Legal Department

American Electric Power
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December 18, 2018

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Chairman Asim Z. Haque
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215

Re: PUCO Case No. 18-1800-EL-BLN
In the Matter of the Letter of Notification for the
Devola-Mill Creek 138kV Transmission Line Project

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification for the above-captioned project by AEP Ohio Transmission Company, Inc. This filing and notice is in accordance with O.A.C. 4906-6-05

A copy of this filing will also be submitted to the executive director or the executive director's designee. A copy will be provided to the Board Staff, including an electronic copy.

If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Christen M. Blend
Christen M. Blend (0086881), Counsel of Record
Hector Garcia (0084517)

Counsel for AEP Ohio Transmission Company, Inc.

cc: John Jones, Counsel OPSB Staff
Jon Pawley, OPSB Staff

Letter of Notification for the Devola-Mill Creek 138 kV Transmission Line Project

Case No. 18-1800-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.

December 18, 2018

Letter of Notification for –Devola-Mill Creek 138 kV Transmission Line Project

4906-6-05

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

4906-6-05(B) General Information

B(1) Project Description

The applicant shall provide 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 or construction notice application.

AEP Ohio Transco has identified the need to construct the Devola-Mill Creek 138 kV Transmission Line Project ("Project") in Muskingum Township, Washington County, Ohio. The Project consists of constructing a new single-circuit 138 kilovolt (kV) electric transmission line that will be approximately 0.41 mile in length.

The transmission line will be located between the future Devola Substation and the existing Mill Creek Substation. Both of these substations are located near the community of Devola, Ohio, which is approximately 2.4 miles north of the City of Marietta. The location of the Project is shown on a United States Geological Survey (USGS) Topographic Map as Exhibit 1 in Appendix A.

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

> *(1) New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:*
>
> *(b) Line(s) greater than 0.2 miles in length but not greater than two miles in length.*

The PUCO Case Number for this project is 18-800-EL-BLN.

B(2) Statement of Need

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

AEP Ohio Transco, Ohio Power Company, Buckeye Power, Inc. ("Buckeye"), and Washington Electric Cooperative ("Washington") (collectively, "the Companies") have agreed to implement a long-term plan

aimed at enhancing the reliability of the southeast Ohio area electric transmission and distribution network, referred to as the Southeast Ohio Improvements Program. The existing infrastructure has reached an age and condition where it is in need of rebuild and redesign to meet the needs of customers across the region. The Companies have developed a multi-year construction plan that will replace much of the existing deteriorating infrastructure in place today.

The focus of the program is to rebuild the area's aged 23 kV infrastructure into a 138 kV network and redesign the system to improve reliability for customers across the region. Bringing additional power sources into the region will improve electric service reliability and provide the electrical capacity for future economic growth. Ultimately, the series of improvements and investment in the area will provide a looped transmission system between the future Lamping and Devola 138 kV substations.

The Project is part of the overall program and will connect existing substations in the area. The addition of the Devola-Mill Creek 138 kV transmission line into the planned 138 kV network will improve service reliability to regional customers, thereby enhancing service for customers, decreasing power interruptions, providing for more efficient recovery of service when outages occur, and supporting local economic development.

This project is an ancillary project to the Devola Station (filed in 18-0034-EL-BLN). This Project was included in AEP Ohio Transco's 2018 LTFR in Form FE-T9, on page 19. *See* Appendix E. This project is included in PJM number S1125

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.

Exhibit 2 in Appendix A shows the proposed Project relative to existing electrical transmission and distribution lines.

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 proposed route is approximately 0.41 miles long and is located adjacent to the existing Mill Creek-Riverview transmission line right-of-way for a portion of the length between the future Devola Substation and the Mill Creek Substation, as shown on Exhibit 2. The proposed transmission line is intended to provide a single-circuit 138 kV transmission line connection between the Devola Substation and the Mill Creek Substation. AEP Ohio Transco evaluated land options between the aforementioned substations to determine the location of the proposed Project. A formal routing analysis was not completed for this Project

because the short distance between the Devola and Mill Creek Substations did not present more than one reasonable route alternative.

The proposed route for the Project represented the most appropriate solution for meeting AEP Ohio Transco's need. Specifically, the route was chosen because it is adjacent to existing electric transmission lines, minimizes impacts to nearby land use (e.g., residential areas), and minimizes ecological impacts (no impacts to streams are planned).

The Project will require right-of-way acquisition on five privately and commonly-owned, undeveloped parcels. AEP Ohio Transco is in negotiation to acquire an easement necessary to accommodate the right-of-way needed for the proposed electric transmission line.

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.

Within seven days after filing this LON, AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements under O.A.C. 4906-6-08(A)(1)-(6). Further, AEP Ohio Transco 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. The LON will also be sent to applicable public officials concurrently with submittal to the OPSB, and a paper copy of the LON will be provided to the Marietta/Washington County Library located at 615 Fifth Street, Marietta, Ohio. Lastly, AEP Ohio Transco retains land agents who discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

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

Construction is planned to start in March 2019 with an anticipated in-service date of second quarter 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.

Exhibit 3 in Appendix A shows the location of the proposed electric transmission line on an aerial image with clearly marked streets, roads, and highways.

To visit the Project from Marietta City Government Office, take Putnam Street northeast 0.4 miles to the intersection of Putnam Street, 7th Street, and Glendale Road. Follow Glendale Road to the north for

1.2 miles to Colegate Drive. Turn left onto Colegate Drive and travel 0.8 mile before turning right onto Mill Creek Road. Follow Mill Creek Road for 0.28 mile and the Mill Creek Substation is located on the right side of the road. The proposed electric transmission line route will cross Mill Creek Road, and travel approximately 0.41 mile to the north of the Mill Creek Substation, adjacent to the existing Devola – Belle Ridge 138 kV transmission line and terminate at the Devola Substation. The Devola Substation can be accessed from a permanent access road.

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 0.41-mile proposed route for the Project will occur on property owned by AEP Transco Ohio and across five parcels owned by one private landowner, Thermo Fisher Scientific County (Parcel Identifications: 260035024000, 260035016000, 260035032000, 260035000000, 260034996000). AEP Ohio Transco is working with the aforementioned private landowner to acquire the requisite easements for the proposed transmission line right-of-way.

B(9) Technical Features

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

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

The Project will consist of a single-circuit transmission line designed to operate at 138-kV. The Project will require a 100-foot wide right-of-way easement on property owned by AEP Ohio Transco and a private land owner.

The Project will include four transmission structures: two (2) custom monopole steel structures with concrete foundations, and two (2) delta-braced post configuration structures with direct embedded foundations. There will also be three (3) wood skip-span poles for the distribution.

Examples of the proposed structure types and their configurations can be found in Appendix B.

B(9)(b) Electric and Magnetic Fields

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

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

Not applicable. The proposed Project is not located within 100 feet of an occupied residence or institution. The nearest residence to the proposed Project is approximately 860 feet to the west.

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 not located within 100 feet of an occupied residence or institution. The nearest residence to the proposed Project is approximately 860 feet to the west.

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

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, comprised of applicable tangible and capital costs, is approximately $1,200,000.

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 Muskingum Township, Washington County, Ohio, approximately 2.4 miles north of the City of Marietta. The proposed route crosses through vacant land on a slope. The closest non-vacant land use is an industrial facility that is located approximately 346 feet to the east of the Project's centerline (1,500 feet to the southeast of the Devola Substation, and approximately 580 feet northwest of the Mill Creek Substation). The nearest residential property is approximately 860 feet to the west of the Project's centerline (approximately 1,300 feet to the southwest of the Devola Substation and approximately 1,500 feet to the northwest of the Mill Creek Substation). Dense mature vegetation separates the residences and the proposed transmission line providing visual screening of the Project from the residential properties.

The proposed Devola-Mill Creek138 kV transmission line will not impact existing land uses or future land use patterns near the site; furthermore, it will be strategically located adjacent to an existing electric transmission line corridor thereby minimizing visual impacts to the area. There is an approximately 600 feet wide mature vegetative buffer separating the nearest residential property from both the existing and proposed electric transmission structures.

Vegetative communities within the Project Area include upland forest, scrub-shrub, and maintained lawn area. There are no cemeteries, churches, schools, or other community facilities located within 1,000 feet of the proposed Project location (Exhibit 3 in Appendix A).

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.

AEP Ohio Transco's consultant contacted the Washington County Auditor to obtain information about Agricultural District lands and received the requested data via email on October 29, 2018. The proposed Project will be constructed on privately owned parcels which are not listed by the Washington County Auditor's Office as part of a registered agricultural district. These parcels are not currently used for agricultural production.

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.

In October 2018, AEP Ohio Transco's consultant completed a Phase I Cultural Resources Literature Review to assess potential impacts from the planned construction activities (Appendix C). This Report addresses archaeological and architectural resources in the Project area. A literature review indicated that there are no formally recorded resources in the Project area.

Based on the cultural resources literature review, and the sloped topography of the Project area, AEP Ohio Transco's consultant recommends no further archaeological work. A conclusion of "no effect on historic properties or landmarks" is appropriate for the Project.

This report was submitted to the Ohio Historic Preservation Office ("OHPO") on October 26, 2017. AEP Ohio Transco is waiting for a response from OHPO regarding the cultural resource work. In January and February 2018, CH2M submitted the Phase I Cultural Resources Reports for the Bell Ridge-Devola 138 kV Transmission Line to the Ohio Historic Preservation Office. The OHPO concurred with the findings of the report in a letter dated February 12, 2018 (Appendix C). In September 2018, CH2M submitted a Cultural

Resources Letter Report for the Highland Ridge-Devola 138 kV Transmission Line Project. The OHPO concurred with the findings of the Letter Report in a letter dated September 17, 2018 (Appendix C).

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

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

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction stormwater discharges under General Permit OHC000004. AEP Ohio Transco will implement and maintain best management practices (BMPs), as outlined in the planned Storm Water Pollution Prevention Plan (SWPPP), to minimize erosion and control sediment to protect surface water quality. The Project as currently planned would not impact any wetlands or waterways. (See Appendix D).

The Project is not located within a Federal Emergency Management Agency (FEMA) 100-year floodplain area. 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.

Coordination with Ohio Department of Natural Resources (ODNR) Division of Wildlife (DOW) was initiated to obtain Ohio Natural Heritage Database records within a 1-mile radius of the proposed Devola Station Study Area. ODNR records of state and federally listed species, provided November 20, 2017, indicates that 29 state- or federally-listed species have known occurrences within a 1-mile radius of the Project.

Of these 29 species, potential habitat for only two of the species, Indiana bat (*Myotis sodalis*) and black bear (*Ursus americanus*), were identified within the Project Study Area. Due to the nature of the Project, adherence to seasonal tree cutting requirements during construction, and the mobility of the species, ODNR concurs that this Project is not likely to impact any of the listed species. Information on species obtained from U.S. Fish and Wildlife Service (USFWS) county lists and the ODNR-DOW Ohio Natural Heritage Database is provided in the Ecological Resources Inventory Report in Appendix D.

The USFWS *Federally Listed Species by Ohio Counties January 2018* (available at https://www.fws.gov/midwest/endangered/lists/pdf/OhioCtyList29Jan2018.pdf) was reviewed to

determine the threatened and endangered species currently known to occur in Washington County, Ohio. This USFWS publication listed the following threatened or endangered species as occurring in Washington County: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis;* federally threatened), fanshell (*Cyprogenia stegaria*; federally endangered), pink mucket pearly mussel (*Lampsilis abrupta*; federally endangered), sheepnose (*Plethobasus cyphyus*; federally endangered), 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 on August 30th, 2017 seeking technical assistance on the Project for potential impacts to threatened or endangered species. The USFWS indicated that the proposed Project is within the range of the Indiana bat and northern long-eared bat in Ohio but not within known the range of known records for the Indiana bat. If tree-clearing occurs between October 1 and March 31, USFWS does not anticipate the Project having any adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species. The USFWS letter did not include comments specific to the other federally listed species.

Based on the nature of the proposed Project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated. Seasonal tree clearing will be implemented to reduce impacts to bat species and their habitat.

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.

No wildlife management areas or nature preserve lands are located within 1,000 feet of the Project. Correspondence received from the USFWS (Appendix D) indicates that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project Area.

The FEMA Flood Insurance Rate Map (FIRM) was consulted to identify any floodplains/flood hazard areas that have been mapped in the Project Study Area. Based on this map, no mapped FEMA floodplains are in the Project Area. Therefore, no floodplain permits will be required for this Project.

A review of the National Wetlands Inventory (NWI) database indicated that there are no NWI-mapped wetlands present within the Project Area. Wetland and waterbody delineations as well as a general habitat assessment surveys were completed by Jacobs within the Project area on May 18, 2017. The results of the wetland and waterbody delineations are presented in the Ecological Resources Inventory Report included in Appendix D. No wetlands were delineated within the Project Study Area. There are five streams (unnamed tributaries to Muskingum River, Appendix D) within the Project Study Area. No in-water work

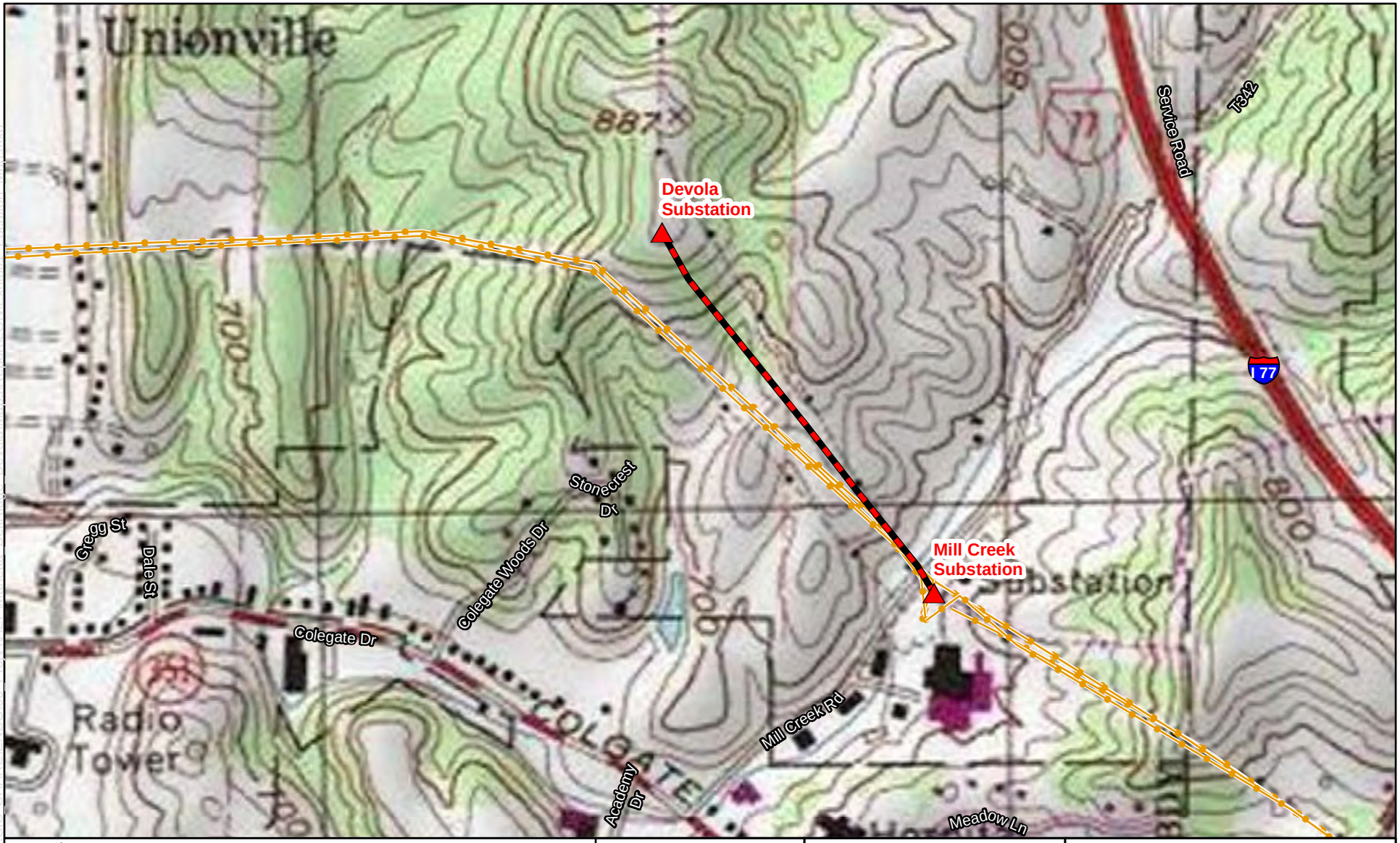
is proposed as part of the Project and therefore impact to any of the delineated streams is not anticipated. The USFWS recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitats including preserving natural buffers around streams and wetlands to enhance beneficial functions. The appropriate best management practices will be deployed to achieve this objective.

B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps



Legend

- Substation
- Proposed Mill Creek - Devola Transmission Line
- Existing Transmission Line (138kV)

BASE MAP SOURCE:
USGS 7.5-minute
Topographic Quadrangles:
Marietta

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:8,000

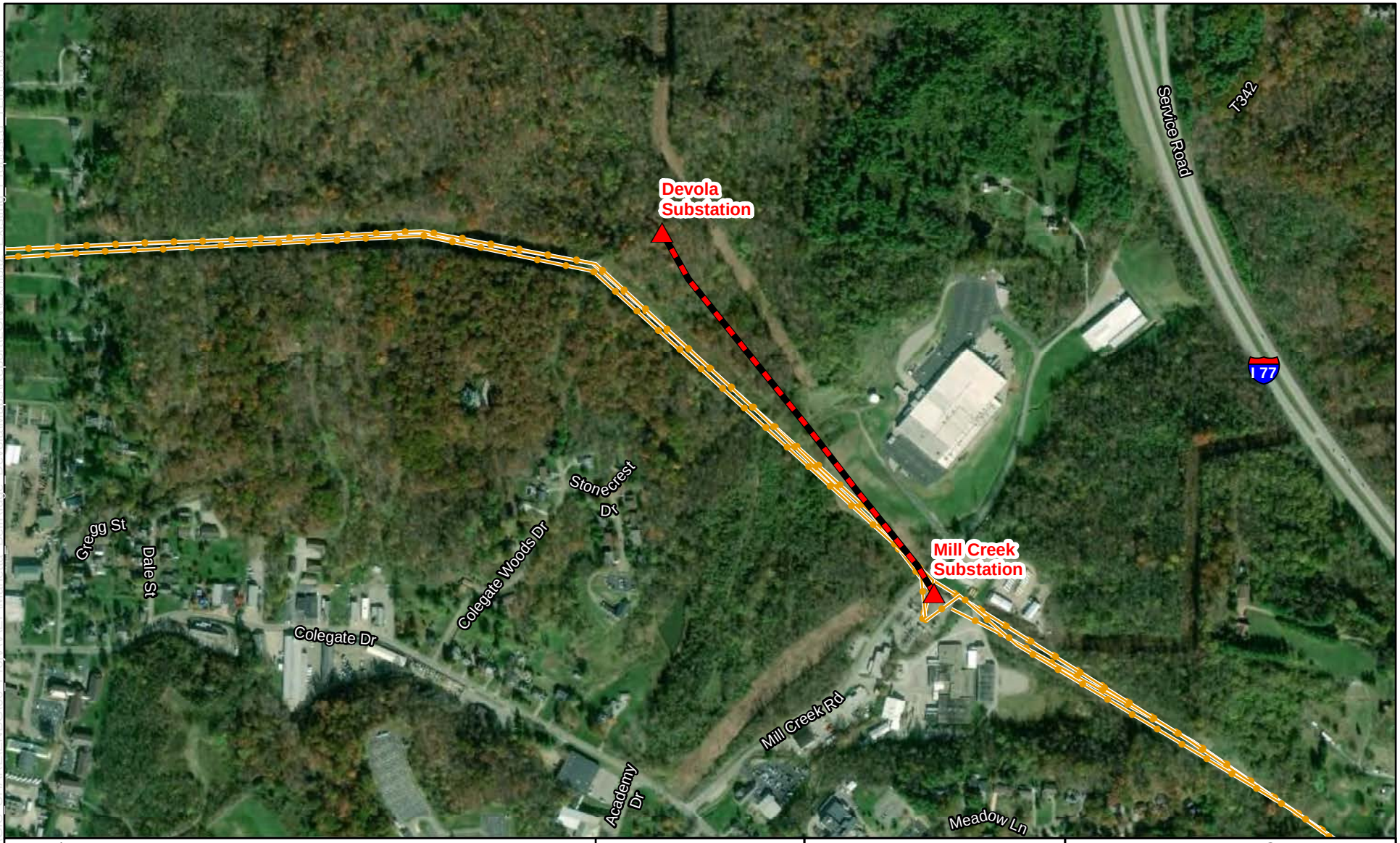
October 28, 2018

LOCATOR MAP

EXHIBIT 1
LOCATION MAP

Proposed Mill Creek – Devola
138 kV Transmission Line

0 500 1,000
Feet



Legend

- Substation
- Proposed Mill Creek - Devola Transmission Line
- Existing Transmission Line (138kV)

BASE MAP SOURCE:
ESRI World Imagery 2016

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:6,000

October 28, 2018

LOCATOR MAP

EXHIBIT 2
EXISTING AND PROPOSED TRANSMISSION LINE MAP

AEP OHIO

Proposed Mill Creek – Devola 138 kV Transmission Line

0 500 1,000
Feet

Legend

- Substation
- Proposed Mill Creek - Devola Transmission Line
- Existing Transmission Line (138kV)

BASE MAP SOURCE:
ESRI World Imagery 2016

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:24,000

October 28, 2018

LOCATOR MAP

EXHIBIT 3
VICINTY MAP

AEP OHIO

Proposed Mill Creek – Devola 138 kV Transmission Line

0 1,000 2,000
Feet

Appendix B Project Design Drawings

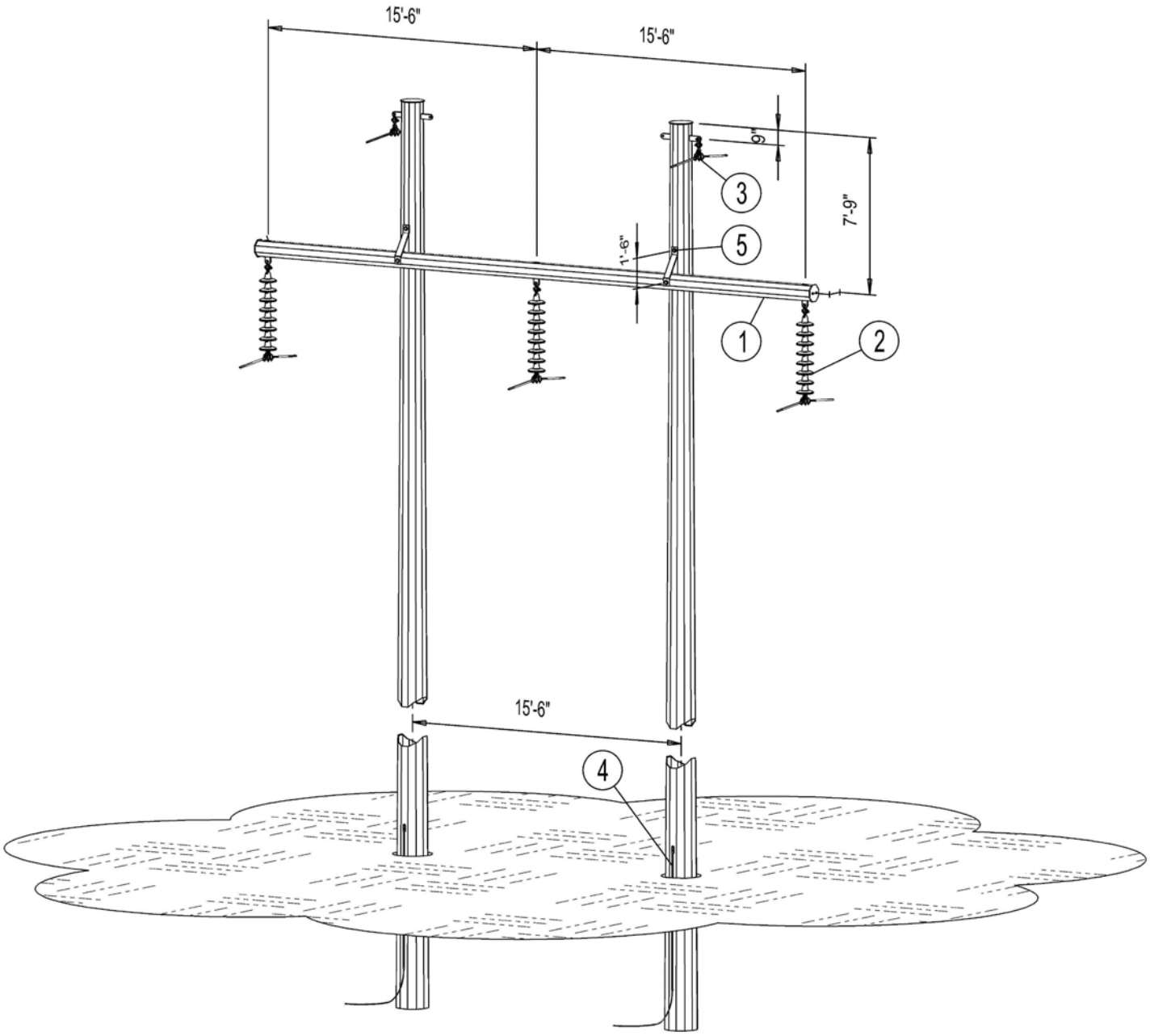


Figure 5-1A

REV	DESCRIPTION	BY	DATE
6	REVISED BILL OF MATERIAL	McP	04/30/15

AEP AMERICAN ELECTRIC POWER

TRANSMISSION LINE STANDARDS

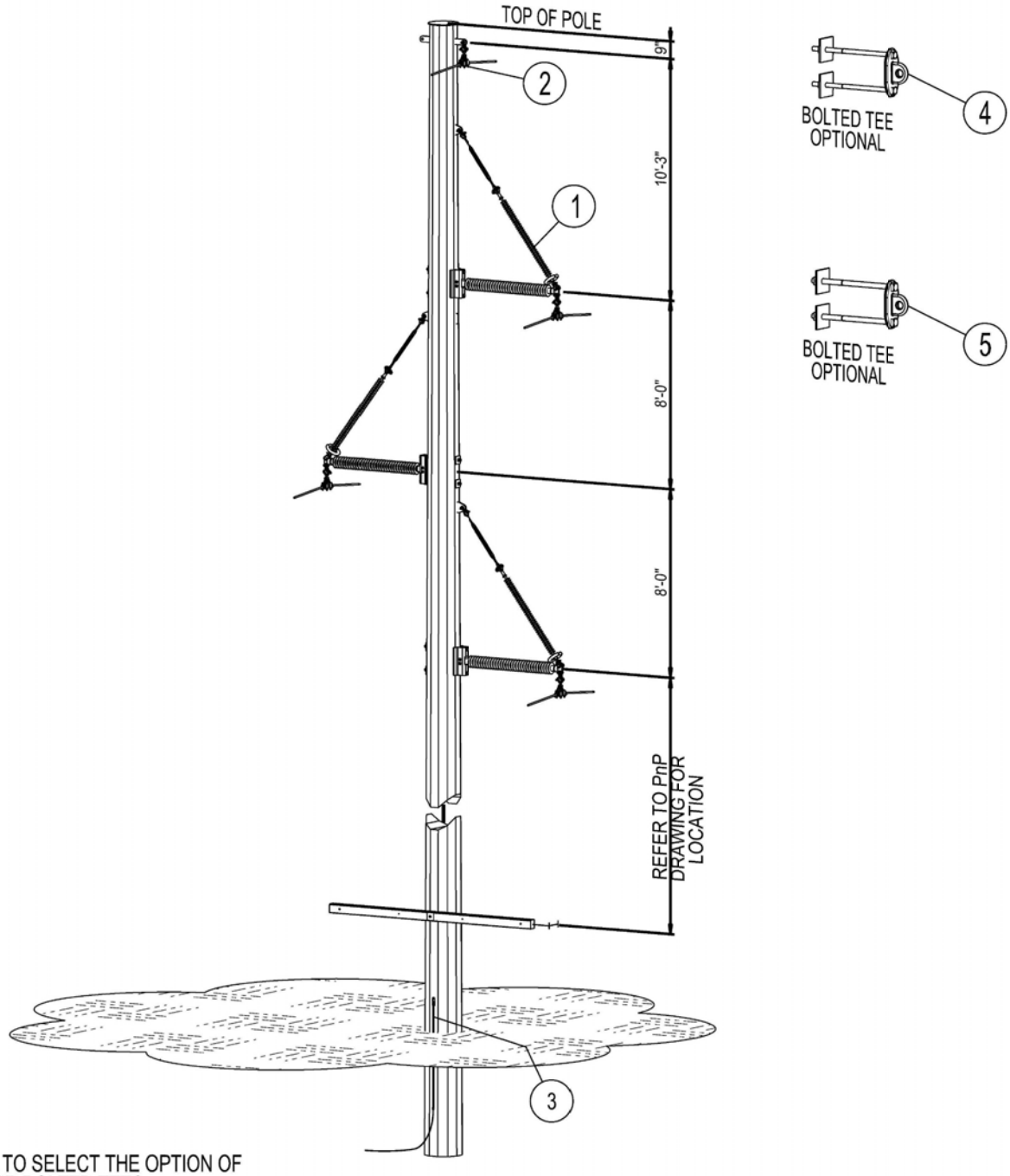
H-FRAME, GALVANIZED STEEL

ENGR:	DRAWN: McP	CHECKED:	APPROVED: JAH	DATE: 06/19/07

DRAWING No.	SHEET No.	REV. No.
CS45-0633	1	6

REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	3	13B5-2739	138KV INSULATOR, POLYMER, 0° DEGREE BRACED POST, W/CORONA RING	
2	1	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
3	1	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
4	1	71A0-1231	3/4 IN FLAT DEAD-END TEE	
5	3	71A0-1233	7/8 IN FLAT DEAD-END TEE	



NOTES:
1. T-LINE ENGINEER TO SELECT THE OPTION OF WELDED VANGS OR BOLTED TEES.

Figure 5-1B

REV	DESCRIPTION	BY	DATE
1	REVISED STRUCTURE - SAS	McP	03/03/16

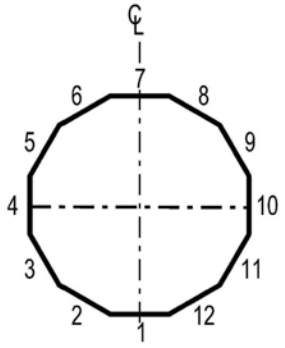
AEP AMERICAN ELECTRIC POWER

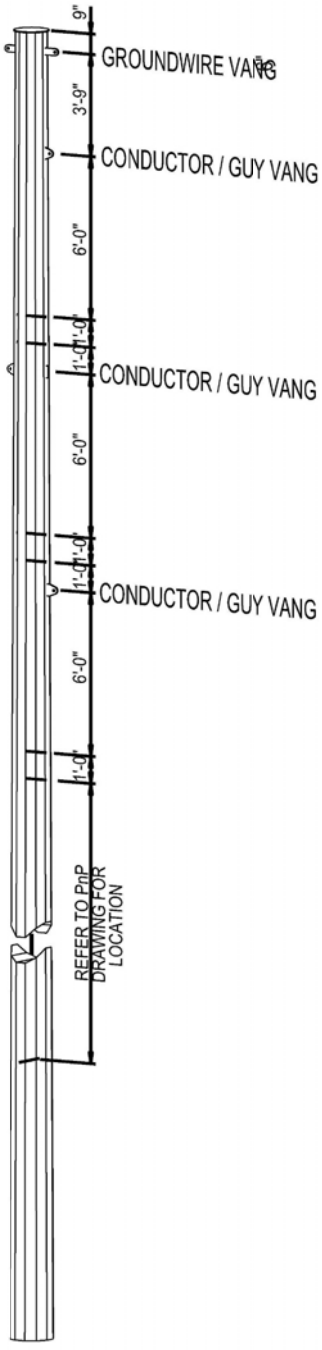
TRANSMISSION LINE STANDARDS

POLYMER - 138KV SINGLE CIRCUIT, ALTERNATING, ZERO DEGREE BRACED POST W/CORONA RING, STEEL

ENGR:	DRAWN: SAS	CHECKED: McP	APPROVED: JCN	DATE: 10/17/12

DRAWING No. CS11-2395 | SHEET No. 1 | REV. No. 1





VANG TABLE	
16.5K	
24.75K	
33K	
49.5K	

NOTES:
1. ALL HOLES TO BE $^{15}/_{16}$"Ø.
2. ALL HOLES FOR TRANSMISSION LINES ARE ON AXIS "4-10".
3 REFER TO DRAWING NO. 01D5-1225 FOR VANG AND GROUNDING NUT DETAILS.

Figure 5-1C

REV	DESCRIPTION	BY	DATE
1	REVISED STRUCTURE - SAS	McP	03/03/16

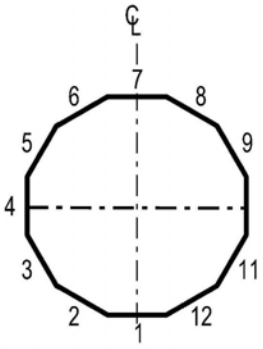
AEP AMERICAN ELECTRIC POWER

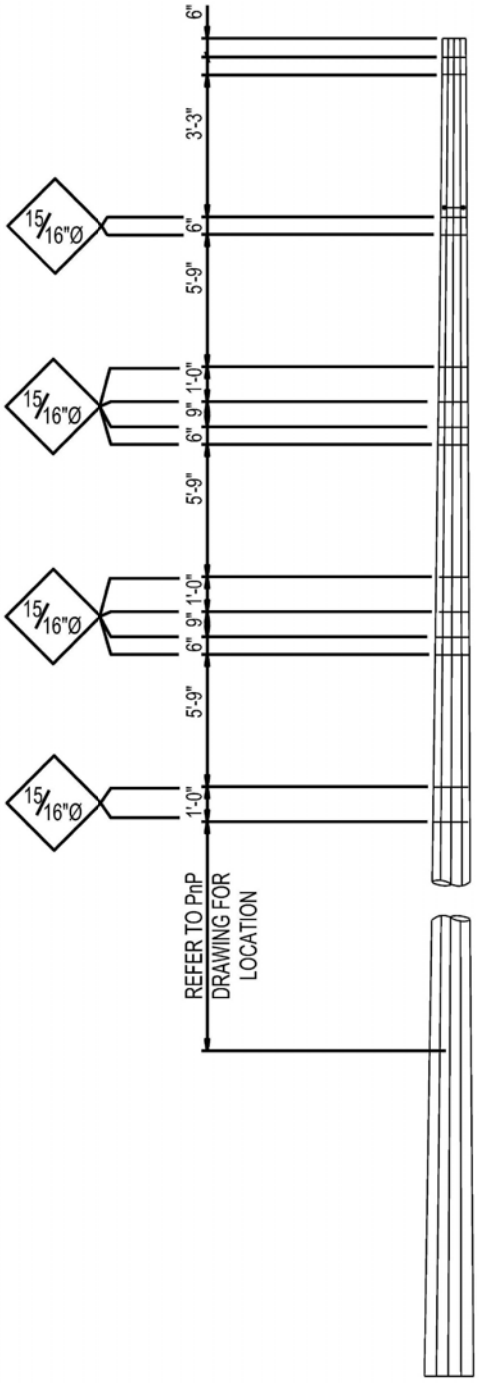
TRANSMISSION LINE STANDARDS
DRILL LOCATIONS
POLYMER - 138KV SINGLE CIRCUIT, ALTERNATING, ZERO DEGREE BRACED POST W/CORONA RING, STEEL

ENGR:	DRAWN: SAS	CHECKED: McP	APPROVED: JCN	DATE: 10/17/12

DRAWING No. CS11-2395 | SHEET No. 2 | REV. No. 1

Archive ID: 905-600





NOTES:
1. ALL HOLES SHALL BE 13/16"Ø UNLESS NOTED.
2. ALL HOLES FOR TRANSMISSION LINES ARE ON AXIS "4-10".

Figure 5-1D

REV	DESCRIPTION	BY	DATE
1	REVISED STRUCTURE - SAS	McP	03/03/16

AEP AMERICAN ELECTRIC POWER

TRANSMISSION LINE STANDARDS
DRILL LOCATIONS
POLYMER - 138KV SINGLE CIRCUIT,
ALTERNATING, ZERO DEGREE BRACED POST
W/CORONA RING, STEEL

ENGR:	DRAWN: SAS	CHECKED: McP	APPROVED: JCN	DATE: 10/17/12

DRAWING No. CS11-2395 | SHEET No. 3 | REV. No. 1

Archive ID: 905-600

Appendix C Architectural and Historical Resources Report & Ohio Preservation Office Concurrence Letters

JACOBS

Devola – Mill Creek 138 kV Transmission Line Project, Washington County, Ohio

Cultural Resources Literature Review

October 24, 2018

American Electric Power

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY™

Devola - Mill Creek 138 kV Transmission Line Project, Washington County, Ohio

Project No:	708056
Document Title:	Cultural Resources Literature Review for the Devola - Mill Creek 138 kV Transmission Line Project, Washington County, Ohio
Date:	October 26, 2018
Client Name:	American Electric Power
Project Manager:	Jonathan Schultis
Author:	Amy C. Favret, MA., RPA
File Name:	

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Contents

Table(s)

Figure(s)

Acronyms and Abbreviations

AEP	American Electric Power Transmission Company
APE	Area of Potential Effect
DOE	Determination of Eligibility
NRHP	National Register of Historic Places
OAI	Ohio Archaeological Inventory
OHI	Ohio Historic Inventory
OHPO	Ohio Historic Preservation Office
Project	Devola – Mill Creek 138 kV Transmission Line Project

1. Introduction

On behalf of American Electric Power Ohio Transmission Company (AEP Ohio Transco), Jacobs Engineering Group, Inc. (Jacobs) of Cincinnati, Ohio, conducted a cultural resources records review for the proposed Devola - Mill Creek 138 kV Transmission Line Project (Project) in Marietta, Washington County, Ohio (Figures 1 and 2). The Project consists of a new 593-meter (1,944-foot) long 138 kV transmission line connecting the Mill Creek and Devola Substations. This Project is part of the Southeast Ohio Area Improvements Project in southeastern Ohio. This cultural resources literature review details previously identified cultural resources and previous cultural resources studies conducted within 1.6 kilometers (one mile) of the Project.

The Project area corresponds to the 593-meter (1,944-foot) transmission line alignment and is defined as the vertical and horizontal space that will be impacted by Project activities. This also constitutes the Area of Potential Effect (APE). Based on information provided by AEP Ohio Transco, construction activities related to the development of the new transmission line include the installation of tangent, braced-post, delta structure poles and/or davit-arm, delta structure poles that will require a concrete footing at each location. The proposed right-of-way (ROW) for the Project measures 30.5 meters (100 feet) wide. The foundations for each pole location will require the excavation of 1.8- to 2.4-meter (six- to eight-foot) diameter holes that extend to a depth of 7.6 to 10.7 meters (25 to 35 feet).

Review of records available through the Ohio Historic Preservation Office (OHPO) revealed that while no archaeological resources are recorded within the Project APE, previous archaeological investigations have identified several archaeological sites within 1.6 kilometers (one mile) of the Project. The results of this literature review will be used to inform the need for additional cultural resources studies required for the Project, if any.

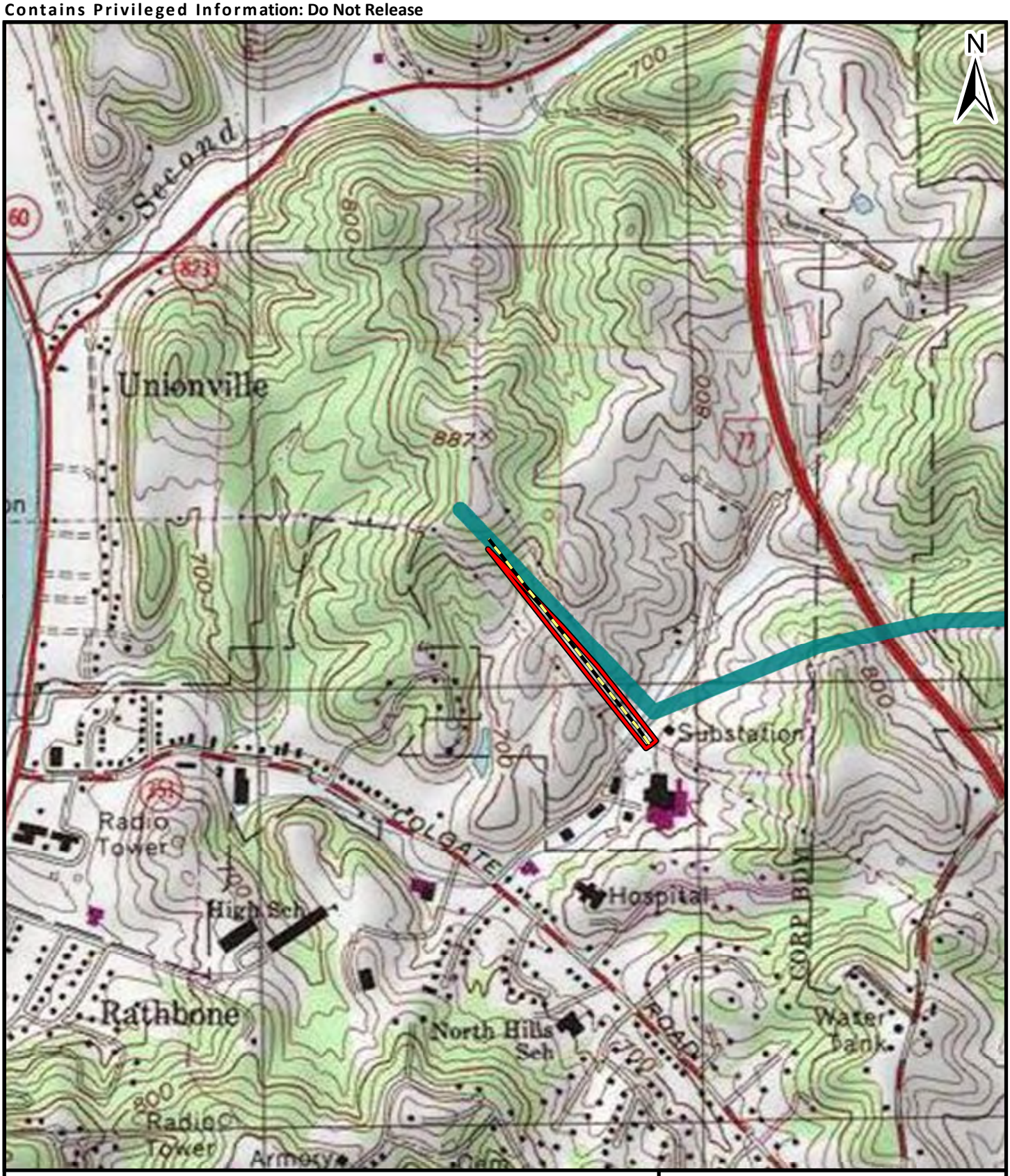
2. Records Review

The literature review was directed toward identifying previously inventoried archaeological sites, architectural and historical resources, and other cultural resources. Research was conducted using the OHPO Online Mapping System and available historic mapping. Jacobs focused on a 1.6-kilometer (one-mile) radius study area centered on the Project corridor, but also examined the larger region where appropriate. Data were collected for the following resources and/or resource types:

- National Historic Landmarks (NHL) List
- National Register of Historic Places (NRHP)
- Determination of Eligibility (DOE) files
- Ohio Historic Inventory (OHI)
- Ohio Archaeological Inventory (OAI)
- Ohio Genealogical Society (OGS) Cemetery Files
- Previous Cultural Resources Management reports
- Historic Maps and Atlases

Based a review of the records available through the OHPO online mapping database, one NRHP-listed resource, 114 OHI resources, 24 OAI archaeological sites, one NRHP-eligible resource (Determination of Eligibility files), and two OGS cemeteries have been inventoried within 1.6 kilometers (one mile) of the Project (Figure 3). No historic bridges or NHLs were identified during the review. Additionally, eight previous cultural resources investigations, including six Phase I cultural resources surveys and one Phase II survey, have been documented within the study radius. Of the total 142 cultural resources inventoried within the study area, none is within or adjacent to the project area.

Contains Privileged Information: Do Not Release



LEGEND:

- Devola-Mill Creek Centerline
- Project Area
- Bell Ridge-Devola Surveyed Area

BASE MAP SOURCE:
USGS 7.5-minute Topographic
Quadrangle: Marietta, OH (1978)

0 305 610
Scale in Meters

0 1,000 2,000
Scale In Feet

Devola-Mill Creek 138 kV Upgrade
Project Washington County, OH

FIGURE 1
PROJECT LOCATION

PN: 708056CH
DATE: 10/23/2018

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\A\AEP\MARIETTA_BELLRIDGE_DEVOLA\MAPS\CULTURAL\MILLCREEK_DEVOLA\FIG1_PROJECT_TOPO.MXD AG017958 10/23/2018

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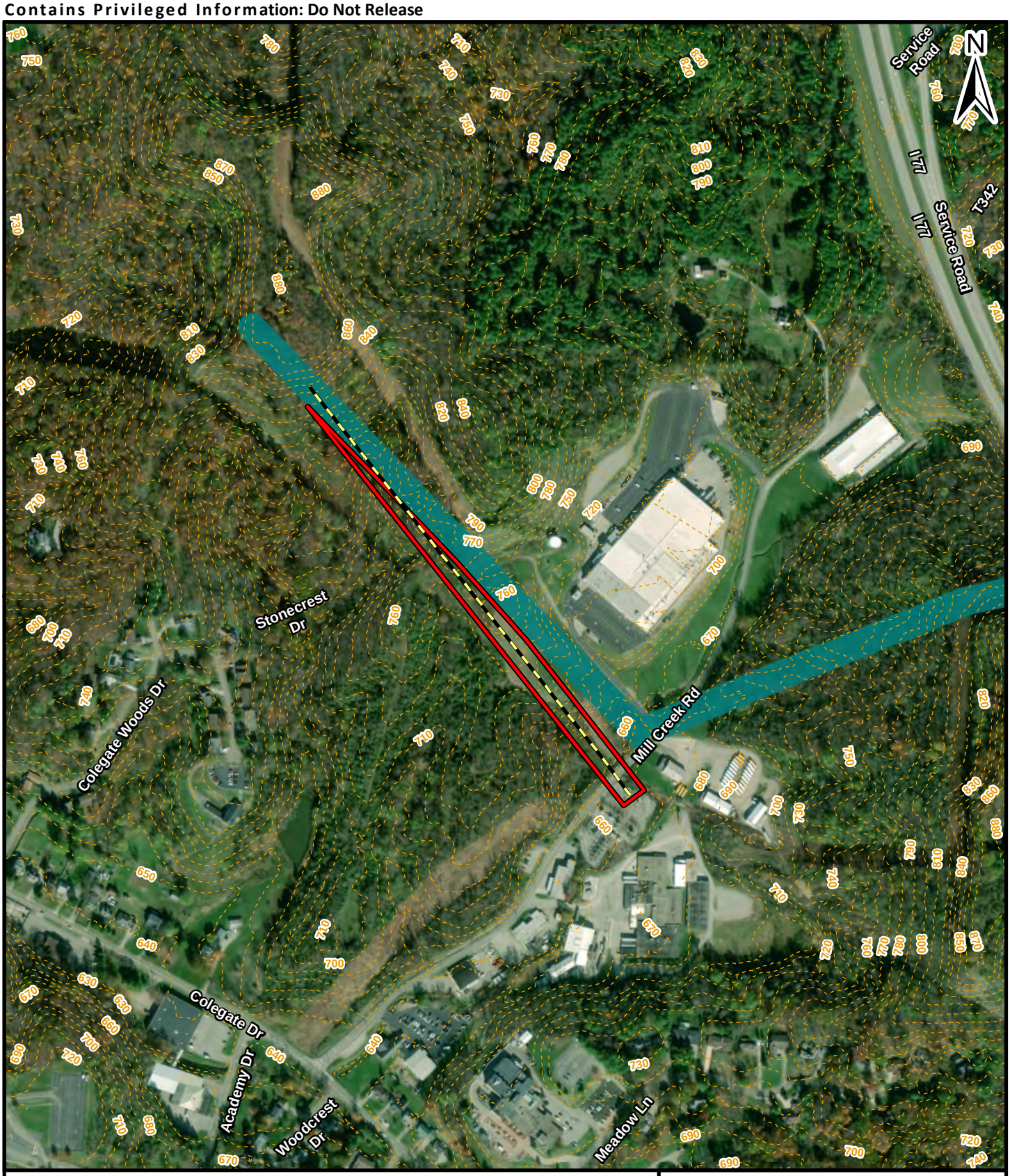

LEGEND:

- Devola-Mill Creek Centerline 10'
- Topographic Contour Project
- Area
- Bell Ridge-Devola Surveyed Area

BASE MAP SOURCE:
Esri World Imagery Layer, 2016

0 150 300
Scale in Meters

0 500 1,000
Scale In Feet

Devola to Mill Creek 138kV Upgrade Project
Washington County, OH

FIGURE 2
PROJECT OVERVIEW

PN: 708056CH
DATE: 10/23/2018

JACOBS

\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\A\AEP\MARIETTA_BELLRIDGE_DEVOLA\MAPS\CULTURAL\MILLCREEK_DEVOLA\FIG2_PROJECT_AERIAL.MXD AG017958 10/23/2018

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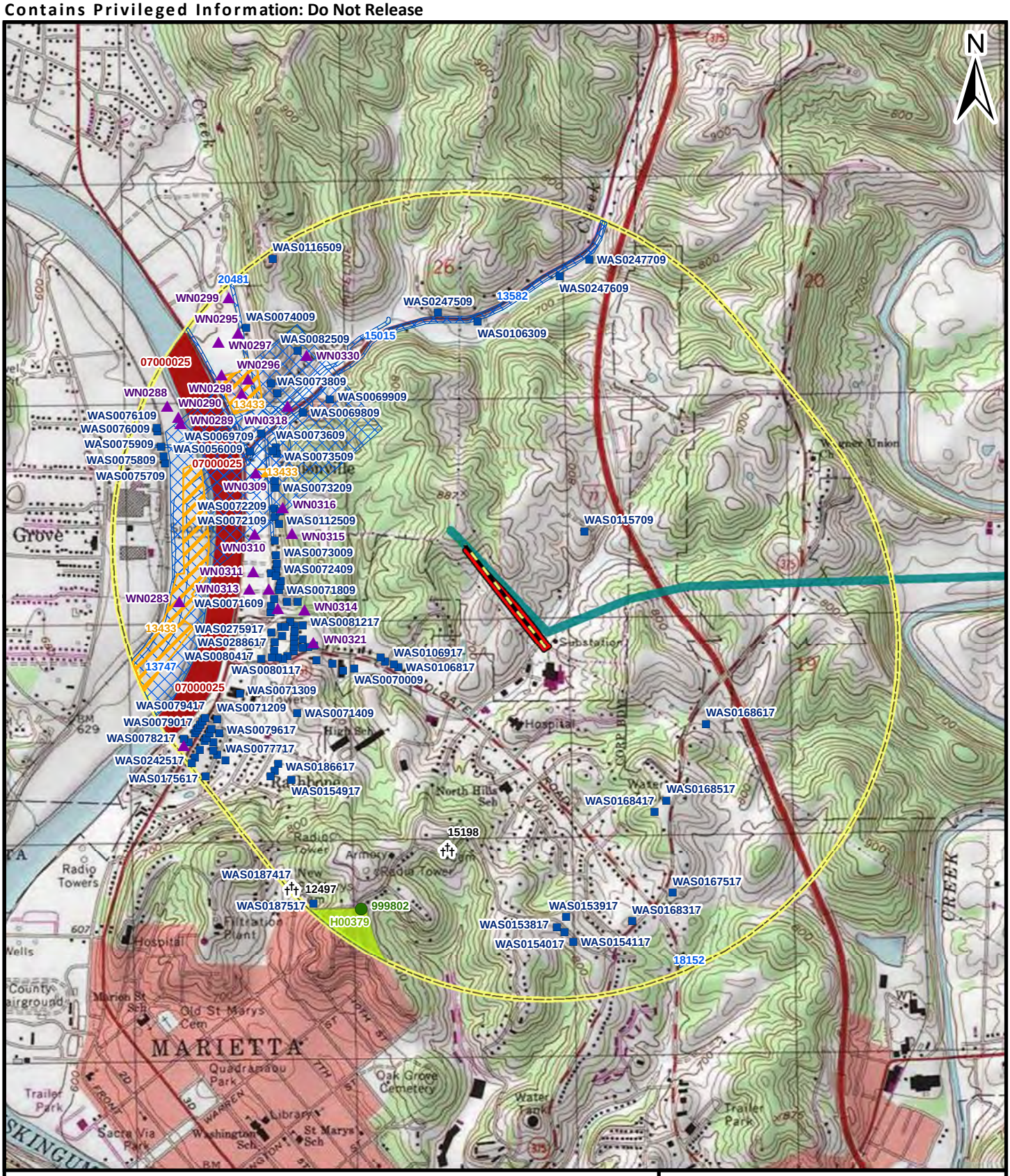

LEGEND:

- Archaeological Site
- OGS Cemetery
- NR Determinations of Eligibilty
- OHI Resource
- Previous Ph I Survey
- Previous Ph II Survey
- NR Boundary
- Previous Architectural Survey
- Mill Creek-Devola Centerline
- Project Area
- Bell Ridge-Devola Surveyed Area
- Project One-Mile Buffer

DATA SOURCES:
Base Map: USGS 7.5-minute Topographic Quadrangle: Marietta, OH (1978)
Cultural Resources: OHPO Online Mapping System, Accessed 10/23/2018

0 305 610
Scale in Meters

0 1,000 2,000
Scale In Feet

Devola to Mill Creek 138 kV Upgrade
Project Washington County, OH

FIGURE 3
PREVIOUSLY INVENTORIED CULTURAL RESOURCES

PN: 708056CH
DATE: 10/23/2018

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\\BROOKSIDEFILES\GIS_SHARE\ENBG\00_PROJ\A\AEP\MARIETTA_BELLRIDGE_DEVOLA\MAPS\CULTURAL\MILLCREEK_DEVOLA\FIG3_CR_INVENTORY.MXD AG017958 10/23/2018

2.1 National Register of Historic Places

One NRHP-listed historic district is located within the study area. The Muskingum River Navigation District stretches the length of the river, through Coshocton, Morgan, Muskingum, and Washington Counties. The portion of the district that passes through Washington County is approximately 1,015 meters (3,329 feet) to the west of the Project.

2.2 Determination of Eligibility Files

One resource that has been determined eligible for listing in the NRHP is located within the study area. The DOE-listed single dwelling is located approximately 1,459 meters (4,786 feet) southwest of the Project APE.

2.3 Ohio Historic Inventory

There are 114 OHI resources within the study area (Table 1). Of these, the majority (N=60) are identified as single dwellings. In addition, there are 41 OHI resources identified as a single residence and/or outbuilding, barn, carriage house/garage, or secondary residential building. The remaining resources include one barn, three carriage houses/garages, one mill/ processing facility, two orphanages, one service station, one barn, one agricultural outbuilding, one transportation resource, two cemeteries, and one resource of unknown use. One OHI-listed cemetery, the Washington County Children's Home Cemetery (WAS0071409), is not currently included in the OGS Cemetery Registry. None of the previously inventoried OHI resources is located within or adjacent to the current Project area (see Figure 3).

Table 1. Previously Inventoried OHI Resources within the Study Area.

OHI Number	Resource Name	Location	Resource Type	Date
WAS0056009	Bryon Talbot House	Devola	Single Dwelling	1875
WAS0069709	Ellen Snedicker House	Devola	Single Dwelling	1945
WAS0069809	Roy Donnelly House	Muskingum Township	Single Dwelling	1900
WAS0069909	Albert Lang House	Muskingum Township	Single Dwelling/Agricultural Outbuildings	1910
WAS0070009	Robert Baird House	Rathbone	Transportation	1939
WAS0070109	Susan & Klaus Wielitzka House	Rathbone	Mill/Processing/Manufacturing Facility	1939
WAS0070209	Ohio Department of Transportation	Rathbone	Unknown Use	N/A
WAS0070309	Washington County Garage	Rathbone	Service Station	1920
WAS0071209	Tewkesbury Family House	Rathbone	Orphanage	1941
WAS0071309	Washington County Children's Services	Rathbone	Orphanage	1880
WAS0071409	Washington County Children's Home Cemetery	Rathbone	Cemetery	1867
WAS0071509	Chuck Caldwell House	Unionville	Single Dwelling	1930
WAS0071609	Bonnie Landsittel House	Unionville	Single Dwelling	1930
WAS0071709	Lucille Darrah House	Unionville	Single Dwelling	1940

OHI Number	Resource Name	Location	Resource Type	Date
WAS0071809	S J Brockmeier House	Unionville	Single Dwelling/Agricultural Outbuildings	1900
WAS0072009	Claude Cameron House	Unionville	Carriage House/Garage	1900
WAS0072109	Tim Stevens House	Unionville	Single Dwelling/Agricultural Outbuildings	1900
WAS0072209	John Hammat House	Unionville	Single Dwelling	1900
WAS0072309	Patrick Lang Family House	Unionville	Single Dwelling	1900
WAS0072409	Clyde Hill House	Unionville	Single Dwelling	1900
WAS0072509	Robert Worstell House	Unionville	Single Dwelling/Agricultural Outbuildings	1920
WAS0072609	Jones/Walter House	Unionville	Single Dwelling/Agricultural Outbuildings	1910
WAS0072709	Pastor Robert Byers House	Unionville	Single Dwelling/Agricultural Outbuildings	1910
WAS0072809	Cecil Gossett House	Unionville	Single Dwelling	1920
WAS0072909	L Eugene Plummer House	Unionville	Single Dwelling	1890
WAS0073009	Roy Wallace House	Unionville	Single Dwelling/Barn	1890
WAS0073109	Lloyd & Ethel Noland House	Unionville	Single Dwelling	1919
WAS0073209	Thrasher	Unionville	Single Dwelling	1880
WAS0073309	Carl Rose Jr House	Unionville	Single Dwelling/Agricultural Outbuildings	1880
WAS0073409	James Weeks	Unionville	Single Dwelling	1910
WAS0073509	Bernard Barth House	Unionville	Single Dwelling/Agricultural Outbuildings	1890
WAS0073609	Ohio Dept of Transportation	Unionville	Single Dwelling/Agricultural Outbuildings	1900
WAS0073709	Ohio Dept of Transportation	Unionville	Single Dwelling	N/A
WAS0073809	Ohio Dept of Transportation	Devola	Single Dwelling/Barn	1900
WAS0073909	Washington County Garage	Devola	Single Dwelling	1920
WAS0074009	Marietta Structures Corp	Devola	Single Dwelling	1943
WAS0075709	J Reckard House	Oak Grove	Single Dwelling/Agricultural Outbuildings	1854
WAS0075809	Barn	Oak Grove	Barn	1854
WAS0075909	ODOT	Oak Grove	Single Dwelling	N/A
WAS0076009	Washington Co Children's Svc	Oak Grove	Single Dwelling/Agricultural Outbuildings	1890
WAS0076109	Washington Co Children's Home Cemetery	Oak Grove	Single Dwelling	1900

OHI Number	Resource Name	Location	Resource Type	Date
WAS0077717	EL Buell House/Cram House	Marietta	Single Dwelling	1890
WAS0077817	Cram et al	Marietta	Single Dwelling	1900
WAS0077917	Cram et al	Marietta	Single Dwelling	1929
WAS0078117	Cram House/J Weeks House	Marietta	Single Dwelling	1900
WAS0078217	Robert Rudolph	Marietta	Single Dwelling	1900
WAS0078317		Marietta	Single Dwelling	1920
WAS0078417	Pearl Thrasher House	Marietta	Single Dwelling/Carriage House/Garage	1880
WAS0078517		Marietta	Single Dwelling/Carriage House/Garage	1920
WAS0078617		Marietta	Single Dwelling	1874
WAS0078717	Farm (Windy Point)	Marietta	Single Dwelling/Carriage House/Garage	1880
WAS0078817	Graham Farm	Marietta	Single Dwelling/Carriage House/Garage	1915
WAS0078917	Graham Farm	Marietta	Carriage House/Garage	1915
WAS0079017	Millgate Farm	Marietta	Single Dwelling	1880
WAS0079117	Millgate Farm Barn	Marietta	Single Dwelling	1920
WAS0079217	Carl Boughton Farm	Marietta	Single Dwelling/Carriage House/Garage	1915
WAS0079317	C & N O'Brien House	Marietta	Single Dwelling/Carriage House/Garage	1930
WAS0079417	C & N O'Brien Barn	Marietta	Single Dwelling/Carriage House/Garage	1920
WAS0079517	Charles & Norma O'Brien	Marietta	Single Dwelling/Carriage House/Garage	1900
WAS0079617	Alfa Ralston	Marietta	Carriage House/Garage	1900
WAS0079717	Alfa Ralston	Marietta	Single Dwelling	1900
WAS0079817	Ralston	Marietta	Single Dwelling/Carriage House/Garage	1937
WAS0079917	Ralston	Marietta	Single Dwelling	1880
WAS0080017	Ralston	Marietta	Single Dwelling/Carriage House/Garage	1920
WAS0080117	Morris Chalfant	Marietta	Single Dwelling	1910
WAS0080217	Bartlett House	Marietta	Single Dwelling	1920
WAS0080317	Foster House	Marietta	Single Dwelling/Carriage House/Garage	1910
WAS0080417	Joyce Cassidy House	Marietta	Single Dwelling/Carriage House/Garage	1880
WAS0080517		Marietta	Single Dwelling/Carriage House/Garage	1920

OHI Number	Resource Name	Location	Resource Type	Date
WAS0080617	CD Gates House	Marietta	Single Dwelling/Carriage House/Garage	1937
WAS0080717	G C Stewart House	Marietta	Single Dwelling/Carriage House/Garage	1925
WAS0080817	Bob Davis House	Marietta	Single Dwelling/Secondary Structure (Residential)	1910
WAS0080917		Marietta	Single Dwelling/Carriage House/Garage	1890
WAS0081117	Carol Povlick House	Marietta	Single Dwelling/Carriage House/Garage	1900
WAS0081217	Walter Hallock House	Marietta	Single Dwelling	1920
WAS0081317	Anna Heiney House	Marietta	Single Dwelling	1920
WAS0081517	Bruce Repert House	Marietta	Single Dwelling	1920
WAS0082509		Devola	Single Dwelling	1860
WAS0106309	Viola Frederick House	Muskingum Township	Single Dwelling/Agricultural Outbuildings	1870
WAS0106817	Arthur Jones House	Marietta	Single Dwelling	1935
WAS0106917	Gerald Smith House	Marietta	Single Dwelling	1935
WAS0107017	Keith & Marilyn Brum House	Marietta	Single Dwelling/Agricultural Outbuildings	1920
WAS0107117	Roy McBurney House	Marietta	Single Dwelling	1900
WAS0112509	Jane Kichelde House	Unionville	Single Dwelling/Agricultural Outbuildings	1910
WAS0115709	Nancy Strecker Garage	Muskingum Township	Single Dwelling/Agricultural Outbuilding	1890
WAS0116509	Ruth Morgan House	Devola	Single Dwelling	1915
WAS0153817	Al Vargo House	Marietta	Single Dwelling	N/A
WAS0153917	Mildred Rose House	Marietta	Single Dwelling	1920
WAS0154017	David Hanley House	Marietta	Single Dwelling	1890
WAS0154117	Ruth Mansfield/Reuben Cisler House	Marietta	Single Dwelling	1880
WAS0154917	Lewis & George Cook Property	Marietta	Single Dwelling/Carriage House/Garage	1900
WAS0167517	Marietta College	Marietta	Agricultural Outbuildings	1879
WAS0168317	Robert Cole House	Marietta	Single Dwelling	1840
WAS0168417	Richard Wendelken	Marietta	Single Dwelling	1935
WAS0168517	Oley Carpenter House	Marietta	Single Dwelling	1939
WAS0161817	Byron Talbot House	Marietta	Single Dwelling	1920
WAS0175617	Harry C Schimmel House	Marietta	Single Dwelling	1900
WAS0186617	Mary Wharton House	Marietta	Single Dwelling/Carriage House/Garage	1910

OHI Number	Resource Name	Location	Resource Type	Date
WAS0186717	Janine Eddy House	Marietta	Single Dwelling	1920
WAS0186817	Scott Gugler House	Marietta	Single Dwelling	1920
WAS0187417	Saint Mary's Cemetery	Marietta	Cemetery	1880
WAS0187517	Jenny Friend House	Marietta	Single Dwelling	1910
WAS0242517	Margaret E Young House	Marietta	Single Dwelling	1906
WAS0247509	Lewis & George Cook Property	Devola	Single Dwelling	1910
WAS0247609	Lewis & George Cook Property	Muskingum Township	Single Dwelling	1920
WAS0247709	Terry Morris House	Muskingum Township	Single Dwelling	1990
WAS0275817	George Delph House	Marietta	Single Dwelling	1940
WAS0275917	Rick Baker House	Marietta	Single Dwelling/Carriage House/Garage	1880
WAS0276017	Elizabeth Hoff House	Marietta	Single Dwelling	1890
WAS0276117	Lewis & George Cook Property	Marietta	Single Dwelling/Agricultural Outbuildings	1920
WAS0286217	Lewis & George Cook Property	Marietta	Single Dwelling	1920
WAS0286609	Sam & Joan McMannes House	Oak Grove	Single Dwelling/Agricultural Outbuildings	1840
WAS0288617	Lewis & George Cook Property	Marietta	Single Dwelling	1926
WAS0290709	S Belville House	Unionville	Single Dwelling/Carriage House/Garage	1900

2.4 Ohio Archaeological Inventory

A total of 24 archaeological sites have been inventoried within the study area (Table 2). This includes 17 prehistoric sites, four historic sites, and two sites with both prehistoric and historic components. Of the prehistoric sites, 14 have no temporal affiliation, one is a Late Archaic site, and one is a Late Woodland through Late Prehistoric site. The previously inventoried historic sites span the late eighteenth century through the twentieth century. The multiple component sites include three sites with unknown temporal affiliations and one site with Late Archaic through Late Prehistoric and historic components. The previously inventoried sites are concentrated on low terraces along the Muskingum River, to the east of the Project area, and along Second Creek, north of the Project area. None of these sites is within or adjacent to the current Project area.

Table 2. Previously Inventoried OAI Resources within the Study Area.

OAI Number	Cultural Affiliation	Site Type
33WN0283	Prehistoric: Late Archaic, Early Woodland, Middle Woodland, Late Woodland, Late Prehistoric; Historic	Habitation
33WN0288	Prehistoric: Unknown Affiliation	Unknown
33WN0289	Prehistoric: Unknown Affiliation	Unknown

OAI Number	Cultural Affiliation	Site Type
33WN0290	Prehistoric: Unknown Affiliation	Unknown
33WN0294	Prehistoric: Late Archaic	Unknown
33WN0295	Prehistoric: Unknown Affiliation; Historic	Unknown
33WN0296	Prehistoric: Unknown Affiliation	Unknown
33WN0297	Prehistoric: Unknown Affiliation	Unknown
33WN0298	Prehistoric: Unknown Affiliation	Unknown
33WN0299	Prehistoric: Unknown Affiliation	Unknown
33WN0309	Historic: 1850-1879, 1880-1899, 1900-1929, 19th Century, 20th Century	Habitation
33WN0310	Prehistoric: Unknown Affiliation	Unknown
33WN0311	Prehistoric: Unknown Affiliation	Unknown
33WN0312	Prehistoric: Unknown Affiliation	Unknown
33WN0313	Prehistoric: Unknown Affiliation; Historic	Unknown
33WN0314	Historic: Unspecified	Habitation
33WN0315	Prehistoric: Unknown Affiliation	Unknown
33WN0316	Historic: Unspecified	Habitation
33WN0318	Prehistoric: Late Woodland, Late Prehistoric	Unknown
33WN0319	Prehistoric: Unknown Affiliation	Unknown
33WN0321	Prehistoric: Unknown Affiliation	Unknown
33WN0322	Prehistoric: Unknown Affiliation	Unknown
33WN0330	Historic: Unspecified	Artifact Scatter

2.5 Ohio Genealogical Society Cemetery Files

There are two OGS cemeteries within the study area (see Figure 3). The location of “Unidentified #1” cemetery (OGS ID 15198), is described as “just south of the northernmost portion of Cisler Drive, about halfway between [the] radio tower/armory and North Hills School.” The cemetery is situated approximately 1,445 meters (4,739 feet) south of the current Project. The New Saint Mary’s Cemetery (OGS ID 14297; OHI #WAS0187417) is located in Marietta, at the intersection of Montgomery Street and Saint Mary’s Avenue.

In addition, the Washington County Children’s Home Cemetery (WAS0071409) is not included in the OGS files; however, it is an OHI-listed resource, located approximately 177 meters (580 feet) north of the current Project.

2.6 Cultural Resources Investigations

Eight previous cultural resources investigations were completed within 1.6 kilometers (one mile) of the Project area (see Figure 3). Seven of the eight previous investigations have occurred north and west of the Project area (Crider 2009; DeRegnaucourt 1994; Mustain et al. 1994, 1996; Orr and Gasbarro 1996; Sprague et al 1994; and Weller 2017), along Second Creek and the Muskingum River, as well as on the west bank of the river in Oak Grove; however, one previous investigation, for the Bell Ridge to Devola 138 kV Transmission Line Project, occurred within the current Project area (Spurgeon and Favret 2018).

Table 3. Previous Cultural Resources Investigations within the Study Area.

Survey Number	Phase	Author(s)	Year	Title
13433	II	Mustain et al.	1996	Phase II Assessment Survey of 33WN283, 33WN285, 33WN294, 33WN309, and Was-735-9 for the Proposed North Muskingum River Crossing Bridge Project in Muskingum Township, Washington County, Ohio.
13582	I	Orr and Gasbarro	1996	A Cultural Resources Survey and Evaluation of the Was-821-0.75 (PID 10496) Roadway Improvements Project, Muskingum Township, Washington County, Ohio
13747	I	Mustain et al.	1994	Literature Review and Reconnaissance Survey of the North Muskingum River Crossing Bridge in Muskingum Township, Washington County, Ohio
13750	I	Sprague et al.	1994	Addendum To Literature Review and Reconnaissance Survey of the North Muskingum River Crossing Bridge in Muskingum Township, Washington County, Ohio
15015	I	DeRegnaucourt	1994	A Phase I Archaeological Reconnaissance and Literature Search of the Highland Ridge Water and Sewer Association Water Extension Lines near Marietta in Washington County, Ohio
18152	I	Crider	2009	Phase I Cultural Resources Report for the PK 122 Glendale Cellular Tower in Marietta, Washington County, Ohio
20481	I	Weller	2017	Phase I Cultural Resource Management Investigations for the Approximately 1.8 km (1.1 mi) Long Devola Multiuse Trail in Muskingum Township, Washington County, Ohio
N/A	I	Spurgeon and Favret	2018	Phase I Archaeological Reconnaissance for American Electric Power Bell Ridge to Devola 138 kV Transmission Line Project in Aurelius, Salem, Adams, and Muskingum Townships, Washington County, Ohio

2.6.1 Previous Investigations within the Project Area

In 2017, CH2M Hill (CH2M, now part of Jacobs) conducted a Phase I Archaeological Reconnaissance survey for the Bell Ridge - Devola 138 kV Transmission Line Project in Aurelius, Salem, Adams, and Muskingum Townships, Washington County (Spurgeon and Favret 2018). This survey examined the entire Bell Ridge to Devola corridor for cultural resources. Large portions of the APE were subjected to pedestrian survey due to excessive slope. Two historic archaeological sites were identified during the Phase I survey: 33WN502 and 33WN503. Neither site contained subsurface deposits, nor are they eligible for inclusion on the NRHP. CH2M received concurrence with its recommendations from the OHPO in a letter dated February 12, 2018 (Horrocks 2018).

2.6.2 Previous Phase I Investigations within the Study Area

In 1994, a Phase I literature review and reconnaissance survey was conducted for the Highland Ridge Water and Sewer Association of Marietta, Ohio, and SIECO, Inc. for the multiple water line project in Washington County (DeRegnaucourt 1994). The investigation identified two archaeological sites: 33WN330 and 33WN331 (DeRegnaucourt 1994). Site 33WN330 is a small diffuse historic artifact scatter, and site 33WN331 consists of two small debitage and one unidentified lithic fragment (DeRegnaucourt 1994). These sites are not eligible for listing on the NRHP, and no further work was recommended (DeRegnaucourt 1994)

In 1994, ASC conducted a literature review and reconnaissance survey of the North Muskingum Crossing Bridge, in Muskingum Township, Washington County (Mustain et al 1994). The archaeological survey identified 49 sites, including 15 prehistoric lithic scatters, 14 prehistoric lithic isolated find spots, three prehistoric lithic scatter/historic scatters, two prehistoric lithic and ceramic scatter/historic scatter sites, two house sites, two developing springs, and one prehistoric lithic find spot/historic scatter site (Mustain et al 1994). Of these, four sites (33WN288, 33WN290, 33WN295, and 33WN313) were recommended as potentially eligible for listing in the NRHP (Mustain et al 1994).

In 1996, the Ohio Department of Transportation - Office of Environmental Services (ODOT-OES) conducted a cultural resources survey and evaluation for proposed roadway improvements in Muskingum Township (Orr and Gasbarro 1996). The survey did not identify any archaeological sites, and no further archaeological investigations were recommended. Seven architectural and historical resources were identified, none of which is eligible for inclusion in the NRHP (Orr and Gasbarro 1996).

Weller & Associates, Inc. conducted a Phase I cultural resources management investigation for the Devola Multiuse Trail in Muskingum Township (Weller 2017). The project area was found to contain extensive disturbance, and no cultural resources were identified during the investigation. No additional work was recommended (Weller 2017).

In 2009, EMH&T conducted a Phase I cultural resources survey for a proposed cellular tower location in Marietta (Crider 2009). The investigation examined a total of 0.27 hectares (0.67) acres, including an access road and the cell tower site, located on a wooded hilltop in the northeastern part of Marietta. No cultural resources were identified during the investigation and no additional work was recommended (Crider 2009).

In December 1994 and May 1995, ASC conducted a Phase II NRHP eligibility assessment survey for Dodson-Stilson, Inc., of archaeological sites 33WN283, 33WN284, the prehistoric component of 33WN285 and 33WN294, the historic components of 33WN285 and 33WN309, and architectural resource WAS-753-9 (Mustain et al 1996). As a result of the evaluation, site 33WN294 was delineated to have overlapping Late Archaic camp sites and determined eligible to meet Criterion D of the NRHP (Mustain et al 1996). A Phase III data recovery was recommended for this site. Site 33WN283 includes a small Late Archaic component and extensive Late Woodland component. This site appears to be several adjacent or overlapping habitation areas, likely associated with the Late Woodland Newton culture (Mustain et al 1996). Site 33WN283 was determined eligible for the NRHP under Criterion D. Site 33WN285 consists of a historic house feature that may be eligible for inclusion in the NRHP (Mustain et al 1996). A Phase III data recovery was recommended for this site (Mustain et al 1996). Site 33WN309 is also a historic house site dating from the mid-nineteenth through mid-twentieth century. This site is also eligible for inclusion on the NRHP under Criterion D (Mustain et al 1996).

2.7 Historic Maps and Atlases

In addition to a review of previously recorded cultural resources, Jacobs also reviewed available online historic mapping. In Washington County, historic atlases from 1858 (Gardner) and 1875 (Titus and Simon) were examined, as was the Mills 1914 Archaeological Atlas of Ohio.

2.7.1 Washington County

The 1858 Gardner atlas shows the established city of Marietta and the city of Lowell to the north along the Muskingum River. The western portion of modern-day Marietta, on the opposite bank of the Muskingum River, is depicted as Harmar, before it was incorporated into Marietta (Gardner 1858). The small town of Devola to the north of Marietta had not yet been developed in 1858; however, the area appears to have been parceled for future development. The area within Union, Fearing, and Lawrence townships is depicted as predominately rural, with dispersed farmsteads and residences located throughout (Gardner 1858). Little development is seen outside of the city center at Marietta. Review of the 1875 Titus and Simon atlas maps show that the area was largely unchanged from 1858 (Titus and Simon 1875). These maps again present the area as largely rural and agrarian outside of the town centers at Marietta. However, by 1875, the city of Marietta had developed and expanded to the north, and the development of the M. P. & C Railroad can be seen.

2.7.2 Mills Archaeological Atlas of Ohio

In addition to the historic atlases above, the 1914 archaeological map “Archaeological Atlas of Ohio …” was also consulted (Mills 1914). Similar to other maps of its time (e.g., Guernsey 1932), this map depicts archaeological resources at a county-wide scale and is the result of early survey work conducted by the Ohio State Museum. The Mills map provides an overview of archaeological resources across the county,

including mounds, earthwork enclosures, village sites, Native American trails, burials, cemeteries, stone graves, effigy mounds, petroglyphs, flint quarries, caches, and rock shelters (Mills 1914).

In Washington County, Mills' map does not depict any archaeological resources within the current Project area; however, there is one burial mound site within Township T3N, Range R8W, and Section S25. This location appears near the end of the Bell Ridge to Devola transmission line alignment, in the vicinity of the Devola substation, east of the Muskingum River. Although the scale and detail of the Mills atlas is limited, the mound location appears to be east of the current Project area. In addition, this resource was not located during the previous Bell Ridge to Devola Phase I archaeological investigations (see Spurgeon and Favret 2018).

Several other noteworthy features beyond the Project alignment but within Washington County are included in Mills' atlas. For instance, three additional burial mound sites are depicted south of the Project, north of Marietta. Further, the Marietta Earthworks are depicted within the confines of the city of Marietta. These complex earthworks are associated with the Hopewell Culture, and once consisted of two square enclosures of 50 and 27 acres, several rectangular flat-topped mounds, a large conical mound surrounded by a ditch, and a set of earthen walls extending from the largest square enclosure to the Muskingum River (Mills 1914). The city of Marietta was developed on top of this earthwork complex; however, remnants of the large conical mound can be seen today in Mound Cemetery. Mills' map also depicts two Native America trails to the west of the Muskingum River. These are the Cuyahoga-Muskingum Trail, and "Trail No. 13" (Mills 1914). Finally, a Native American village site name "Kosh-kosh-kung" is shown in far eastern Washington County, outside of the Project area.

3. Summary and Conclusions

This document has presented the results of the records review for the Devola – Mill Creek 138 kV Transmission Line Project. The Project includes the construction of a new 593-meter (1,944-foot) long 138 kV transmission line connecting the existing Mill Creek and Devola Substations in Washington County, Ohio.

Considering that the current Project is flanked by two existing transmission lines that have already impacted the viewshed of the immediate area, the APE considered only potential Project direct impacts to cultural resources. For the Project, the APE was defined as the land proposed for ground disturbance, which includes the entirety of the proposed construction corridor centered on the preferred alignment. The APE consists of excessively sloped terrain, with disturbance from the existing transmission lines at both ends of the alignment.

The records review identified 114 OHI resources, 24 OAI archaeological sites, one NRHP-eligible resource (Determination of Eligibility files), and two OGS cemeteries within 1.6 kilometers (one mile) of the Project (see Figure 3). No historic bridges or NHLs were identified during the review. In addition, eight previous cultural resources investigations have been conducted within the study area, including the 2017 CH2M Phase I reconnaissance survey for the Bell Ridge - Devola 138 kV Transmission Line Project, which intersects the current project area at the eastern end of the alignment. Of the total 142 cultural resources inventoried within the study area, none is within or adjacent to the project area.

Ultimately, the records review indicated that while a number of cultural resources have been identified in more favorable landforms in the vicinity of the Project area, due to the excessive slope within the Project alignment, the likelihood that cultural resources that may meet eligibility criteria for inclusion in the NRHP is low. Therefore, Jacobs recommends no additional archaeological work within the project area. Should AEP Ohio Transco encounter unanticipated cultural resources during construction, work will stop, and a qualified cultural resources professional will examine the discovery to determine the need for additional cultural resources investigations. The OHPO will be notified of the discovery and consulted regarding the nature and extent of work required.

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OHIO HISTORY CONNECTION

In reply, refer to
2017-WAS-38214

September 17, 2018

Amy C. Favret
ch2m
1880 Waycross Road
Cincinnati, OH 45240
Amy.favret@jacobs.com

RE: Addendum Letter Report: Macksburg to Devola 139kV Transmission Line Project, Aurelius, Salem, Adams, and Muskingum Townships, Washington County, Ohio

Dear Ms. Favret:

This letter is in response to the correspondence received on September 17, 2018 regarding the proposed Addendum Letter Report: Macksburg to Devola 138kV Transmission Line Project, Aurelius, Salem, Adams, and Muskingum Townships, Washington 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 4906-4). 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 Addendum Letter Report submitted by ch2m (2018) regarding additional Phase I archaeological reconnaissance in Aurelius and Muskingum Townships, Washington County, Ohio. A total of 0.36 hectares (0.89 acres), which included two access roads, were surveyed for this additional investigation. No previously identified cultural resources are located within the project area and no new archaeological sites were identified during this survey. Based on the information provided, we agree with your determination of no historic properties affected.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1075647

OHIO HISTORY CONNECTION

In reply, refer to
2018-WAS-40808

February 12, 2018

Ms. Amy C. Favret
CH2M Hill Engineers, Inc.
400 E. Business Way, Suite 400
Cincinnati, OH 45241
amy.favret@ch2m.com

RE: Bell Ridge to Devola 138 kV Transmission Line Project, Lawrence, Fearing, and Muskingum Townships, Washington County, Ohio

Dear Ms. Favret:

This letter is in response to the correspondence received on January 16, 2018, January 29, 2018 and the revised archaeology report received February 8, 2018 regarding the proposed Bell Ridge to Devola 138 kV Transmission Line Project, Lawrence, Fearing, and Muskingum Townships, Washington 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 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Reconnaissance for American Electric Power Bell Ridge to Devola 138 kV Transmission Line Project in Lawrence, Fearing and Muskingum Townships, Washington County, Ohio* by CH2M (2018).

A literature review, visual inspection, pedestrian survey, and shovel test unit excavation was completed as part of the investigations. No previously inventoried Ohio Archaeological Inventory (OAI) sites are located within the project area. Two (2) new OAI sites were identified during the survey. OAI#33WN0502 is a historic artifact site scatter, likely a dumping location associated with the original house on the property, built in the 1930's, which is no longer standing. OAI#33WN0503 is a historic artifact site scatter and partial brick wall pared with concrete. The sites are not recommended as eligible for listing in the NRHP. Based on the information provided, we agree the archaeological sites are not eligible for listing in the NRHP and no further archaeological work is necessary.

Please complete your associated site inventory as soon as possible. Project associated inventory should be completed and submitted concurrent with submission of your survey documentation for our comments. Following IForm submission procedure, please send a notification to the survey manager (archsurvey@ohiohistory.org, or directly at beberhard@ohiohistory.org) so that the manager is aware your inventory is prepared, complete, and ready for review.

The following comments pertain to the *Architectural and Historic Resources Report: AEP Ohio Transco Bell Ridge to Devola 138 kV Transmission Line Project, Lawrence, Fearing and Muskingum Townships, Washington County, Ohio* by CH2M (2018).

The investigations included a background literature review and systematic survey of properties fifty years of age or older that are situated within 1,000' on either side of the proposed centerline. Fourteen architectural and historical resources were identified within the APE. CH2M recommends that none of

RPR Serial No: 1072031, 1072503

these properties are eligible for listing in the National Register of Historic Places (NRHP) due to a lack of architectural and/or historic significance, and lack of integrity. Our office agrees with CH2M's recommendations regarding eligibility.

The results of the architectural investigation identified no historic properties located within the APE that exhibit potential significance for inclusion in the National Register of Historic Places. Therefore, we agree that the project as proposed will have no effect on historic properties.

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 khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1072031, 1072503

Appendix D Ecological Resources Inventory Report

Ecological Resources Inventory Report

American Electric Power

Proposed Mill Creek – Devola 138 kV Transmission Line Project

Washington County, Ohio

Prepared for

October 2018

JACOBS

400 E Business Way, Suite 400
Cincinnati, OH 45241

Contents

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Acronyms and Abbreviations

AEP	American Electric Power
CWA	Clean Water Act
DBH	Diameter at breast height
ESA	Environmental study area
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
ID	Identification
Jacobs	Jacobs Engineering Group, Inc.
kV	Kilovolt
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High-Water Mark
ORAM	Ohio Rapid Assessment Method
PHWH	Primary Headwater Habitat
Project	Proposed Mill Creek – Devola 138 kV Transmission Line Project
ROW	Right-of-way
TNW	Traditionally Navigable Water
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1 Introduction

This Ecological Resources Inventory Report summarizes the results of the wetland and waterbody delineation conducted on May 18, 2017 in Washington County, Ohio by Jacobs Engineering Group, Inc. (Jacobs) for the American Electric Power (AEP) Proposed Mill Creek – Devola 138 kV Transmission Line Project (Project).

AEP is proposing to construct a new 138 kV electric transmission line that will connect the future Devola Substation and the existing Mill Creek Substation located approximately 0.4-mile to the southeast. This report covers the 150-foot wide environmental study area (ESA) between the proposed and existing substations.

- Figure 1 provides an overview map of the study area based on a U.S. Geological Survey (USGS) topographic map.
- Figures 2 provides the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) mapped soil units, and Table 3-1 lists the soils types identified within the study area.
- Figures 3 provides National Wetland Inventory (NWI) wetland information and National Hydrology Dataset (NHD) stream information identified within the study area.
- Figure 4 provides the field delineated waterbodies identified within the study area.
- Appendix A contains Ohio Environmental Protection Agency Primary Headwater Habitat Evaluation Index (HHEI) forms.
- Representative photo documentation is provided in Appendix B.
- Appendix C contains threatened and endangered species consultation letter responses from the Ohio Department of Natural Resources (ODNR) and United States Fish and Wildlife Service (USFWS).

2 Background Information

This section describes the Project ESA and methodology used during the wetland and waterbody delineation field surveys.

2.1 Environmental Study Area

The proposed electric transmission line extends approximately 0.4 miles northwest of the existing Mill Creek Substation to the future Devola Substation, near the community of Devola, Ohio. The ESA is comprised of a 150-foot wide survey corridor between the existing and proposed substations. The right-of-way (ROW) proposed for this Project will be 100-feet wide.

The Project is located within the Marietta Plateau region of the Appalachian Plateaus physiographic province (ODNR, 1998). The Marietta Plateau region is characterized by high relief and elevations between 515 and 1,400 feet above sea level. Pennsylvanian-age Upper Conemaugh Group through Permian-age Dunkard Group cyclic sequences of red and gray shales, siltstones, sandstones, limestone, and coal characterize the geology of the area. Pleistocene-age Minford clay, red and brown silty clay loam colluvium, and landslide deposits are also notable geologic characteristics of the area (ODNR, 1998).

Review of the USGS 7.5-minute topographic map of the area (USGS, 1975) indicates the ESA has a rolling hill topography ranging from 680 to 870 feet above sea level. The future Devola substation site is located on a ridge top and the proposed transmission line will descend to the existing Mill Creek Substation, just south of Mill Creek Road.

Land use and vegetation communities observed within the ESA includes existing utility ROW, and upland forest, in addition to the identified waterbodies.

2.1.1 Annual Precipitation

Monthly rainfall data for Devola, Ohio were unavailable from the National Oceanic and Atmospheric Administration (NOAA); therefore, rainfall data for Columbus, Ohio was reviewed. Rainfall recorded in Columbus, Ohio, was above normal for 10 of the last 12 months leading up to the survey (Table 2-1; NOAA, 2015-2017). The total rainfall for 2015 was seven inches greater than the average.

Table 2-1. Precipitation in Columbus, Ohio
Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2015 Columbus Monthly Sum [1, 3]	2.87	1.70	3.92	4.09	3.56	6.72	5.41	3.59	3.21	2.68	2.37	4.88
2016 Columbus Monthly Sum [1, 3]	2.73	3.29	4.27	2.31	2.74	5.22	2.49	5.82	4.68	1.73	1.02	3.09
2017 Columbus Monthly Sum [1, 3]	2.83	2.63	5.39	2.59	5.24	4.66	8.55	-	-	-	-	-
Historic Columbus Normal Precip.[2,3]	1.12	2.25	3.02	3.40	4.17	4.01	4.79	3.32	2.84	2.61	3.20	2.97

[1]NOAA Monthly Weather Summary 2015, 2016, 2017 (Columbus, OH)

[2] Historic precipitation is based on measurements from 1981 to 2010.

[3]Displayed in inches

2.1.2 Drainage Basins

The ESA is within the Muskingum Watershed 8-digit Hydrologic Unit Code (HUC 05040004) and crosses one 12-digit HUC (05040041204) Devola Run-Muskingum River (USEPA, 2017).

2.1.3 Traditional Navigable Waters

The U.S. Environmental Protection Agency (USEPA) and USACE assert jurisdiction over “all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce including all waters which are subject to the ebb and flow of the tide” (USACE and USEPA, 2008). The closest traditional navigable waters (TNW) and Section 10 stream to the Project area is the Muskingum River (USACE, 2009 and 2016). The five streams within the ESA are unnamed tributaries to the Muskingum River.

3 Wetland and Waterbody Delineation

3.1 Desktop Review

Prior to conducting the field investigations, Jacobs reviewed the following resources to identify the potential for wetlands or waterbodies within the ESA:

- Aerial photo-based maps (Google, 2016)
- USGS topographic maps (USGS, 1975)
- NRCS Web Soil Survey (NRCS, 2016)
- NWI maps (USFWS, 2015)
- National Hydrography Dataset (NHD) (USGS, 2015)

According to the NRCS soil survey of Washington County (NRCS, 2016), eight soil map units are crossed by the ESA. None of the soil map units are listed as hydric or predominantly hydric; one unit is listed as predominantly non-hydric and the remaining seven units are listed as not hydric (Figure 2; Table 3-1). NRCS data indicate that predominantly non-hydric soils comprise approximately 1.2 acres (15 percent) of the ESA. Approximately 6.7 acres (85 percent) of land cover in the ESA is comprised of not hydric soils.

Generally, hydric soils are those soils that indicate through their color and structure that they have experienced dominantly reducing (i.e. oxygen poor) conditions. Oxygen-poor conditions result from inundation and/or saturation by water. Partially hydric soils have both hydric and non-hydric soil components identified in the mapped soil unit.

The NWI database (USFWS, 2015) identifies the type of wetland or open water present at a location using the U.S. Fish and Wildlife Service (USFWS) classification system (Cowardin et al., 1979). The NWI data indicate that one NWI mapped feature is located within the ESA, a riverine, unknown perennial waterbody with an unconsolidated bottom that is permanently flooded (R5UBH). This mapped feature was field verified as stream SDS106. (Figure 3, shown as blueline feature) (USFWS, 2015).

Table 3-1. Hydric Soil Ratings Summary

Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Abbreviation	Soil Map Unit Name	Hydric Classification	Acres within Area of Delineation	Percent within Area of Delineation
DsG	Dekalb and Gilpin stony soils, 25 to 70 percent slopes	Not Hydric	0.90	11.5%
Mos1AF	Moshannon silt loam, 0 to 3 percent slopes, frequently flooded	Predominantly Non-Hydric	1.15	14.6%
Uf	Udorthents, clayey	Not Hydric	0.12	1.6%
UpC	Upshur silty clay loam, 6 to 12 percent slopes	Not Hydric	2.62	33.3%
UpE	Upshur silty clay loam, 15 to 25 percent slopes	Not Hydric	0.86	11.0%
UsF	Upshur-Gilpin complex, 25 to 35 percent slopes	Not Hydric	1.56	19.8%
UTG	Upshur association, very stony, 25 to 70 percent slopes	Not Hydric	0.20	2.5%
ZnB	Zanesville silt loam, 2 to 6 percent slopes	Not Hydric	0.45	5.7%
Grand Total			7.87	

Source: Soil Survey Staff, NRCS, USDA. 2016. Soil Survey Geographic (SSURGO) Database for Ohio.

3.2 Field Survey Methodology

Wetland boundaries, if present, were field-delineated according to Section 404 of the Clean Water Act (CWA) and the routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers' Wetlands Delineation Manual* and subsequent guidance documents (USACE, 1987) and according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (USACE, 2012). Wetland delineation data if present was recorded on the USACE Regional Supplement wetland determination data forms.

Representative upland data points were recorded during the wetland delineation to determine the presence/absence of wetlands and/or document upland conditions within the ESA. These data points were determined not to be within wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils.

Jurisdictional streams were identified as those waters that possessed a defined bed and bank and OHWM indicators and lacked a dominance of upland vegetation in the channel. For these waterbodies, the ordinary high-water mark (OHWM) was used as the jurisdictional boundary.

The outer boundaries of each wetland and waterbody within the ESA were delineated and recorded using handheld global positioning system (GPS) units. As wetland and waterbody features were collected, they were each assigned a unique feature identification (ID). Each feature collected received a unique feature identifier of DLLNNN, as outlined below. When data point features were associated with wetlands or their associated upland data points, comments were recorded on the data sheets.

D = Data Type (W for Wetland; S for Stream; P for Pond; and DP for Data Point)

LL = Initials of Field Survey Lead

NNN = Feature Number (for each feature of a specific ID combination)

According to recent guidance from the USEPA and USACE, wetlands that are adjacent to or have a significant nexus to TNWs are regulated under Sections 401 and 404 of the CWA (USEPA and USACE, 2008). A significant nexus must meet criteria that indicate the wetland provides biological, physical, or chemical benefits to the TNW. A significant nexus includes consideration of both hydrologic and ecologic factors. The closest downstream TNW to the ESA is the Muskingum River, which flows approximately 0.6 miles west of the ESA. All the streams in the ESA are tributaries to the Muskingum River.

The OEPA also requires classification of streams and wetlands, if present, according to OEPA methods in order to establish the "quality" of these waterbodies in accordance with the Ohio Water Quality Standards (Ohio Administrative Code [OAC] Section 3745, 2003). The standards dictate the level of permitting and mitigation required for impacts to the wetlands. Accordingly, each identified wetland was evaluated in accordance with the ORAM, developed by OEPA (Mack, 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA, 2000).

The streams identified within the ESA have drainage area smaller than one square mile. In accordance with the Ohio Water Quality Standards, these streams were evaluated using the OEPA Headwater Habitat Evaluation Index (HHEI; OEPA, 2012). The HHEI classifies streams based on habitat characteristics. Utilizing the HHEI scores and Jacobs' professional judgment, the headwater streams were classified into one of three categories:

- Ephemeral (Primary Headwater Habitat [PHWH] Class I)
- Intermittent (PHWH Class II/III)
- Perennial (PHWH Class III)

4 Field Survey Results

Five streams were delineated within the ESA. These features are displayed on Figure 4.

4.1 Wetland and Waterbody Summary

Summary information for the waterbodies within the ESA are provided in Table 4-1, below. The length (feet) of the streams within the ESA are included. Stream SDS106 is culverted as an existing permanent bridge for access to the adjacent manufacturing facility. This stream would only be impacted if this culvert is being removed and replaced or upgraded. Stream STQ105 has a discontinuous channel due to a manmade disturbance.

4.1.1 Wetlands

No wetlands were identified or delineated within the ESA.

4.1.2 Waterbodies

A total of five streams were identified within the ESA. All streams are unnamed tributaries to the Muskingum River. One stream was determined to have perennial flow, one stream was determined to have intermittent flow, and the remaining three streams were determined to have ephemeral flow based on the HHEI scores, field observations, and the USGS topographic maps (Figure 1). All streams appear to have significant nexus with a TNW (the Muskingum River) and are therefore likely to be considered jurisdictional by the USACE. It is noted that the USACE and OEPA make the final determination of significant nexus with a TNW.

The HHEI forms are provided in Appendix A and representative photographs of the streams are provided in Appendix B.

Table 4-1. Project Study Area Stream Summary

Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Feature ID	Location	Waterbody Name	Flow Regime[1]	12-Digit HUC	Drainage Area (square miles)	Approximate Length Delineated within the Study Area (feet)	RPW or Non-RPW[2]	OEPA Aquatic Life Use Designation[3]	HHEI Score[4]	Preliminary OEPA Stream Designation[5]	401 Water Quality Certification for Nationwide Permit Eligibility[6]	TNW Connection	Brief Description of Stream Condition
SDS106	Devola-Mill Creek Line Vicinity	UNT Muskingum River	Perennial	50400041204	0.49	162	RPW	N/A	61	Class II	Ineligible	Muskingum River	concrete slabs within stream channel and along banks; channel has likely been dredged/channelized along Mill Creek Road; culverted under drive to Thermo Scientific
STQ103	Devola-Mill Creek Line Vicinity	UNT Muskingum River	Intermittent	050400041204	<0.01	176	RPW	N/A	35	Rheocrene Potential	Ineligible	Muskingum River	stream flows through transmission line ROW
STQ104	Devola-Mill Creek Line Vicinity	UNT Muskingum River	Ephemeral	050400041204	<0.01	130	Non-RPW	N/A	24	Class I	Ineligible	Muskingum River	natural channel
STQ105	Devola-Mill Creek Line Vicinity	UNT Muskingum River	Ephemeral	050400041204	<0.01	160	Non-RPW	N/A	14	Class I	Ineligible	Muskingum River	natural channel
STQ106	Devola-Mill Creek Line Vicinity	UNT Muskingum River	Ephemeral	050400041204	<0.01	138	Non-RPW	N/A	14	Class I	Ineligible	Muskingum River	natural channel

Notes:

[1] Flow regime is defined as perennial, intermittent, or ephemeral. This determination was interpreted using field observations, USGS topographic maps, and the OEPA HHEI, as appropriate.

[2] Intermittent and perennial streams were recorded as RPWs; ephemeral streams were recorded as non-RPWs.

[3] OEPA Aquatic Life Use Designation based on OAC Chapter 3745-1 Water Quality Standards

[4] HHEI narrative rating based on OEPA 2009. The HHEI score was based on site observations and conditions during the wetland and stream delineation.

[5] Primary headwater habitat (PHWH) class for streams with watersheds smaller than 1 square mile is defined based on HHEI scores according to OEPA 2002.

[6] Eligibility based on OEPA Division of Surface Water Stream Eligibility Web Map (2017 Issuance)

Abbreviations:

HHEI	headwater habitat evaluation index	Non-RPW	non-relatively permanent water	TNW	traditional navigable waters
HUC	hydrologic unit code	OEPA	Ohio Environmental Protection Agency	UNT	unnamed tributary
N/A	not applicable	RPW	relatively permanent water		

4.2 Land Use and Habitat Summary

Jacobs field biologists conducted a general habitat survey in conjunction with the wetland and waterbody field surveys during the May 2017 site visit. The ESA comprises early successional forest, existing transmission right-of-way (ROW), and scrub-shrub habitats. Additional details regarding the general habitat observed within the ESA is described below.

The early successional forest is predominantly found along the western edge of the ESA. Dominant species include white oak (*Quercus alba,* FACU), American beech (*Fagus grandifolia,* FACU*)*, sugar maple (*Acer saccharum,* FACU), Ohio buckeye (*Aesaulus glabra*, FACU) bitternut hickory (*Carya cordiformis*, FACU), and shagbark hickory (*Carya ovata*, FACU).

The scrub-shrub area, which makes up the majority of the ESA is mostly contained within the existing transmission ROW and dominated by shrub species such as multiflora rose (*Rosa multiflora,* FACU), Allegheny blackberry (*Rubus allegheniensis*, FACU), honeysuckle shrub (*Lonicera morrowii,* FACU), and Virginia pine (*Pinus virginiana,* FACU).

5 Protected Species

Jacobs reviewed the USFWS Ohio Ecological Services Office website (USFWS, 2015a) for information concerning which federally-listed species are known to occur, or to potentially occur, in Washington County. In addition, Jacobs submitted an Ohio Natural Heritage Database Request to the ODNR Division of Wildlife (DOW) on August 30, 2017 for information on known occurrences of federally-listed and state-listed species within a one-mile radius of the Devola substation LOD and the identified buffer covers the entire ESA. Separate requests were submitted to the ODNR and USFWS regarding the proposed ESA. A response from the ODNR was received on November 20, 2017, and a response from the USFWS was received on September 11, 2017. Threatened and endangered species coordination responses are provided in Appendix C.

5.1 Federal Agency Coordination Summary

Federally-listed species information is summarized below in Table 5-1. Table 5-1 outlines federally-listed species identified by the USFWS (USFWS, 2016) as occurring, or potentially occurring in the Project ESA in Washington County, Ohio.

Table 5-1. Federally Listed Species Recorded in Washington County
Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Common Name (Species Name)	Federal Status	General Habitat Notes	Recorded Location within Project Vicinity	Potential Habitat in ESA
Mammals				
Indiana bat *Myotis sodalis*	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests.	No	Yes
Northern long-eared bat *(Myotis septentrionalis)*	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer, roosts and forages in upland forests.	No	Yes

5.2 State Agency Coordination Summary

State-listed species information is summarized below in Table 5-2. Table 5-2 outlines state-listed species identified by the ODNR (ODNR, 2016) as being located within a one-mile radius of the ESA. Species-specific surveys were not conducted for the state-listed species discussed in Table 5-2. A copy of the protected species comments from ODNR is provided in Appendix C.

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA

Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Mammals				
Indiana bat *(Myotis sodalis)*	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests.	No hibernacula of Indiana bats have been documented in Washington County.	Yes
Black bear *(Ursus americanus)*	Endangered	Thick, forested areas with an abundance of food resources.	No locations reported. Per ODNR, due to mobility of this species it is unlikely to be impacted.	Yes
Fishes				
Blue sucker (Cycleptus elongates)	Endangered	Deep swiftly flowing channels of large rivers. Lower Scioto River to the Ohio River	Yes, within one-mile radius of the ESA.	No
Western banded killifish (Fundulus diaphanous menona)	Endangered	In areas of rooted aquatic vegetation, clear waters, and substrates of clean sand and organic debris. No silt.	Yes, within one-mile radius of the ESA.	No
Northern madtom (Noturus stigmosus)	Endangered	Deep swift riffles of large rivers. Found in and around cobbles and boulders. Muskingum, Scioto, and Little Miami River Drainages.	Yes, within one-mile radius of the ESA.	No
Ohio Lamprey (Ichthyomyson bdellium)	Endangered	Found in clear brooks with fast flowing water with gravel or sand. Slow moving water with soft substrate bottoms in medium to large streams and in large bodies of water.	Yes, within one-mile radius of the ESA.	No
Paddlefish (Polyodon spathula)	Threatened	Found in the Ohio River and its larger tributaries. They live in slow moving pools and backwaters.	Yes, within one-mile radius of the ESA.	No

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA
Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Mountain madtom (Noturus eleutherus)	Threatened	Found in deep swift riffles of larger rivers. They prefer substrates such as cobbles and boulders.	Yes, within one-mile radius of the ESA.	No
River darter (Percina shumardi)	Threatened	Found in very large rivers with swift currents. They live in areas over a gravel or rocky bottom in depth of 3 feet or more.	Yes, within one-mile radius of the ESA.	No
Channel darter (Percina copelandi)	Threatened	Found in large, course sand or fine gravel bars in large rivers along the shore of Lake Erie.	Yes, within one-mile radius of the ESA.	No
Tippecanoe darter (Etheostoma tippecanoe)	Threatened	Found in medium to large streams and rivers in the Ohio River drainage. They live in riffles or moderate current with substrates of gravel and small cobbles.	Yes, within one-mile radius of the ESA.	No
Freshwater Mussels				
Sheepnose (Plethobasus cyphus)	Endangered	Found in larger rivers and streams where they live in shallow areas with moderate to swift currents. Found in the Ohio River and tributaries	Yes, within one-mile radius of the ESA.	No
Fanshell (Cyprogenia stegaria)	Endangered	Found in medium to large rivers and buries itself in snad or gravel in deep water. Found in the Ohio River and tributaries	Yes, within one-mile radius of the ESA.	No
Pick mucket (Lampsilis orbiculate)	Endangered	Found in mud and sand substrate and in shallow riffles and shoals free of silt. Found in major rivers and tributaries and the Ohio River.	Yes, within one-mile radius of the ESA.	No
Snuffbox (Epiloblasma triquetra)	Endangered	Found in small to medium sized streams in areas with a swift current. Found in Ohio River tributaries.	Yes, within one-mile radius of the ESA.	No

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA
Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Washboard (Megalonaias nervosa)	Endangered	Found in large rivers with a habitat of slow currents with sand, gravel, and mud substrates. Found in the Ohio River and tributaries and man-made lakes and ponds.	Yes, within one-mile radius of the ESA.	No
Butterfly (Ellipsaria lineolata)	Endangered	Found in larger rivers with swift currents and sand or gravel substrates. Found in the Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Elephant-Ear (Elliptio crassidens)	Endangered	Found in large rivers with mud, sand, and fine gravel substrates. Found in the Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Long-solid (Fusconaia maculata maculata)	Endangered	Found in small to large rivers with strong currents and gravel substrate. Found in the Lake Erie tributaries, Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Sharp-ridged pocketbook (Lampsilis ovata)	Endangered	Found in large rivers at depths of 15 to 20 feet as well as free-flowing shallow rivers. Found in the Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Ohio pigtoe (Pleurobema cordatum)	Endangered	Found in large to medium sized streams particularly the Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Pyramid pigtoe (Pleurobema rubrum)	Endangered	Large to medium sized streams. Found in riffles or shoals in shallow water with coarse substrate or along sand bars and deep water. Found in the Ohio River and tributaries.	Yes, within one-mile radius of the ESA.	No
Monkeyface (Quadrula metanevra)	Endangered	Found in silt-free substrates such as sand, gravel, and cobble in moderately flowing small streams. Found in the Ohio River and	Yes, within one-mile radius of the ESA.	No

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA
Proposed Mill Creek – Devola 138 kV Transmission Line, Washington County, Ohio

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Black sandshell (Ligumia recta)	Threatened	Found in medium to large streams in the riffle-run areas dominated by sand or gravel. Found in the Lake Erie tributaries, Ohio River tributaries, and headwater and small inland streams.	Yes, within one-mile radius of the ESA.	No
Threehorn wartyback (Obliquaria reflexa)	Threatened	Found in large rivers with primary substrate sand or gravel. Found in Lake Erie and tributaries, Ohio River and tributaries, man-made lakes and ponds.	Yes, within one-mile radius of the ESA.	No
Fawnsfoot (Truncilla donaciformis)	Threatened	Found in medium to large rivers with sand and gravel substrate. Found in Lake Erie and tributaries, Ohio River and tributaries, man-made lakes and ponds.	Yes, within one-mile radius of the ESA.	No
Reptiles				
Timber rattlesnake (Crotalus horridus horridus)	Endangered	Woodland areas, dry slopes and rocky outcrops. Uses the sunlit gaps in the canopy for basking.	Per ODNR, due to the location this project is not likely to impact this species.	No
Amphibians				
Eastern hellbender *(Cryptobranchus alleganiensis alleganiensis)*	Endangered	Fast, clear streams and rivers containing many large boulders, logs, and debris.	Per ODNR, it is unlikely that any perennial streams of sufficient size are within the corridor and this species should not be impacted.	No
Eastern spadefoot toad *(Scaphiopus holbrookii)*	Endangered	Areas of sandy soils associated with river valleys, breeding habitats may include flooded agricultural fields.	Per ODNR it is unlikely this project will impact this species.	No

Sources: ODNR, 2017; USFWS, 2017; ECOS, 2016; IUCN, 2017; NatureServe Explorer, 2016

5.3 Protected Species Summary

None of the federal species listed in Table 5-1 are known to occur in the Project vicinity per data obtained from the USFWS. No state or federally-listed species were observed during field assessments, although no species-specific surveys were conducted, and casual observations of these species would be highly unlikely.

Suitable habitat in the ESA may exist for the Indiana bat and northern long-eared bat; however, the data provided by ODNR did not include any records of known presence of either species.

If no caves or abandoned mines are present and trees equal to three inches DBH cannot be avoided, USFWS and ODNR recommend removal of trees only occur between October 1st and March 31st (USFWS, 2017; ODNR, 2017). If suitable trees must be cut during the summer months, surveys should be conducted according to the 2017 Range-Wide Indiana Bat Summer Survey Guidelines (USFWS, 2017a) and the results coordinated with the USFWS and ODNR.

ODNR indicates that the Project has several threatened or endangered mussel and fish species present within a one-mile radius of the ESA. According to the ODNR, the Project must not have an impact on freshwater native mussels within the study area. ODNR recommends following the Ohio Mussel Survey Protocol if any in-stream work is proposed to document that no mussel impacts will occur. The Protocol specifies mussel surveys for certain listed streams and any other streams with a watershed of 10 square miles or larger. All streams in the ESA have watersheds of less than one square mile and no instream work is proposed. Therefore, no streams in the ESA appear to have suitable mussel habitat, and no impacts to mussels will occur.

The ODNR also recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to the listed fishes and indigenous aquatic species and their habitat (ODNR, 2017). One stream (SDS106) in the ESA is a small perennial stream. All fishes listed by the ODNR within the one-mile radius are associated with medium to large perennial streams and rivers. Therefore, no impact to these fishes appears likely.

Regarding listed reptiles and amphibians, the ODNR has indicated that due to the location, this project is not likely to impact these species. The ODNR identifies the floodplains of the Muskingum River and West Fork Duck Creek as potential habitats for the eastern spadefoot toad. The ESA does not include either of these areas.

6 Conclusion

AEP is proposing to construct a new, 0.4-mile 138 kV electric transmission line connecting the future Devola Substation and existing Mill Creek Substation in Washington County, Ohio. Field surveys were conducted by Jacobs on May 18, 2017. The five streams consist of one perennial stream, one intermittent stream, and three ephemeral streams, all unnamed tributaries to the Muskingum River. All streams are expected to be within the USACE's jurisdiction due to the connection to the Muskingum River. No in-water work is proposed as part of the Project; therefore, impact to any of the delineated streams is not anticipated. Further coordination with the USACE prior to completing any permit or construction activities is recommended. The Project falls in an area ineligible for Nationwide Permit authorization without an Individual 401 Water Quality certification.

7 References

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Figures

Legend

- Substation
- Proposed Mill Creek-Devola 138 kV Transmission Line
- Environmental Study Area

BASE MAP SOURCE:
USGS 7.5-minute
Topographic Quadrangles:
Marietta

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:8,000

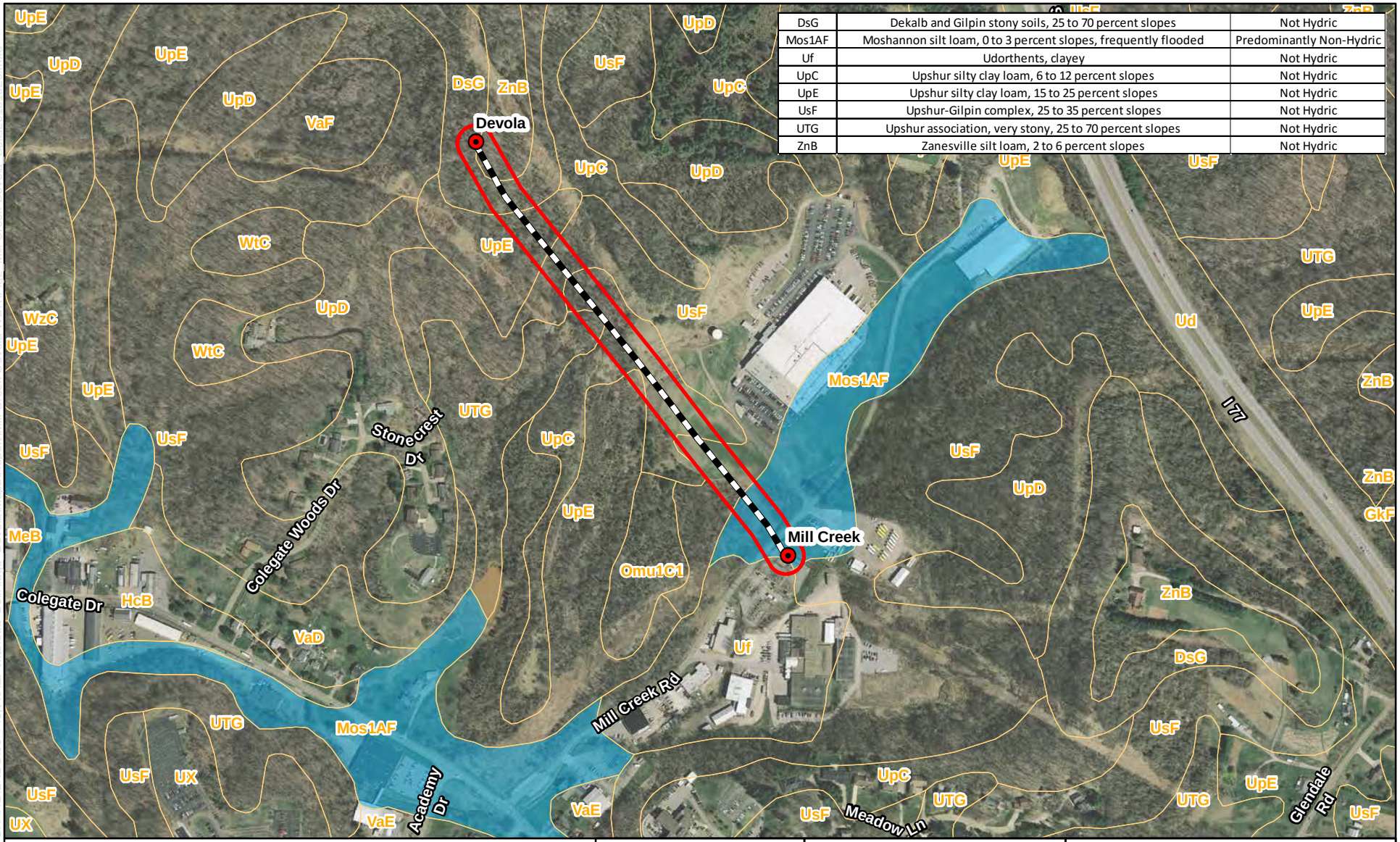
November 05, 2018

LOCATOR MAP

FIGURE 1
USGS TOPOGRAPHIC MAP

Proposed Mill Creek-Devola
138 kV Transmission Line Project
Washington County, OH

0 500 1,000
Feet



DsG	Dekalb and Gilpin stony soils, 25 to 70 percent slopes	Not Hydric
Mos1AF	Moshannon silt loam, 0 to 3 percent slopes, frequently flooded	Predominantly Non-Hydric
Uf	Udorthents, clayey	Not Hydric
UpC	Upshur silty clay loam, 6 to 12 percent slopes	Not Hydric
UpE	Upshur silty clay loam, 15 to 25 percent slopes	Not Hydric
UsF	Upshur-Gilpin complex, 25 to 35 percent slopes	Not Hydric
UTG	Upshur association, very stony, 25 to 70 percent slopes	Not Hydric
ZnB	Zanesville silt loam, 2 to 6 percent slopes	Not Hydric

Legend

- Substation
- Proposed Mill Creek-Devola 138 kV Transmission Line
- Soil Map Unit
- Predominantly Non-Hydric Soil

BASE MAP SOURCE:
Ohio Statewide Imagery Program, 2014

Coordinate System: State Plane Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:6,000

November 05, 2018

LOCATOR MAP

FIGURE 2
SOIL MAP

Proposed Mill Creek-Devola 138 kV Transmission Line Project
Washington County, OH

0 500 1,000
Feet

Legend

- Substation
- Proposed Mill Creek-Devola 138 kV Transmission Line
- Environmental Study Area
- Stream (NHD)
- Wetland (NWI)

BASE MAP SOURCE:
Ohio Statewide Imagery Program, 2014

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:6,000

November 05, 2018

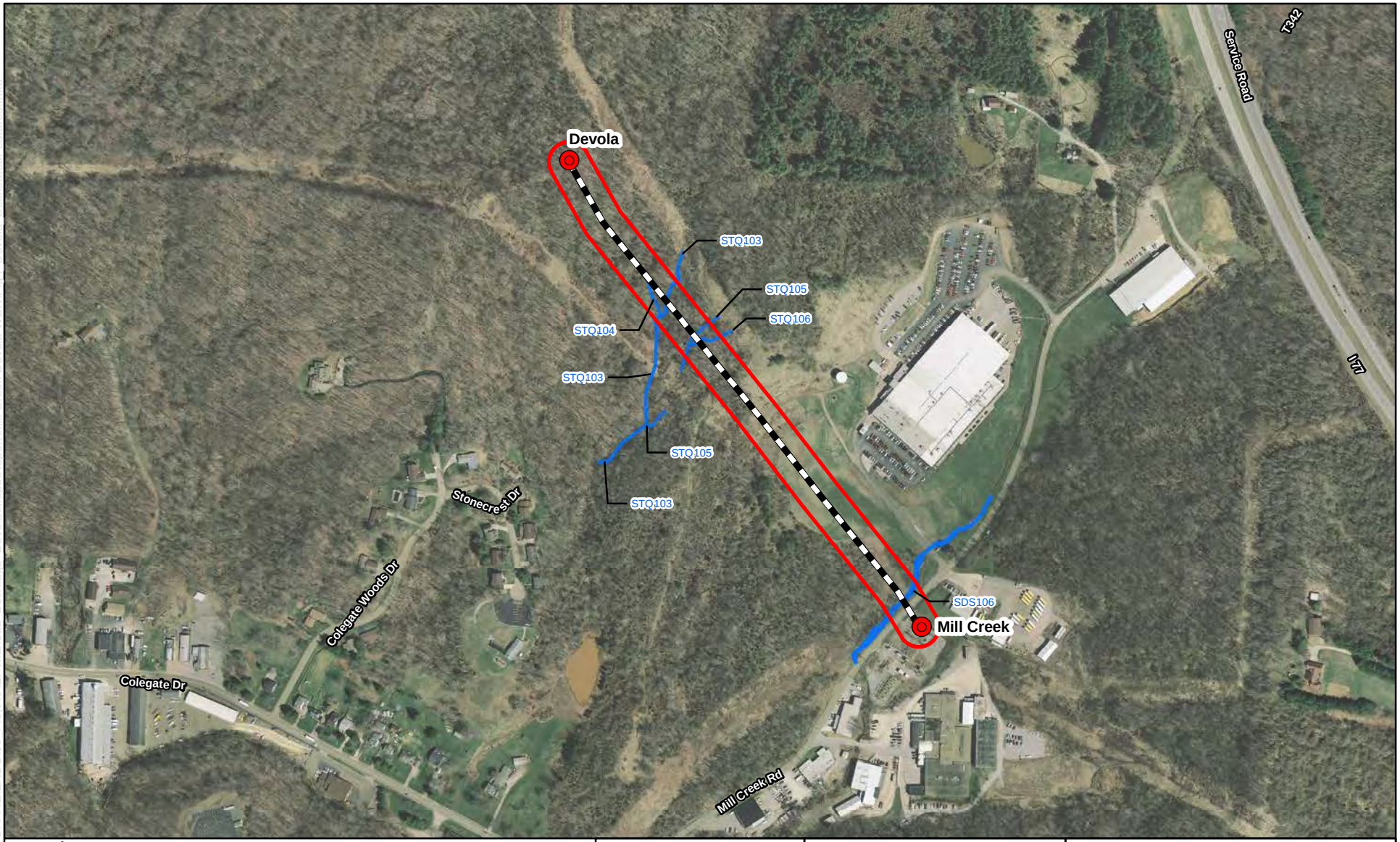
LOCATOR MAP

FIGURE 3
NHD STREAMS/WATERBODIES AND NWI WETLANDS

Proposed Mill Creek-Devola 138 kV Transmission Line Project
Washington County, OH

0 500 1,000
Feet

Document Path: \\brookside\esi\GIS_SHARE\ENRG\00_Proj\AAEP\Marietta_BellRidge_Devola\Maps\Report\Mill Creek-Devola WDPIFig3_Devola_NWI.mxd



Legend

- Substation
- Proposed Mill Creek-Devola 138 kV Transmission Line
- Environmental Study Area
- Delineated Stream

BASE MAP SOURCE:
Ohio Statewide Imagery Program, 2014

Coordinate System: State Plane
Ohio South FIPS 3402 Feet
Datum: NAD 1983
Scale 1:7,000

November 05, 2018

LOCATOR MAP

FIGURE 4
WETLAND, WATERBODIES DELINEATION MAP

Proposed Mill Creek-Devola
138 kV Transmission Line Project
Washington County, OH

0 500 1,000
Feet

Appendix A
OEPA Primary Headwater Habitat Evaluation Forms

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **61**

SITE NAME/LOCATION: **AEP Bell Ridge to Devola / Mill Creek Rd Area / UNT Muskingum River**

SITE NUMBER: **SDS106** RIVER BASIN: **05040004** DRAINAGE AREA (mi²): **0.49**

LENGTH OF STREAM REACH (ft): **570** LAT.: **39.44441** LONG.: **-81.44229** RIVER CODE: _____ RIVER MILE: _____

DATE: **05/18/17** SCORER: **DC Stanley** COMMENTS: **HUC 12 050400041204 Devol Run-Muskingum River**

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
concrete slabs

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	30%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	20%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☑	ARTIFICIAL [3 pts]	25%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **15.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6** **TOTAL NUMBER OF SUBSTRATE TYPES:** **5**

HHEI Metric Points

Substrate Max = 40: **11**

A + B

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

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☑	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **25.4**

Pool Depth Max = 30: **30**

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

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

COMMENTS: _____ **AVERAGE BANKFULL WIDTH (meters):** **1.88**

Bankfull Width Max=30: **20**

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) L	R	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	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM 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 **>5,000 ft**

☐ 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: **Marietta** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Washington** Township / City: **Fearing Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **05/12/17** Quantity: **0.04**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **95%**

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

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

Comments Regarding Biology: _____

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

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

FLOW →

Save as pdf Reset Form

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **35**

SITE NAME/LOCATION: AEP Bell Ridge to Devola / Unnamed Tributary to Muskingum River

SITE NUMBER: STQ103 RIVER BASIN: 05040004 DRAINAGE AREA (mi²): <0.01

LENGTH OF STREAM REACH (ft): 300 LAT.: 39.44633 LONG.: -81.44617 RIVER CODE: RIVER MILE:

DATE: 05/18/17 SCORER: T Qualio COMMENTS: HUC 050400041204 Devol Run-Muskingum River

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	50%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

15

A + B

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

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 1

Pool Depth Max = 30

5

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 1.20

Bankfull Width Max=30

15

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	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: AEP ROW

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: Intermittent

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 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Muskingum River** Distance from Evaluated Stream **1.01**

☐ 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: **Marietta** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Washington** Township / City: **Muskingum Township / Marietta**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **05/12/17** Quantity: **0.04**

Photograph Information: _____

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

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

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

Comments Regarding Biology: _____

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

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

Save as pdf Reset Form

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **24**

SITE NAME/LOCATION: AEP Bell Ridge to Devola / Unnamed Tributary to Muskingum River

SITE NUMBER: STQ104 RIVER BASIN: 05040004 DRAINAGE AREA (mi²): <0.01

LENGTH OF STREAM REACH (ft): 150 LAT.: 39.44667 LONG.: -81.44611 RIVER CODE: RIVER MILE:

DATE: 05/18/17 SCORER: T Qualio COMMENTS: HUC 050400041204 Devol Run-Muskingum River

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	70%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% **(A)** Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

14

A + B

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

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 1

Pool Depth Max = 30

5

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30

5

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) L	R	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: AEP ROW on right

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: Ephemeral

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 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Muskingum River** Distance from Evaluated Stream **1.02**

☐ 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: **Marietta** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Washington** Township / City: **Muskingum Township / Marietta**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/17** Quantity: **0.04**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **25%**

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

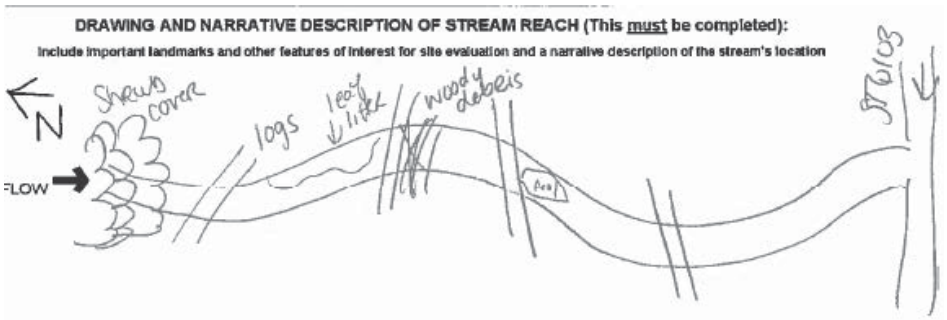
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

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

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

FLOW →



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Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **14**

SITE NAME/LOCATION: **AEP Bell Ridge to Devola / Unnamed Tributary to Muskingum River**

SITE NUMBER: **STQ105** RIVER BASIN: **05040004** DRAINAGE AREA (mi²): **<0.01**

LENGTH OF STREAM REACH (ft): **300** LAT.: **39.44615** LONG.: **-81.44582** RIVER CODE: _____ RIVER MILE: _____

DATE: **05/18/17** SCORER: **T Qualio** COMMENTS: **HUC 050400041204 Devol Run-Muskingum River**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0%	☑☐	SILT [3 pt]	85%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	0%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	5%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	0%	☐☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6** **TOTAL NUMBER OF SUBSTRATE TYPES:** **3**

HHEI Metric Points

Substrate Max = 40

9

A + B

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

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

0

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **0**

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

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

Bankfull Width Max=30

5

COMMENTS: _____ **AVERAGE BANKFULL WIDTH (meters):** **0.60**

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) L	R	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	☐	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 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Muskingum River** Distance from Evaluated Stream **1.02**

☐ 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: **Marietta** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Washington** Township / City: **Muskingum Township / Marietta**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/17** Quantity: **0.04**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **45%**

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

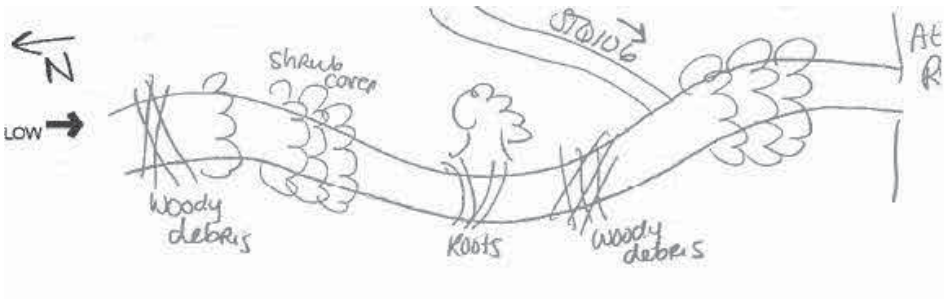
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

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

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

FLOW →



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Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **14**

SITE NAME/LOCATION: **AEP Bell Ridge to Devola / Unnamed Tributary to Muskingum River**

SITE NUMBER: **STQ106** RIVER BASIN: **05040004** DRAINAGE AREA (mi²): **<0.01**

LENGTH OF STREAM REACH (ft): **150** LAT.: **39.44639** LONG.: **-81.44568** RIVER CODE: _____ RIVER MILE: _____

DATE: **05/18/17** SCORER: **T Qualio** COMMENTS: **HUC 050400041204 Devol Run-Muskingum River**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	85%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	5%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6** **TOTAL NUMBER OF SUBSTRATE TYPES:** **3**

HHEI Metric Points

Substrate Max = 40

9

A + B

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

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

0

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **0**

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

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

Bankfull Width Max=30

5

COMMENTS: _____ **AVERAGE BANKFULL WIDTH (meters):** **0.60**

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) L	R	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	☐	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 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Muskingum River** Distance from Evaluated Stream **1.01**

☐ 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: **Marietta** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Washington** Township / City: **Muskingum Township / Marietta**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/17** Quantity: **0.04**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **45%**

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

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

Comments Regarding Biology: _____

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

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

FLOW ➔

Save as pdf Reset Form

Appendix B
Photo Documentation

Site Name	Photo Direction
Stream SDS106 (Perennial)	Downstream

Site Name	Photo Direction
Stream STQ103 (Intermittent)	Downstream

Site Name	Photo Direction
Stream STQ104 (Ephemeral)	Upstream

Site Name	Photo Direction
Stream STQ105 (Ephemeral)	Downstream

Site Name	Photo Direction
Stream STQ106 (Ephemeral)	Downstream

Appendix C
Threatened an Endangered Species Consultation

From:	susan_zimmermann@fws.gov
To:	Qualio, Trisha/PGH
Cc:	Frank, Mike/CIN; nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject:	Devola 138 kV Substation Project, Marietta, Washington Co. [EXTERNAL]
Date:	Monday, September 11, 2017 2:25:07 PM
Attachments:	Capture of Dan.PNG

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

TAILS# 03E15000-2017-TA-1845

Dear Ms. Qualio,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags =3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

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

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

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

Sincerely,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

November 20, 2017

Trish Qualio
CH2M
400 Industry Drive, Suite 100
Pittsburgh, PA 15275

Re: 17-680; Devola 138 kV Substation Project

Project: The proposed project involves the construction of a new 138 kV substation that will connect 138 kV lines from the future Macksburg Substation via the Highland Ridge Substation.

Location: The proposed project is in Devola Township, Washington County, Ohio.

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

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

Fanshell (*Cyprogenia stegaria*), E, FE
Butterfly (*Ellipsaria lineolata*), E,
Long-solid (*Fusconaia maculata maculata*), E
Pink mucket (*Lampsilis orbiculata*), E, FE
Washboard (*Megalonaias nervosa*), E
Threehorn wartyback (*Obliquaria reflexa*), T
Sheepnose (*Plethobasus cyphyus*), E, FE
Ohio pigtoe (*Pleurobema cordatum*), E
Round pigtoe (*Pleurobema sintoxia*), SC
Monkeyface (*Quadrula metanevra*), E
Fawnsfoot (*Truncilla donaciformis*), T
River redhorse (*Moxostoma carinatum*), SC

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

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the washboard (*Megalonaias nervosa*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the elephant-ear (*Elliptio crassidens*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovata*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the pyramid pigtoe (*Pleurobema rubrum*), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, and the fawnsfoot (*Truncilla donaciformis*), a

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

The project is within the range of the blue sucker (*Cycleptus elongatus*), a state endangered fish and a Federal species of concern, the western banded killifish (*Fundulus diaphanus menona*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the paddlefish (*Polyodon spathula*) a state threatened fish, the mountain madtom (*Noturus eleutherus*), a state threatened fish, the river darter (*Percina shumardi*), a state threatened fish, the mountain madtom (*Noturus eleutherus*), a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish, and the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, this project is not likely to impact this species.

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

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

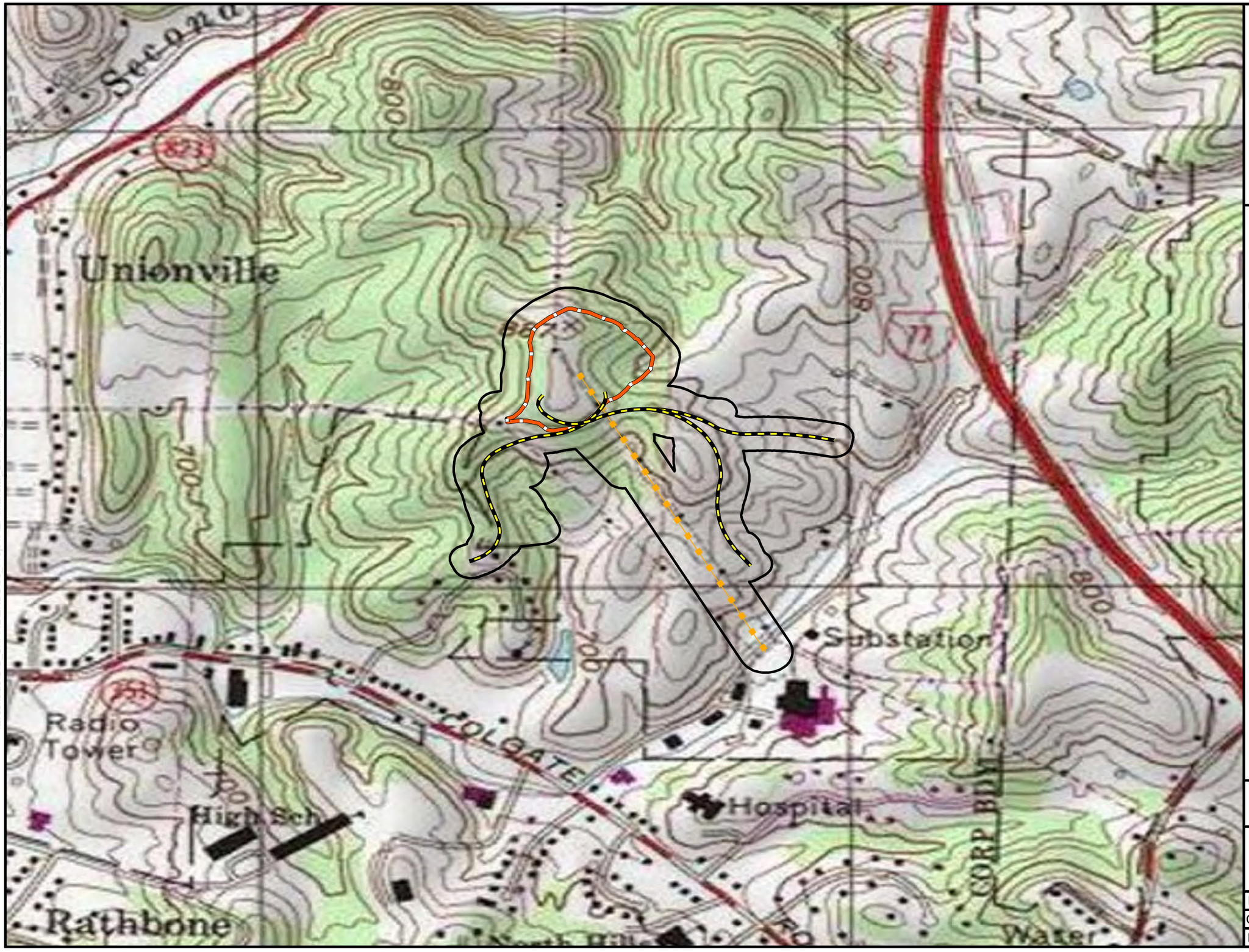
The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2

Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us



LOCATOR MAP

LEGEND:

N

- Devola Substation Footprint
- Devola-Mill Creek Transmission Line
- Proposed Access Road
- Study Area

BASE MAP SOURCE:
USGS 7.5' Topographic Quadrangle
Marietta, Ohio

0 500 1,000
Scale In Feet

AEP OHIO TRANSMISSION COMPANY

Devola Substation

FIGURE 1
TOPOGRAPHIC OVERVIEW

PN: 692027	DATE: 8/24/2017
CREATED BY: MV	ch2m.
REVIEWED BY: MF	

\\brookside\GIS_SHARE\ENBG\00_Proj\AVAEP\Marietta_BellRidge_Devola\Maps\Report\Devola_Substation\Figure_1_Overview.mxd

Appendix E LTFR: PUCO Form TE 9

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

Filed May 31, 2018

1.	**LINE NAME AND (PJM NUMBER):**	Devola-Mill Creek (s1125)
2.	**POINTS OF ORIGIN AND TERMINATION**	Mill Creek-Devola; INTERMEDIATE STATION - N/A
3.	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	2 spans, 100 feet, single circuit
4.	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5.	**APPLICATION FOR CERTIFICATE:**	LON 2018
6.	**CONSTRUCTION:**	2020
7.	**CAPITAL INVESTMENT:**	Total is approximately $111 Million
8.	**PLANNED SUBSTATION:**	NAME - Devola; TRANS. VOLTAGE - 138kV; ACREAGE - ~10 acres; LOCATION - Marietta, Ohio
9.	**SUPPORTING STRUCTURES:**	Overhead Steel
10.	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11.	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Area reliability/serve increased area capacity.
12.	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Reduced area reliability
13.	**MISCELLANEOUS:**	N/A

Summary: Letter of Notification electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.