>
5. <u>Verbena hastata</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
6. <u>Epilobium coloratum</u>	<u>5</u>	<u>N</u>	<u>FACW</u>
7. <u>Mimulus alatus</u>	<u>5</u>	<u>N</u>	<u>Obl</u>
8.			
9.			
10.			
11.			
<u>100</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Woody Vine Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

SOIL

Sampling Point: WQH-KLV-001

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-002
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp. WOH2-PEM-CAT1
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0.1
 Subregion (LRR or MLRA): LRRN Lat: 39.98276 Long: -81.958285 Datum: NAD 83
 Soil Map Unit Name: CHE Cohesion Westmoreland Silt loam 25-40/Slope NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for WOH-KLV-002 (PEM).</u> <u>Data taken within open field on strip mine site.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ 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)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1)
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>5"</u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☐ No ☒ Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology indicators are A1, D2 and D5.</u>		

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

 Sampling Point: W011-KLV-002

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: <u>5'r</u>)			
1. <u>Leersia oryzoides</u>	<u>40</u>	<u>y</u>	<u>Obl</u>
2. <u>Juncus effusus</u>	<u>20</u>	<u>y</u>	<u>FACW</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
<u>60</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

SOIL

Sampling Point: WOH-KLV002

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: W01-KLV-001
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp.
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 07
 Subregion (LRR or MLRA): LRR N Lat: 39.981897 Long: -81.951672 Datum: NAD83
 Soil Map Unit Name: C1E-Cashden Westmoreland Silty loams 25-40% Slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)
 Are Vegetation Y, Soil N, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: <u>Upland data for 001 + 002.</u> <u>Data taken in open field on strip mine site.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ 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:		
Remarks: <u>Wetland hydrology is not present.</u>		

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

Sampling Point: W04-KLV-001 + 002

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: <u>5'r</u>)			
1. <u>Dactylis glomerata</u>	<u>45</u>	<u>y</u>	<u>Facu</u>
2. <u>Dipsacus fullonum</u>	<u>20</u>	<u>y</u>	<u>Facu</u>
3. <u>Solidago canadensis</u>	<u>20</u>	<u>y</u>	<u>Facu</u>
4. <u>Andropogon virginicus</u>	<u>15</u>	<u>N</u>	<u>Facu</u>
5.			
6.			
7.			
8.			
9.			
10.			
11.			
<u>100</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes _____ No ✓

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

Sampling Point: W04-KLV-001

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

Indicators for Problematic Hydric Soils³:

- ☐ 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)

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

Hydric Soil Present? Yes _____ No ✓

Hydric Soils are not present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-003
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp WOH-PEM-CAT1
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0.1
 Subregion (LRR or MLRA): LRR N Lat: 39.933538 Long: -81.949967 Datum: NAD83
 Soil Map Unit Name: WHDZ-Westmorland Silty loam 15-25% Slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation Y, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for WOH-KLV-003 (PEM).</u> <u>Data taken within open field / transmission line ROW.</u>	

HYDROLOGY

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

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

 Sampling Point: WAT-KLV-003

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot size: <u>15'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: <u>5'r</u>)			
1. <u>Leersia oryzoides</u>	<u>45</u>	<u>Y</u>	<u>Obl</u>
2. <u>Typha x glauca</u>	<u>20</u>	<u>Y</u>	<u>Obl</u>
3. <u>Persicaria sagittatum</u>	<u>20</u>	<u>Y</u>	<u>Obl</u>
4. <u>Juncus effusus</u>	<u>10</u>	<u>N</u>	<u>Facw</u>
5. <u>Epilobium coloratum</u>	<u>5</u>	<u>N</u>	<u>Facw</u>
6.			
7.			
8.			
9.			
10.			
11.			
<u>100</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30'r</u>)			
1. <u>none</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes ☒ No ☐

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

SOIL

Sampling Point: WOH-KLV-003

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

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

Hydric Soil Indicators:

- | | |
|---|---|
| ☐ Histosol (A1) | ☐ Dark Surface (S7) |
| ☐ Histic Epipedon (A2) | ☐ Polyvalue Below Surface (S8) (MLRA 147, 148) |
| ☐ Black Histic (A3) | ☐ Thin Dark Surface (S9) (MLRA 147, 148) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☒ Depleted Matrix (F3) |
| ☐ 2 cm Muck (A10) (LRR N) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Umbric Surface (F13) (MLRA 136, 122) |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 148) |
| ☐ Stripped Matrix (S6) | ☐ Red Parent Material (F21) (MLRA 127, 147) |

Indicators for Problematic Hydric Soils³:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Meets F3.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-003
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp.
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0.1
 Subregion (LRR or MLRA): LRRN Lat: 39.983662 Long: -81.949989 Datum: NAD83
 Soil Map Unit Name: WHDZ-Westmoreland Silt/loam 15-25% Slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	
Remarks: <u>Upland data for WOH-KLV-003</u> <u>Data taken within open field / transmission line ROW.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ 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:		
Remarks: <u>Wetland hydrology is not present.</u>		

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

 Sampling Point: W04-KLV-003

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Sapling Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: <u>5'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Dactylis glomerata</u>	<u>70</u>	<u>Y</u>	<u>FACU</u>
2. <u>Glechoma hederacea</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3. <u>Rubus allegheniensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

100 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Hydrophytic Vegetation Present?

Yes _____ No ☒

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

SOIL

Sampling Point: NOH-KLV-003

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-004
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp. WOH-Pem-C AT1
 Landform (hillslope, terrace, etc.): Depression/Slope Local relief (concave, convex, none): concave/convex Slope (%): 0.7
 Subregion (LRR or MLRA): LRBN Lat: 39.931693 Long: -81.949158 Datum: NAD83
 Soil Map Unit Name: ZnCL-Zanesville Silt loam 8 to 15% slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation Y, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for WOH-KLV-004 (PEM).</u> <u>Data taken within open field / transmission line ROW.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>1.5"</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology indicators are A1, A2, A3, C3, D2 and D5.</u>		

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

 Sampling Point: NOH-KLV-004

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: <u>5'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>y</u>	<u>FACW</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

100 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			

0 = Total Cover

50% of total cover: _____ 20% of 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 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

SOIL

Sampling Point: W011-KLV-004

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: W011-KLV-005
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp. WC05-P55-CAT1
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0.1
 Subregion (LRR or MLRA): LRR N Lat: 39.981167 Long: -81.948477 Datum: NAD83
 Soil Map Unit Name: W012-Westmoreland Silt loam 15-25% slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for W011-KLV-005(P55)</u> <u>Data taken within shrub area next to roadside.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ 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:		
Remarks: <u>Wetland hydrology indicators are A1, A2, A3, C3, D2, and D5.</u>		

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

 Sampling Point: W01H-KLV-005

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
2.			
3.			
4.			
5.			
6.			
<u>10</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot size: <u>30'r</u>)			
1. <u>Salix nigra</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
2.			
3.			
4.			
5.			
6.			
<u>10</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot size: <u>30'r</u>)			
1. <u>Salix nigra</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>
2.			
3.			
4.			
5.			
6.			
<u>50</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: <u>5'r</u>)			
1. <u>Typha x glauca</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>
2. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>
3. <u>Agrimonia parviflora</u>	<u>10</u>	<u>N</u>	<u>FACW</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
<u>60</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30'r</u>)			
1. <u>None</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

 Yes ☒ No ☐

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

SOIL

Sampling Point: NOH-KLV-005

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils³:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Meets F3.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-006
 Investigator(s): KLV, CDK Section, Township, Range: Washington Twp. WOH-PEM-CATI
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0.7
 Subregion (LRR or MLRA): LRR N Lat: 39.980209 Long: -81.948674 Datum: NAD83
 Soil Map Unit Name: BhviB-BethesdaSilt-Loam 0-8% Slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks: <u>Wetland data for WOH-KLV-006 (PEM).</u> <u>Data taken within open lawn next to Road.</u>	

HYDROLOGY

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

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

 Sampling Point: NOH-KV-004

Tree Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Sapling Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Shrub Stratum (Plot size: <u>15'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Herb Stratum (Plot size: <u>5'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Typha x glauca</u>	<u>35</u>	<u>✓</u>	<u>Obl</u>
2. <u>Phalaris arundinacea</u>	<u>45</u>	<u>✓</u>	<u>Facw</u>
3. <u>Verbena hastata</u>	<u>20</u>	<u>✓</u>	<u>Facw</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
<u>100</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Woody Vine Stratum (Plot size: <u>30'r</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
<u>0</u> = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

SOIL

Sampling Point: W04-KLV-000

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

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

Hydric Soil Indicators:

- | | |
|---|---|
| ☐ Histosol (A1) | ☐ Dark Surface (S7) |
| ☐ Histic Epipedon (A2) | ☐ Polyvalue Below Surface (S8) (MLRA 147, 148) |
| ☐ Black Histic (A3) | ☐ Thin Dark Surface (S9) (MLRA 147, 148) |
| ☐ Hydrogen Sulfide (A4) | ☒ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☒ Depleted Matrix (F3) |
| ☐ 2 cm Muck (A10) (LRR N) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Umbric Surface (F13) (MLRA 136, 122) |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 148) |
| ☐ Stripped Matrix (S6) | ☐ Red Parent Material (F21) (MLRA 127, 147) |

Indicators for Problematic Hydric Soils³:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

Meets F3.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Culbertson City/County: Muskingum Co. Sampling Date: 2/12/2020
 Applicant/Owner: AEP State: OH Sampling Point: WOH-KLV-004
 Investigator(s): KLV, CDK Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 01.
 Subregion (LRR or MLRA): LRBN Lat: 39.98017 Long: -81.948001 Datum: NAD83
 Soil Map Unit Name: Bhv1B-Perthasda Silt loam, 0-8% slopes NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: <u>Upland data for 004, 005, 006.</u> <u>Data taken with mowed lawn-roadside.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift Deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No ☒ Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology indicators are not present.</u>		

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

Sampling Point: W01-KLV-004
005
006

Tree Stratum (Plot size: 30'r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15'r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15'r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5'r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pod pratensis</u>	<u>70</u>	<u>Y</u>	<u>FacV</u>
2. <u>Plantago lanceolata</u>	<u>20</u>	<u>Y</u>	<u>FacV</u>
3. <u>Dipsacus fullonum</u>	<u>10</u>	<u>N</u>	<u>FacV</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

100 = Total Cover

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: 30'r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			

0 = Total Cover

50% of total cover: _____ 20% of total cover: _____

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes _____ No ✓

SOIL

Sampling Point: <u>W04-KLV-</u>	004
ators.)	005
Remarks	006

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

[illegible]

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

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (**LRR N**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- ___ Thin Dark Surface (S9) (**MLRA 147, 148**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- ___ Umbric Surface (F13) (**MLRA 136, 122**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- ___ Red Parent Material (F21) (**MLRA 127, 147**)

Indicators for Problematic Hydric Soils³:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

Hydric Soils are not present.

APPENDIX C

Primary Headwater Habitat Evaluation (HHEI/QHEI) Data Forms



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

26

SITE NAME/LOCATION AFP-Culbertson
SITE NUMBER 5001 RIVER BASIN 050400040305 RIVER CODE _____ DRAINAGE AREA (m²) 41sqmi
LENGTH OF STREAM REACH (ft) 254 LAT 39.982019 LONG 81.951357 RIVER MILE _____
DATE 2/12/20 SCORER KLV COMMENTS SOH-KLV-001 (FPH)

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

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

1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				HHEI Metric Points Substrate Max = 40 16 A + B
TYPE	PERCENT	TYPE	PERCENT	
☐ BLDR SLABS [16 pts] ☐ BOULDER (>256 mm) [16 pts] ☐ BEDROCK [16 pts] ☐ COBBLE (65-256 mm) [12 pts] ☒ GRAVEL (2-64 mm) [9 pts] ☐ SAND (<2 mm) [6 pts]	_____ _____ _____ <u>20</u> <u>15</u>	☒ SILT [3 pt] ☐ LEAF PACK/WOODY DEBRIS [3 pts] ☐ FINE DETRITUS [3 pts] ☐ CLAY or HARDPAN [0 pt] ☐ MUCK [0 pts] ☐ ARTIFICIAL [3 pts]	<u>30</u> <u>15</u> _____ _____ _____	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) 12		(B) 4		
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 feet) 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 5
☐ > 30 centimeters [20 pts] ☐ > 22.5 - 30 cm [30 pts] ☐ > 10 - 22.5 cm [25 pts] ☐ 5 cm - 10 cm [15 pts] ☒ < 5 cm [5 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]				
COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <u>45</u>				
3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):				Bankfull Width Max=30 5
☐ > 4.0 meters (> 13') [30 pts] ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]				
COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) <u>3'</u>				

This information must also be completed

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

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

COMMENTS _____

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

☐ Stream Flowing
☐ Subsurface flow with isolated pools (interstitial)
☒ Moist Channel, isolated pools, no flow (intermittent)
☐ Dry channel, no water (ephemeral)

COMMENTS _____

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

☐ None
☒ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Muskingum River Distance from Evaluated Stream 2.0 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Zanesville East NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Muskingum Co. Township/City: Washington Twp./Zanesville

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/11/2020 Quantity: <1"

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

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

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

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

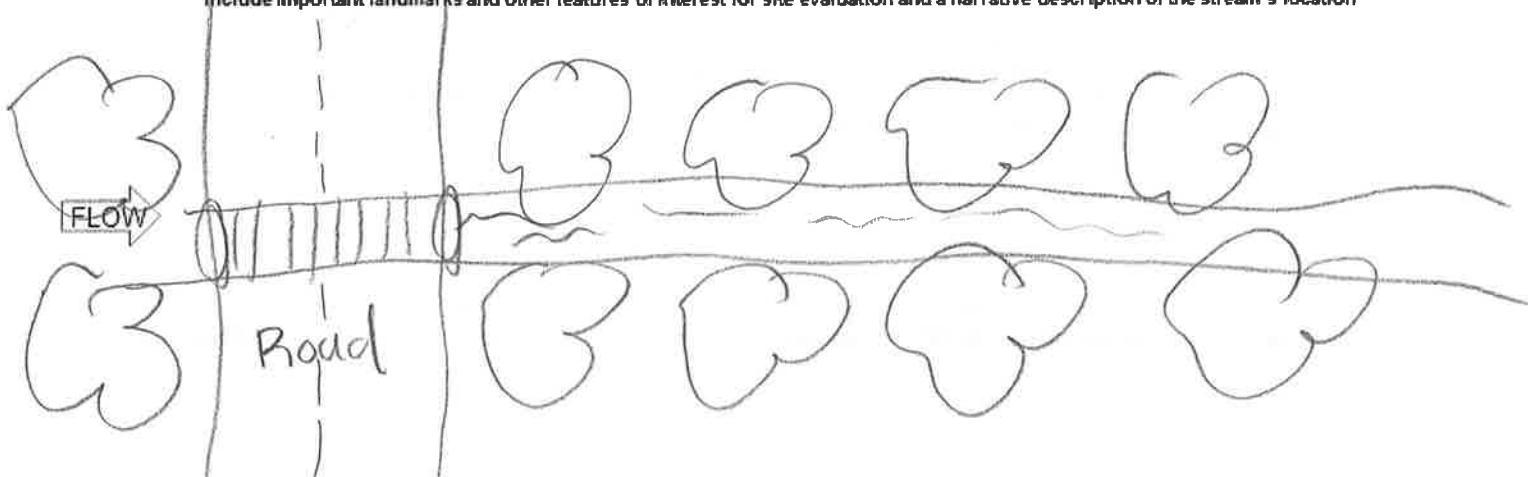
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

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





Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

24

SITE NAME/LOCATION AFP-Culbertson
SITE NUMBER 5002 RIVER BASIN 050400040305 RIVER CODE _____ DRAINAGE AREA (mi²) 4.59
LENGTH OF STREAM REACH (ft) 56 LAT 39.983495 LONG -81.950213 RIVER MILE _____
DATE 2/2/20 SCORER KLV COMMENTS SOH-KLV-002 (INT)

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

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

1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.				HHEI Metric Points Substrate Max = 40 16 A + B																											
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SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: <u>12</u> TOTAL NUMBER OF SUBSTRATE TYPES: <u>4</u>																															
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COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): <u>3'</u>																															

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
☐	☐	☐	☐
☒	☒	☐	☐
☐	☐	☐	☒
☐	☐	☐	☐

COMMENTS _____

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)	☐ Dry channel, no water (ephemeral)

COMMENTS _____

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

☐ None	☒ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 %/100 ft)	☒ Flat to Moderate	☐ Moderate (2 %/100 ft)	☐ Moderate to Severe	☐ Severe (10 %/100 ft)
--	--	--	---	---

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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Muskingum River Distance from Evaluated Stream 2.0 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Zanesville East NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Muskingum Co. Township/City: Washington Twp./Zanesville

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/11/2020 Quantity: <1"

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

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

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

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

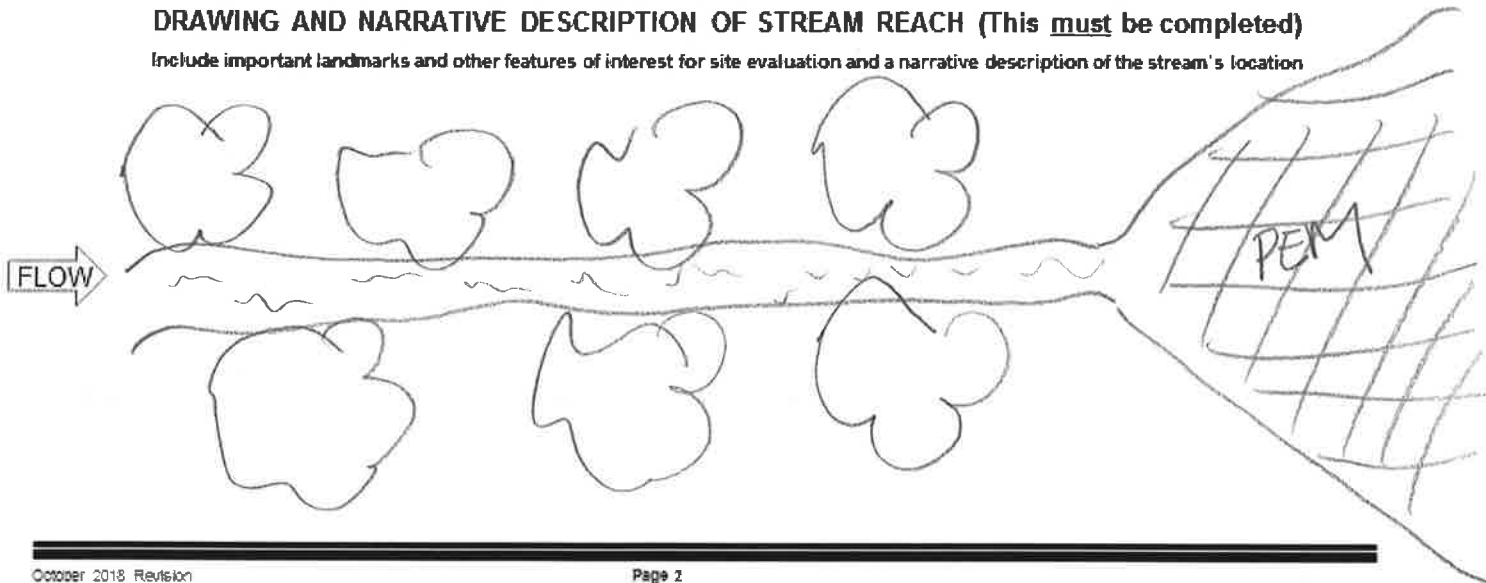
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

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





Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

57

SITE NAME/LOCATION ATP-Culbertson
SITE NUMBER 5003 RIVER BASIN 050400040205 RIVER CODE _____ DRAINAGE AREA (mi²) 459.1
LENGTH OF STREAM REACH (ft) 493 LAT 39.980402 LONG -81.948309 RIVER MILE _____
DATE 2/12/20 SCORER KLV COMMENTS 504-KLV-003

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

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

1. SUBSTRATE (Estimate percent of every type present). Check <u>ONLY</u> two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B		HHEI Metric Points Substrate Max = 40 12 A + B																												
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Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) <u>9</u> (B) <u>3</u>																														
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: <u>9</u> TOTAL NUMBER OF SUBSTRATE TYPES: <u>3</u>																														
2. Maximum Pool Depth (Measure the <u>maximum</u> pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <u>ONLY</u> one box):		Pool Depth Max = 30 15																												
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COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <u>10</u>																														
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COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): <u>6'</u>																														

This information must also be completed

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

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

COMMENTS _____

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)	☐ Dry channel, no water (ephemeral)

COMMENTS _____

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

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S):

☒ WWH Name: Muskingum River Distance from Evaluated Stream 20 miles
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Zanesville East NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Muskingum Co. Township/City: Washington Twp. / Zanesville

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/11/20 Quantity: <1"

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

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

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

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

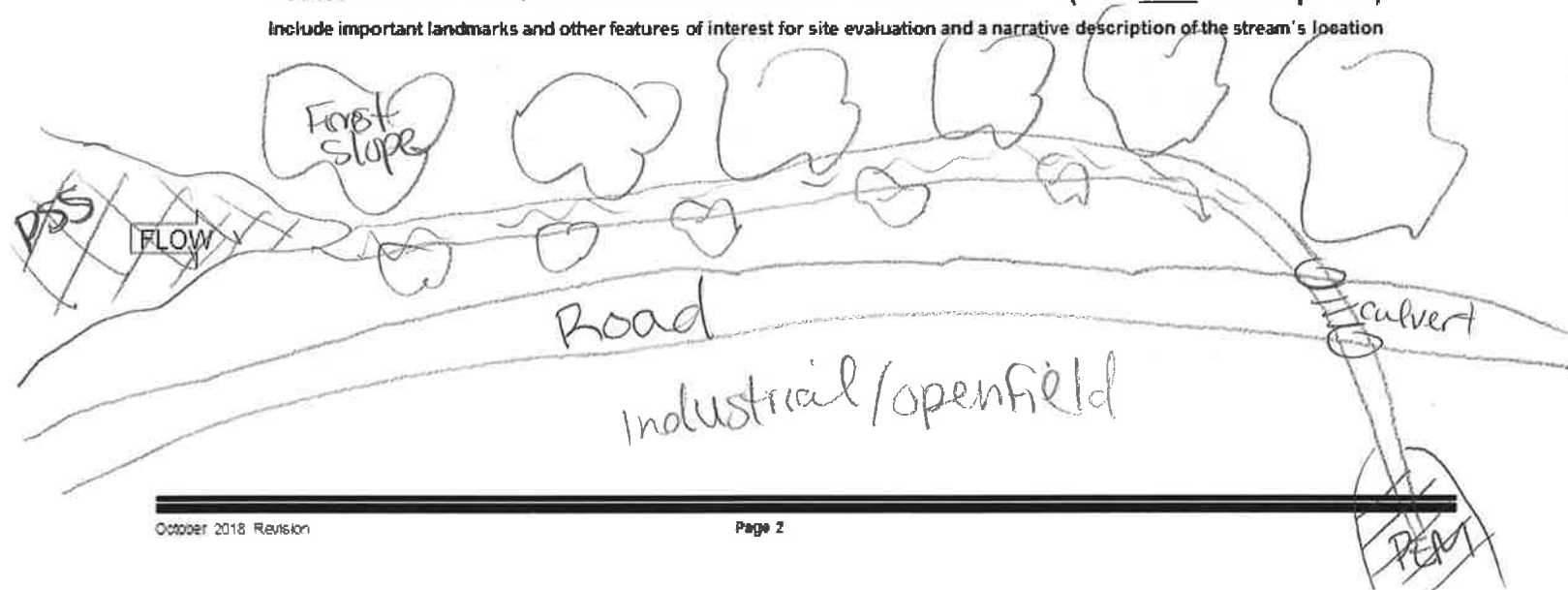
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

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

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



APPENDIX D

Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms

Site: <u>ATP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

W0H-KLV-001 (PEM/PUB)
W001-PEM-CAT1

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)

2	4
max 14 pts.	subtotal

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

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

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

14	18
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☒ dike
- ☐ weir
- ☐ stormwater input

- ☒ point source (nonstormwater)
- ☒ filling/grading
- ☒ road bed/RR track
- ☐ dredging
- ☐ other

5	23
max 20 pts.	subtotal

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)
- ☒ Recovering (3) 2
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

23
subtotal this page

Site: <u>APP Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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23

subtotal first page

0	23
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2	25
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

25

End of Quantitative Rating. Complete Categorization Worksheets.

Site: <u>ATP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
-----------------------------	----------------------	------------------------

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

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)

W0H-KLV-002 (PEM)
W002-PEM-CAT1

2	3
max 14 pts.	subtotal

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

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

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

11	14
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|---|---|
| <ul style="list-style-type: none"> ☐ ditch ☐ tile ☒ dike ☐ weir ☐ stormwater input | <ul style="list-style-type: none"> ☒ point source (nonstormwater) ☒ filling/grading ☒ road bed/RR track ☐ dredging ☐ other |
|---|---|

4	18
max 20 pts.	subtotal

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)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|--|
| <ul style="list-style-type: none"> ☒ mowing ☐ grazing ☐ clearcutting ☐ selective cutting ☐ woody debris removal ☐ toxic pollutants | <ul style="list-style-type: none"> ☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☐ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment |
|---|--|

18
subtotal this page

Site: <u>AFP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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18

subtotal first page

0

18

max 10 pts.
subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2

20

max 20 pts.
subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

20

End of Quantitative Rating. Complete Categorization Worksheets.

Site: <u>AFP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

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)

W01-KLV-003(PEM)
W003-PEM-CATI

4	6
max 14 pts.	subtotal

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

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

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

3

12	18
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|--|---|
| <ul style="list-style-type: none"> ☐ ditch ☐ tile ☐ dike ☐ weir ☐ stormwater input | <ul style="list-style-type: none"> ☒ point source (nonstormwater) ☒ filling/grading ☒ road bed/RR track ☐ dredging ☐ other |
|--|---|

7	25
max 20 pts.	subtotal

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)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <ul style="list-style-type: none"> ☒ mowing ☐ grazing ☐ clearcutting ☐ selective cutting ☐ woody debris removal ☐ toxic pollutants | <ul style="list-style-type: none"> ☒ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☐ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment |
|---|---|

25
subtotal this page

Site: AEP-Culbertson	Rater(s): KLV	Date: 2/12/2020
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25

subtotal first page

0

25

max 10 pts.
subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1

26

max 20 pts.
subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
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Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
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Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

26

End of Quantitative Rating. Complete Categorization Worksheets.

Site: ATP-Culbertson	Rater(s): KLV	Date: 2/12/2020
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

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)

W04-KLV-004(PEM)
W004-PEM-CAT1

3	4
max 14 pts.	subtotal

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

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

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

7	11
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed	
☐ ditch ☐ tile ☐ dike ☐ weir ☐ stormwater input	☒ point source (nonstormwater) ☒ filling/grading ☒ road bed/RR track ☐ dredging ☐ other

6	17
max 20 pts.	subtotal

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)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
☒ mowing ☐ grazing ☐ clearcutting ☐ selective cutting ☐ woody debris removal ☐ toxic pollutants	☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☐ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment

17
subtotal this page

Site: ATP-Culbertsm	Rater(s): KLV	Date: 2/12/2020
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17

subtotal first page

0

17

max 10 pts.
subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2

15

max 20 pts.
subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

15

End of Quantitative Rating. Complete Categorization Worksheets.

Site: <u>ATP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

W04-KLV-005(PSS)
W005-PSS-CATI

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)

4	6
max 14 pts.	subtotal

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

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

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

12	18
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|--|---|
| <ul style="list-style-type: none"> ☐ ditch ☐ tile ☐ dike ☐ weir ☐ stormwater input | <ul style="list-style-type: none"> ☒ point source (nonstormwater) ☒ filling/grading ☒ road bed/RR track ☐ dredging ☐ other |
|--|---|

8	26
max 20 pts.	subtotal

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)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| <ul style="list-style-type: none"> ☐ mowing ☐ grazing ☐ clearcutting ☐ selective cutting ☐ woody debris removal ☐ toxic pollutants | <ul style="list-style-type: none"> ☒ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☐ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment |
|--|---|

26
subtotal this page

Site: AEP-Culbertson Rater(s): KLV Date: 2/12/2020

26

subtotal first page

0 26

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3 29

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☒ Emergent
- ☒ Shrub
- ☒ Forest
- ☒ Mudflats
- ☒ Open water
- ☒ Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

29

End of Quantitative Rating. Complete Categorization Worksheets.

Site: <u>AFP-Culbertson</u>	Rater(s): <u>KLV</u>	Date: <u>2/12/2020</u>
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

W011-KLV-006(PAM)
W006-PAM-CAT1

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)

1	2
max 14 pts.	subtotal

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

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

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

11	13
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed	
☐ ditch ☐ tile ☐ dike ☐ weir ☒ stormwater input	☐ point source (nonstormwater) ☒ filling/grading ☐ road bed/RR track ☐ dredging ☐ other

5	18
max 20 pts.	subtotal

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)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
☒ mowing ☐ grazing ☐ clearcutting ☐ selective cutting ☐ woody debris removal ☐ toxic pollutants	☐ shrub/sapling removal ☐ herbaceous/aquatic bed removal ☐ sedimentation ☐ dredging ☐ farming ☐ nutrient enrichment

2

18

subtotal this page

Site: AFP-Culbertson	Rater(s): KLV	Date: 2/12/2020
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18

subtotal first page

0

18

max 10 pts.
subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-1

17

max 20 pts.
subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

17

End of Quantitative Rating. Complete Categorization Worksheets.



Canton Office
3720 Dressler Road Northwest
Canton, Ohio 44718

T 330.433.2680
F 330.433.2694

February 20, 2020
Project C170352.94

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
AMG Vanadium Metering Station
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Muskingum 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 AMG Vanadium Metering Station (Project) in Muskingum 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 in the area.

The proposed Project (9.0 acres) involves the construction of a new substation associated with a 138 kilovolt (kV) transmission line extension, part of the overall AMG Vanadium 138 kV Service Project. A separate project review request will be sent for the transmission line extension asset.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of open grassland within a commercial area. Project shapefiles have been included to aid in your review.

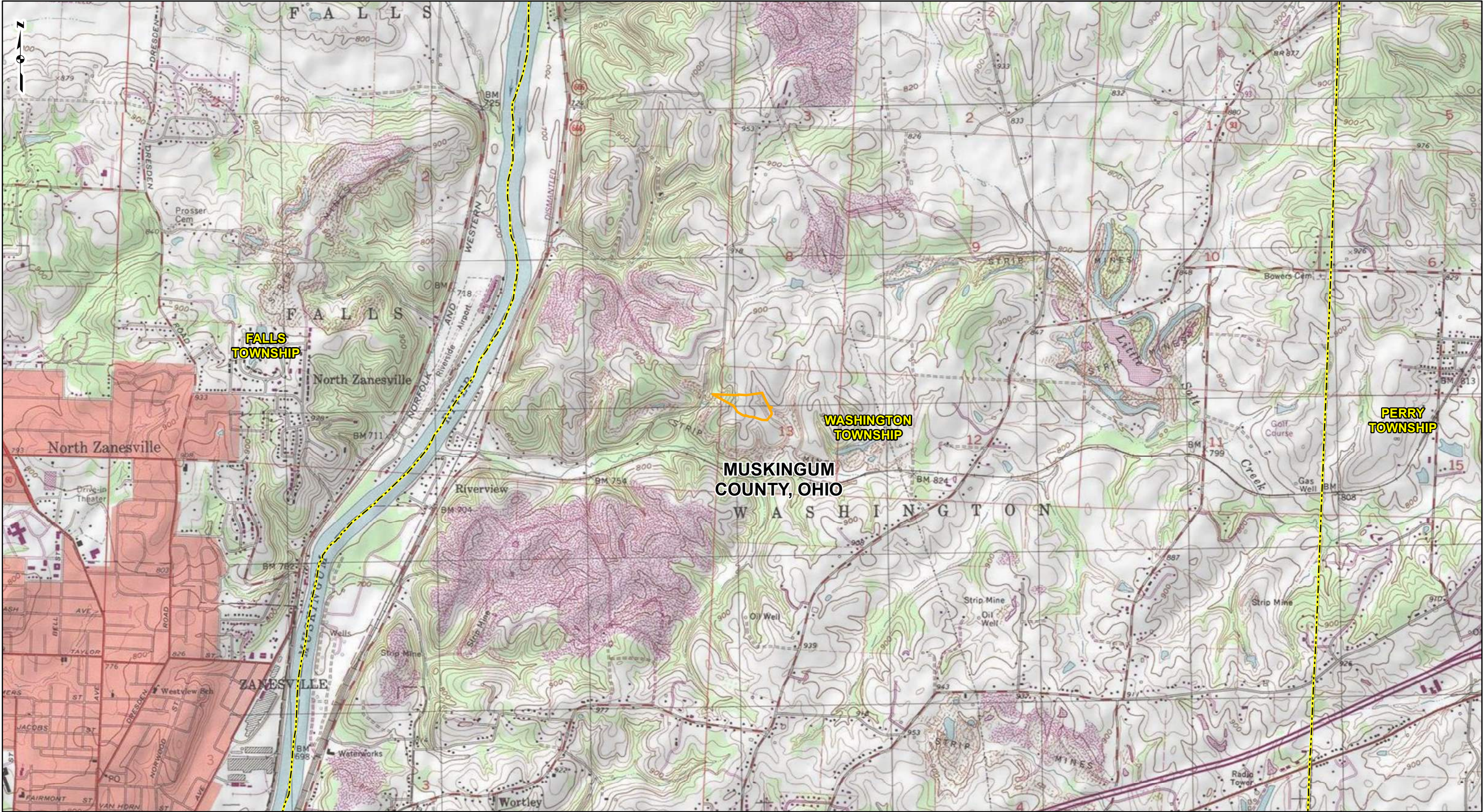
GAI and AEP thank you in advance for your assistance. Please contact me at 234.203.0772 or via email at k.vonderwish@gaiconsultants.com if you have any questions or require further information.

Sincerely,
GAI Consultants, Inc.

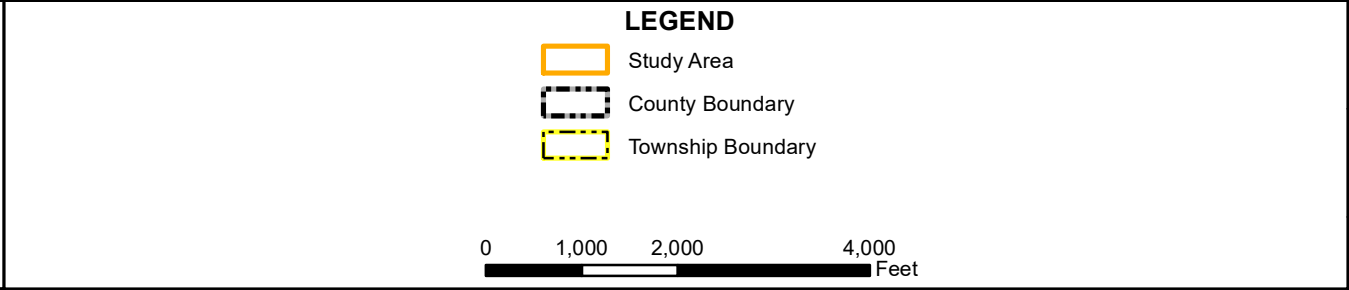
Kristen L. Vonderwish
Project Environmental Specialist

Attachments: Attachment 1 (Project Location Map)
Project Shapefiles

ATTACHMENT 1
PROJECT LOCATION MAP



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ADAMSVILLE (1978), DRESDEN (1981), ZANESVILLE EAST (1977), AND ZANESVILLE WEST (1985), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 02/2020.



PROJECT LOCATION MAP

AMG VANADIUM
METERING STATION
AMERICAN ELECTRIC POWER

gai consultants

AMERICAN ELECTRIC POWER

DRAWN BY: SWW
CHECKED: EFJ

DATE: 2/19/2020
APPROVED:



Canton Office
3720 Dressler Road Northwest
Canton, Ohio 44718

T 330.433.2680
F 330.433.2694

February 20, 2020
Project C170352.94

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
AMG Vanadium Metering Station
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Muskingum 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 AMG Vanadium Metering Station (Project) in Muskingum 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 in the area.

The proposed Project (9.0 acres) involves the construction of a new substation associated with a 138 kilovolt (kV) transmission line extension, part of the overall AMG Vanadium 138 kV Service Project. A separate project review request will be sent for the transmission line extension asset.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of open grassland within a commercial area. Project shapefiles have been included to aid in your review.

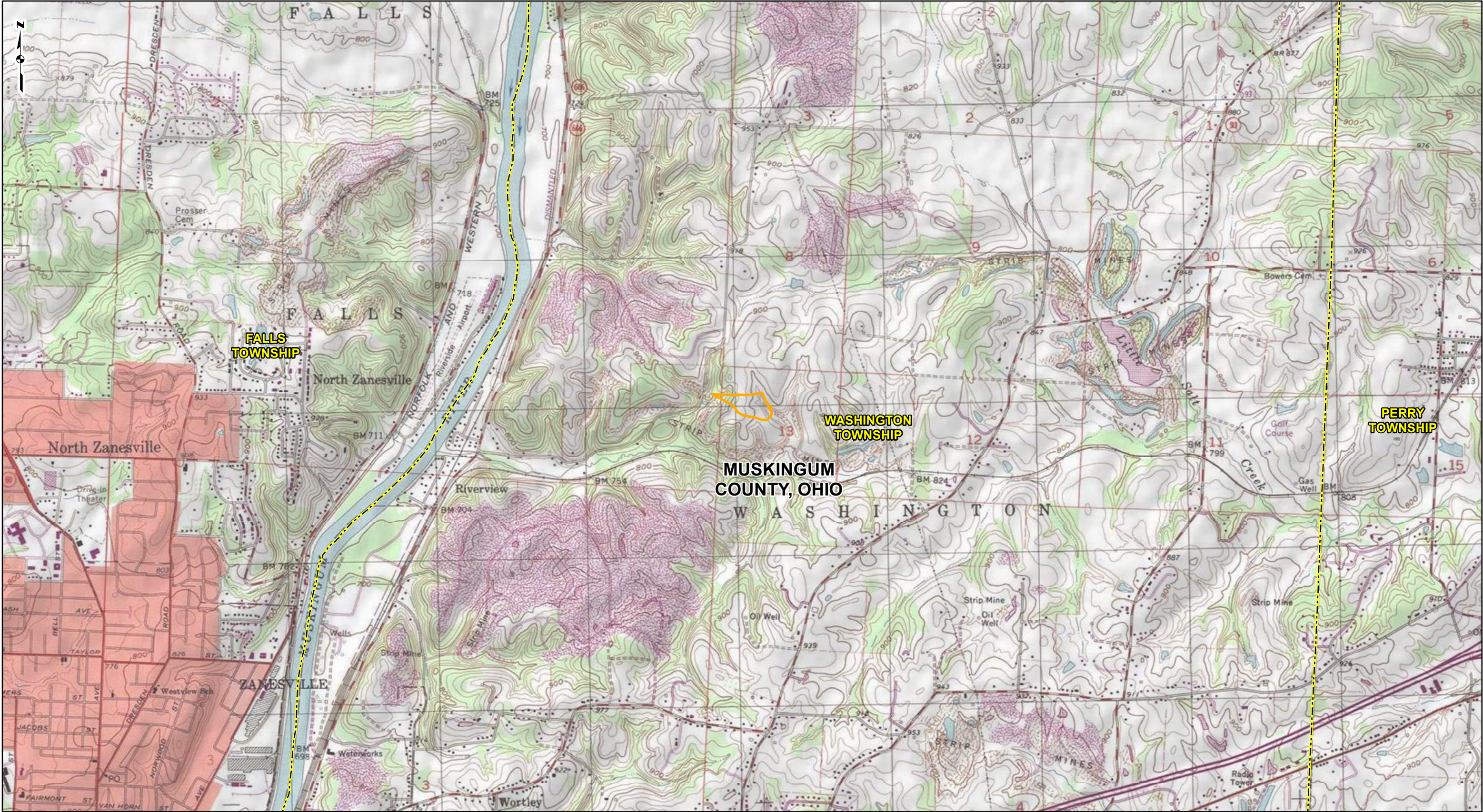
GAI and AEP thank you in advance for your assistance. Please contact me at 234.203.0772 or via email at k.vonderwish@gaiconsultants.com if you have any questions or require further information.

Sincerely,
GAI Consultants, Inc.

Kristen L. Vonderwish
Project Environmental Specialist

Attachments: Attachment 1 (Project Location Map)
Project Shapefiles

ATTACHMENT 1
PROJECT LOCATION MAP



PROJECT LOCATION



MUSKINGUM COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: ADAMSVILLE (1978), DRESDEN (1981), ZANESVILLE EAST (1977), AND ZANESVILLE WEST (1985), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 02/2020.

LEGEND

-  Study Area
-  County Boundary
-  Township Boundary

0 1,000 2,000 4,000 Feet

PROJECT LOCATION MAP



AMG VANADIUM
METERING STATION
AMERICAN ELECTRIC POWER

DRAWN BY: SWW
CHECKED: EFJ

DATE: 2/19/2020
APPROVED:

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/16/2020 10:53:06 AM

in

Case No(s). 20-0542-EL-BLN

Summary: Letter of Notification Letter of Notification Application for the Culbertson 138kV Station Project electronically filed by Tanner Wolfram on behalf of AEP Ohio Transmission Company, Inc.