



**History/Architecture Investigations for the 5.6 ha (14 ac)
Devola Substation Project in Muskingum Township,
Washington County, Ohio**

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December 19, 2017

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Devola Substation Project in Muskingum Township,
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By

Timothy Miller

Submitted By:

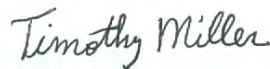
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Ohio Power Siting Board



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December 19, 2017

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Abstract

In December of 2017, Weller & Associates, Inc. conducted History/Architecture Investigations for the 5.6 ha (14 ac) Devola Substation Project in Muskingum Township, Washington County, Ohio. These investigations were completed for American Electric Power for submittal to the lead agency, the Ohio Power Siting Board. The project will include the installation of the new Devola substation, which is planned to be approximately 4 ha (10 ac) area. Included in this project are access roads and the Devola-Mill Creek transmission line. The planned transmission line will be approximately 0.4 miles long and will have a survey corridor that is 30.5 m (100 ft) wide.

The investigations, including a background literature review and intensive field survey, were conducted in accordance with the guidelines set forth by the Ohio State Historic Preservation Office and Ohio Administrative Code Chapter 4906-15-06(F), which concerns socioeconomic and land use impact analysis in applications for certificates for electric transmission facilities through the Ohio Power Siting Board.

The investigations were conducted in two parts: a history/architecture survey and an archaeological investigation. This report covers the results of the history/architecture survey of the entire area that may be affected by the proposed development of the project. The history/architecture investigations consisted of a systematic survey of all properties 50 years of age or older that are situated within the project area or have a viewshed of the proposed project area. The results of the archaeological investigations will be presented in a separate report.

The project is subject to Ohio Power Siting Board Application requirements under Chapter 4906 of the Ohio Revised Code. The project is subject to Ohio Power Siting Board Application requirements under Chapter 4906 of the Ohio Revised Code. The project study area included six buildings 50 years of age or older constructed in the 1950's and 1960's. All of the identified resources were found to be clearly not eligible for the NRHP under Criteria A, B, or C due to a lack of associative significance, a loss of integrity, or a lack of character defining features. The resources are all Vernacular in style, and have experienced multiple alterations that have compromised their historic integrity. Weller & Associates, Inc. therefore recommends a finding of 'no historic properties affected'.

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Introduction

In December of 2017, Weller & Associates, Inc. conducted History/Architecture Investigations for the 5.6 ha (14 ac) Devola Substation Project in Muskingum Township, Washington County, Ohio (Figures 1-3). The work was conducted under contract with American Electric Power (AEP) pursuant to documentary requirements for the Ohio Power Siting Board (OPSB). The investigations were conducted in accordance with the guidelines set forth by the Ohio State Historic Preservation Office and Ohio Administrative Code Chapter 4906-15-06(F), which concerns socioeconomic and land use impact analysis in applications for certificates for electric transmission facilities through the Ohio Power Siting Board. The work efforts were designed to evaluate pertinent cultural resources for the National Register of Historic Places (NRHP) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]). This report summarizes the results of the fieldwork and literature review.

A literature review was completed on December 6, 2017. Timothy Miller served as the Principal Investigator for the History/Architecture portion of this project. The Geographic Information Systems (GIS) mapping and figures for this report were generated by Alex Thomas, Jacquelyn Lehmann, and Timothy Miller.

Project Description

The project will include the installation of the new Devola substation, which is approximately 4 ha (10 ac) area. Included in this project are access roads and the Devola-Mill Creek transmission line. The planned transmission line will be approximately 0.4 miles long and will have a survey corridor that is 30.5 m (100 ft) wide.

Research Design

The purpose of the history/architecture portion of the project was to identify any historic properties in the area that may be affected by the proposed development of the project. These effects may be direct or indirect. Direct effects occur within the boundaries of the project, while indirect effects can occur for areas outside the direct boundaries and can include visual, audible, and atmospheric effects that are associated with the development of the project. Based on the nature of the project, the history/architecture investigations consisted of a systematic survey of all properties 50 years of age or older that are situated within or have a potential view of the proposed project.

Methods

This survey was conducted following the guidelines established in *Archeology and Preservation: Secretary of the Interior's Standards and Guidelines* (National Park Service 1983) and *Guidelines for Local Surveys: A Basis for Preservation Planning*. *National Register Bulletin No. 24* (National Park Service 1997). When properties are identified, they are subjected to the guidelines outlined in *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation* (National Park Service 1996).

There are four criteria for eligibility to be listed in the National Register of Historic Places (NRHP). Only one of these criteria must be met to be considered eligible for listing; however, oftentimes more than one of the criteria is met. The criteria for significance include:

- A. Association with historic events or patterns of events;
- B. Association with persons important to our past;
- C. Exceptional or important architectural characteristics; and/or
- D. Data potential.

Architectural properties typically qualify under Criteria A, B, or C. Criterion D is typically reserved for archaeological sites.

In addition to meeting at least one of the established criteria, the appropriate integrity must also be retained by the resource. There must be integrity of location, design, workmanship, setting, materials, feeling, and association.

Prior to commencing fieldwork, a literature review was conducted to determine if any previously recorded architectural properties, NRHP properties, or Ohio Genealogical Society cemeteries were present within the APE. Historic maps were also reviewed to aid in guiding the fieldwork and detecting the possible presence of properties 50 years of age or older within the APE. Background research was also conducted in order to establish a historic context of the region. The context was compiled by utilizing materials from the SHPO, archival materials at the respective county courthouses, local libraries, and several online resources. The establishment of the historic context helped to guide the interpretation of the field survey results.

The field survey included a systematic approach to identifying all properties 50 years of age or older within the project area or that have a potential view of the proposed project. Some areas will be blocked from having a direct line-of-sight to the proposed project by topography and forested areas. The areas that did not have a direct line-of-sight to the project were visually verified in the field and the survey did not include all of these areas. An advantage for this project is the presence of an existing line to gauge the direct line-of-sight from properties through field verification during the survey. Each property identified within the survey area that will have a direct line-of-sight was photographed and annotated on appropriate mapping and included in the report. Each property identified within the survey area was photographed and annotated on appropriate mapping and included in the report. The approach was to identify those properties with NRHP potential, followed by a more intensive documentation and evaluation of those potentially eligible aboveground resources. The comprehensive survey involved recording of each property 50 years of age or older to a baseline level of documentation.

Weller focused on the ground plan, the height, and the roof configuration of each structure, noting all visible materials, appendages, extensions, or other alterations. Housing types and structural details within the report and utilized on OHI forms follow the terminology used by geographers Jakle, Bastian, and Meyer (1988), architectural

historians McAlester and McAlester (1992), and Gordon (1992). Weller then supplemented the field survey data with an examination of available tax records, aerial photographs, and cartographic sources.

A summary and analysis of the field data detailing the overall architectural character of the survey APE is included as a narrative in the report. Weller historians analyzed the data and identified properties that are clearly not eligible for the NRHP due to a lack of significance or loss of integrity, as well as identified potential NRHP properties and advanced them to a more advanced level of documentation and evaluation.

Definitions

Within this report, an *architectural resource* is defined as aboveground buildings or structures that are 50 years of age or older. A *historic property* is defined as a building, structure, object, or site that is listed in, or considered eligible for listing in, the NRHP. An *effect* is defined as an activity associated with the project that alters a characteristic of a historic property that qualified it for inclusion in the NRHP.

Historic Context

Washington County History

In 1788, a group of Ohio Company explorers, surveyors, and settlers, including 48 men led by General Rufus Putnam, founded Marietta (Andrews 1902; Howe 1888; Williams Bros. 1881). This was the first, permanent American settlement in the Northwest Territory. Major John Doughty had built Fort Harmer three years previous but it had been abandoned and would be rebuilt and reoccupied. Campus Martius, later to be called Marietta, was that place of entry and settlement (Andrews 1902). These men had arrived in April; Governor Arthur St. Clair followed that July to begin his governance of the Northwest Territory from this preliminary seat in the forests of Ohio (Williams Bros. 1881). Upon Governor St. Clair's arrival, he created Washington County as a subdivision of the Ohio Territory. At that time, the county was nearly half the size of the current State. Most of the early history of Washington County however, contained itself to the present bounds and the region surrounding Marietta (Andrews 1902; Howe 1888; Williams Bros. 1881). Due to the dispute with Northwestern Indian tribes over the ownership of Ohio lands, the settlements were heavily fortified or had forts nearby (Fort Harmer, Campus Martius, Farnes Castle, Fort Freye, and Fort Tyler). Settlers followed peace into the county (Andrews 1902; Howe 1888; Williams Bros. 1881).

With the considerable organization of the Ohio Company, growth and progress was almost immediate in Washington County. There was a school in session the first year of occupation. Major Anselm Tupper taught it (Andrews 1902). Once relative peace came to the region and civil growth could take place outside the blockhouses, real growth began. The Congregational Church had organized back east, before settlement or even migration. Their own building, The Two Horn Church, was the oldest church in Ohio (Howe 1888). Within a decade, a formal academy was in operation. Muskingum Academy was both an educational and a religious edifice and continued as such many years. Washington County also boasts the state's first library, kept at the house of Isaac

Pierce. These were books belonging to General Israel Putnam which were removed to Ohio after his death in 1795, by his son Colonel Israel Putnam. As such, it was known first as the Putnam Library, but later as the Belpre Library or the Belpre Farmer's Library.

Early settlers relied heavily on agriculture for subsistence and cultivated the broad valley floors of the Ohio and Muskingum Rivers. Fruit farming was important in Marietta with peaches being the most popular. In 1791, Captain Jonathan Devol built a floating mill, which went up and down the Ohio River servicing local farmers. After 1812, steamboats became the primary mode of transportation along the Ohio River (Williams Bros. 1881). In 1823, the Marietta Steam Boat Company was established on the Little Muskingum River. In 1837, the Muskingum River improvement led to the construction of a series of dams and locks along the Muskingum River to improve canal and steamboat travel. As river transportation improved, new markets opened for agricultural products allowing surplus flour, meal, pork, beef, and wool to be sold for additional economic profit (Andrews 1902; Williams Bros. 1881).

The first railroad constructed in Washington County was the Baltimore and Ohio Railroad built in 1857 (Andrews 1902). This connected Marietta with Athens and Cincinnati, which led to an increase in industries such as agriculture, oil, clay, shale, and sandstone. Oil was discovered at Duck Creek in the 1860's leading to a peak in petroleum production between 1890 and 1910. After World War I agriculture declined in Washington County and other industries were developed such as coal, forestry, and oil (Wright 1953).

As mentioned, Marietta was the first permanent and continually occupied settlement in Ohio; moreover, within the Northwest Territory. As such, it is no surprise that this town is and always was the county seat of Washington County. Upon entering this area, the Ohio Company men discovered that the Muskingum River valley and its surrounding banks and ridge tops were teeming with prehistoric earthworks testifying to the extinct civilization who previously had built and lived in this same location. The directors of the Ohio Company admired these sites and provided for their protection and preservation. The act creating the Town of Marietta came several years later in 1801. Dudley Woodbridge was the first storeowner in the Northwest Territory, having located on the corner of Muskingum and Ohio Streets. Many of the later stores lined the river in Marietta and Harmer. The location of Marietta on two navigable rivers made the community a center for commerce and industry early in its development. Shipbuilding was one of the first industries in Marietta and this drove the city to become an important early manufacturing and transportation hub (Andrews 1902).

Aside from Marietta, Belpre is the only other incorporated city in the county. There are five incorporated towns: Beverly, Lowell, Lower Salem, Macksburg, and Matamoras. It is made up of 22 townships, and it contains 15 unincorporated villages. Most of the growth, and therefore, most of the notable history in the county is contained within Marietta and to a lesser degree Belpre.

Muskingum Township History

Muskingum Township originally was contained completely within the first lines of Adams Township set in 1798. The creation of neighboring townships portioned Adams and until 1861, modern Muskingum lands were severally under the local governments of Fearing, Marietta, and Union Townships. It was thus established April 18, 1861 after the Ohio legislature passed a bill defining its boundaries. When Union Township dissolved in 1877, Muskingum received an additional portion (Andrews 1902; Marietta Daily Times 1938; William Bros 1881).

Settlement in Muskingum had begun long before, however, correlative to the end of the Indian Wars. Three settlements are notable there: The Rainbow Settlement, The Wiseman's Bottom Settlement, and the later settlement of a region known as "the ridge" (Andrews 1902; Marietta Daily Times 1938; William Bros 1881).

The Rainbow Settlement was established April 29, 1795 on the Muskingum River. Israel Stone and his family were the first settlers of the Rainbow district, a donation tract allotment. The Stacy, Dyar, and Stowe families followed very soon after. Another settlement, Wiseman's Bottom, was so close to Rainbow, that the name is nearly the only separation. The first settlers there were Barkers, Putnams, Devols, and Russells. This area had been cleared by a man named Wiseman in attempt to make a claim on the land. He left shortly after, and his claim was not honored because the area was purchased legally by the Ohio Company. He therefore is not considered the first settler of the area, but his name lingered past Colonel Joseph Barker's initial settlement there in 1795. The settlement of the ridge, which was located in the eastern portion of the township, did not begin until much later because of the obvious advantages of the land along the river. Although there were some sporadic pioneers on the ridge before 1825, real immigration began in 1833 with a large number of Germans entering that portion of the township (Andrews 1902; Marietta Daily Times 1938; William Bros 1881).

The first schoolhouse in Muskingum Township was apparently the one in Wiseman's Bottom which received land and much support from Israel Putnam. The first teacher there was Miss Esther Levings. No dates are recorded for the erection of the schoolhouse or when Levings started teaching; however, in 1816, the location was moved to higher ground on the same farm and a new schoolhouse, made of brick, served also as a church. The church was for the community and not affiliated with a particular domination, but there is record that the first to preach there was Joseph Willard, an Episcopal clergyman. As late as 1902, there were only two churches in the whole of Muskingum Township. One was the German dominated Evangelical Protestant Church in the ridge district. The other was a congregation of Methodist Episcopal African Americans on Rainbow Creek (Andrews 1902; William Bros 1881).

Two men are integral to the economic beginnings of the township. Colonel Joseph Baker and Captain Jonathan Devol. The industry that ties these two men in common was shipbuilding. As early as 1801 and 1802, Barker and Devol were building ocean worthy vessels out of the lumber from the forests that bordered their farms. Their work ended in 1809 when a Federal embargo act was passed. Col. Barker was certainly

the more productive shipbuilder, but Devol produced much wider architecture for the community. Capt. Devol built the first mill in the township which was a floating mill in 1796. His second was a larger floating mill built in 1803 and provided a great service to the early inhabitants up and down the Muskingum. He also built a large frame flouring mill and a dam in 1807. In 1866 Major Putnam added three buhrs at Devol's Dam which was considered then the best on the river. Captain Devol later added to the importance of the mill by adding a carding mill (Andrews 1902; Marietta Daily Times 1938; William Bros 1881). The Washington County Children's Home began in 1866 as an orphanage. It was the first in the state (Andrews 1902; Marietta Daily Times 1938; William Bros 1881).

Architectural Fieldwork Results

The field investigations for this project were conducted on December 7, 2017. No previously recorded resources were identified within the project or survey area. The project viewshed consisted of woodlands surrounded by a mixture of suburban residential homes and industrial properties (Figures 6-13). The viewshed of the project consists of the industrial area adjacent to the access road on Mill Creek Road. The station project area is surrounded by woodlands. The access road is in an industrial area that has surrounding suburban housing development. The survey APE outside the immediate viewshed consists of two housing developments that date to the late 1960s. S-1 is a severely altered vernacular industrial building built in about 1965. S-2 is a severely altered vernacular concrete block industrial building built in 1954. The S-2 factory has the unique business of manufacturing the aluminum historic markers in every state. S-3 is a severely altered vernacular metal industrial building built in 1952. S-4 is an altered vernacular concrete block industrial building built in 1954. S-5 is an altered vernacular brick ranch house built in 1967. S-6 is an altered vernacular brick split level house built in 1966. All of the resources have been altered by siding, replacement windows, replacement doors, or additions. All of the identified resources were found to be clearly not eligible for the NRHP under Criteria A, B, or C due to a lack of associative significance, a loss of integrity, or a lack of character defining features. The resources are all vernacular in style, and have experienced multiple alterations that have compromised their historic integrity.

Table 1. Field Survey Results

Field #	County	Figure	Classification	Date	Stylistic Influence	Type	NRHP Status
S-1	Washington	Figure 5	Building	Ca.1965	Vernacular	Industrial	Not Eligible
S-2	Washington	Figure 5	Building	1954	Vernacular	Industrial	Not Eligible
S-3	Washington	Figure 5	Building	1952	Vernacular	Industrial	Not Eligible

S-4	Washington	Figure 5	Building	1954	Vernacular	Industrial	Not Eligible
S-5	Washington	Figure 5	Building	1967	Vernacular	Ranch	Not Eligible
S-6	Washington	Figure 5	Building	1966	Vernacular	Split Level	Not Eligible

APE Definition and NRHP Determination

The APE is a term that must be applied on an individual project basis. The nature of the project or undertaking is considered in determining the APE. This may include areas that are off the property or outside of the actual project's boundaries to account for possible visual impacts. The APE for this project includes the footprint of the project and the viewshed surrounding the project area. There are no above-ground resources that are within the project area. No structures within the APE are eligible for inclusion on the NRHP.

Recommendations

In December of 2017, Weller & Associates, Inc. conducted History/Architecture Investigations for the Devola Substation Project in Muskingum Township, Washington County, Ohio. These investigations did not result in the identification of any historic properties. Weller recommends a finding of "no historic properties affected". No further cultural resource management work is considered necessary.

References Cited

Andrews, M. R.

1902 *History of Marietta and Washington County, Ohio and Representative Citizens*. The American Publishing Company, Chicago.

Gordon Stephen

1992 *How to Complete the Ohio Historic Inventory*. Ohio State Historic Preservation Office, Columbus, Ohio.

Heald, E. T.

1963 *History of Stark County. A digest of Mr. Heald's six-volume Stark County story*. Stark County Historical Society, Canton, Ohio.

Historic Aerials

NETR online. Electronic Document, <http://www.historicaerials.com/>, accessed October, 2017.

Howe, H., LL.D.

1888 *Historical Collections of Ohio in Two Volumes*. C.J. Krehbiel & Co., Printers and Binders, Cincinnati.

1854 *Historical Collections of Ohio; containing a collection of the most interesting facts, traditions, biographical sketches, anecdotes, etc. relating to its general and local history: with descriptions of its counties, principal towns and villages*. E. Morgan & Co's. Cincinnati, OH

Jakle, J.A., R.W. Bastian, and D.K. Meyer

1988 *Common Houses in America's Small Town: The Atlantic Seaboard to the Mississippi Valley*. University of Georgia, Athens, Georgia.

Lake, D.J.

1875 *Atlas of Washington County, Ohio*. Titus, Simmons & Titus, Philadelphia.

McAlester, V. and L.

2013 *A Field Guide to American Houses*. Alfred A. Knopf, New York.

National Park Service

1983 *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines*. National Park Service, Department of the Interior, Washington, D.C.

1996 *How to Apply the NRHP Criteria for Evaluation*. NRHP Bulletin 15. National Park Service, Department of the Interior, Washington, D.C.

1997 *Guidelines for Local Surveys: A Basis for Preservation Planning*. NRHP Bulletin 24. National Park Service, Department of the Interior, Washington, D.C.

USGS Historical Topographic Map Explorer

Electronic Document, <http://historicalmaps.arcgis.com/usgs/>, accessed December, 2017.

Weller, R. J.

2005a Data Recovery at the Haven Site (33DL1448) Located in Liberty Township, Delaware County, Ohio. Weller & Associates. Submitted to the Delaware County Sanitary Engineer's Office.

2005b Data Recovery at the Knowlton Site (33DL1450) Located in Liberty Township, Delaware County, Ohio. Weller & Associates. Submitted to the Delaware County Sanitary Engineer's Office.

Williams Bros., pub.

1881 History of Washington County, Ohio; with Illustrations and Biographical Sketches. H. Z. Williams & Bro., Cleveland, Ohio

Figures

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Figure 1. Political map of Ohio showing the approximate location of the project.

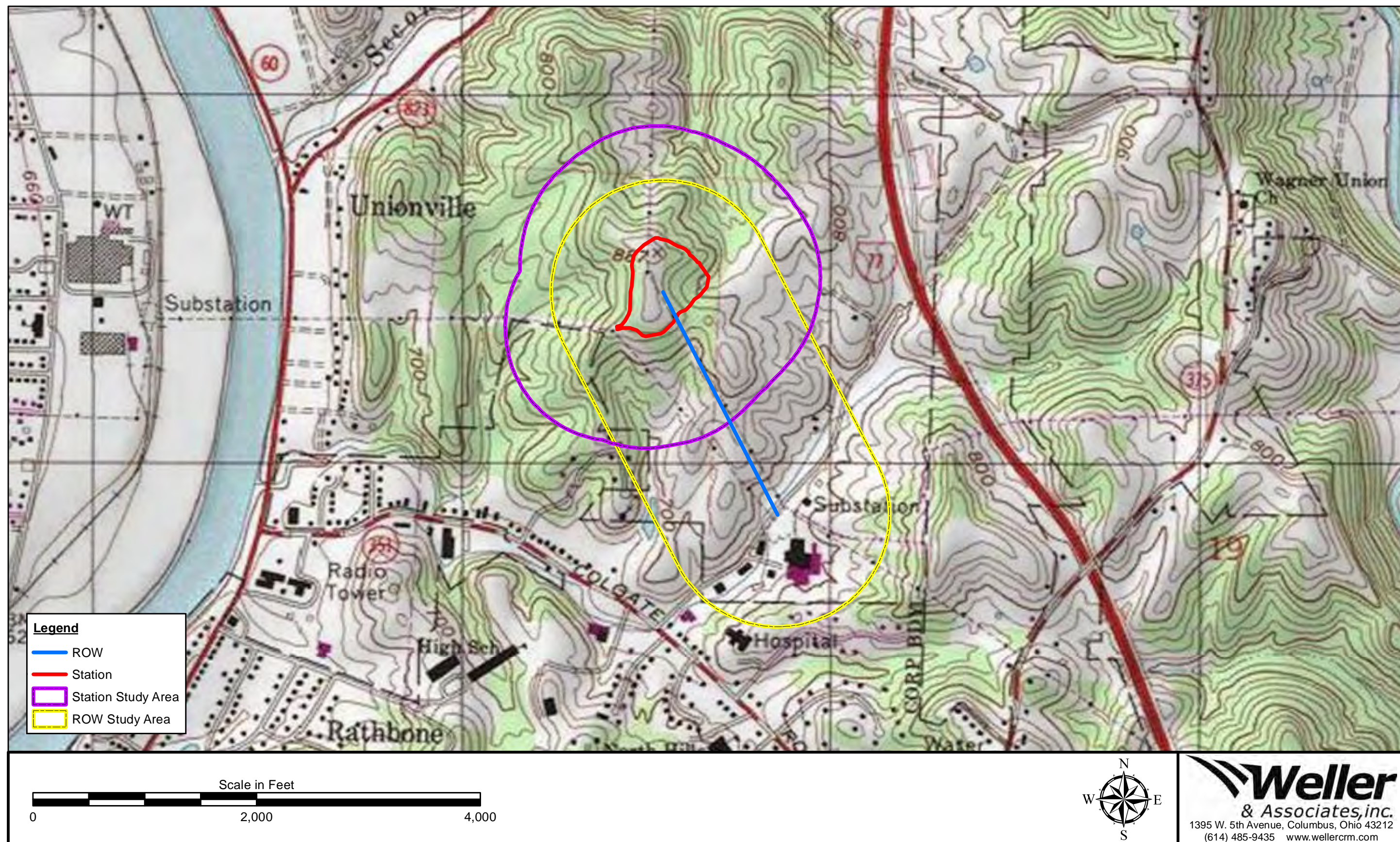


Figure 2. Portion of the USGS 1975 Marietta, Ohio 7.5 Minute Series (Topographic) map indicating the location of the project and study areas.

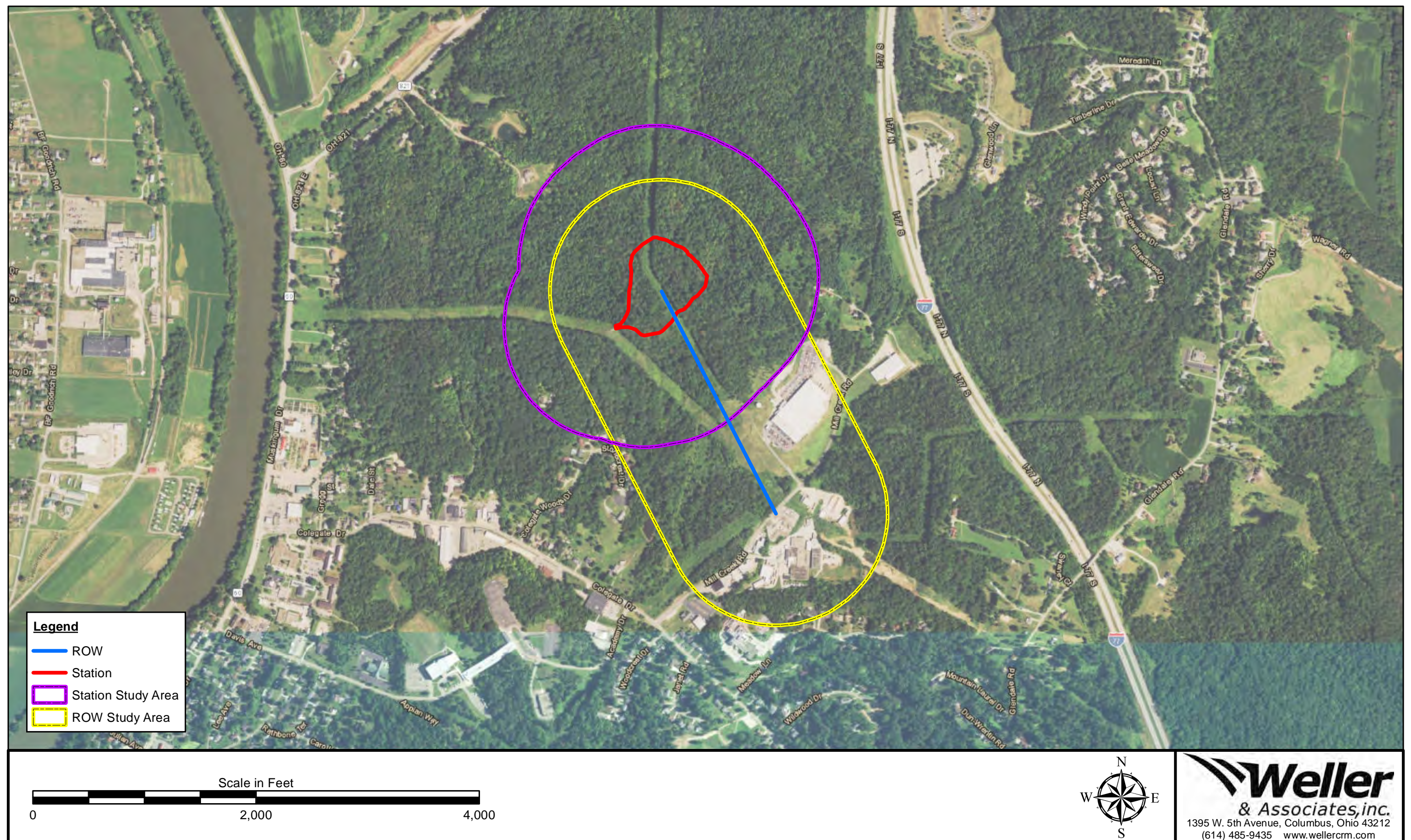


Figure 3. Aerial map indicating the location of the project and study areas.

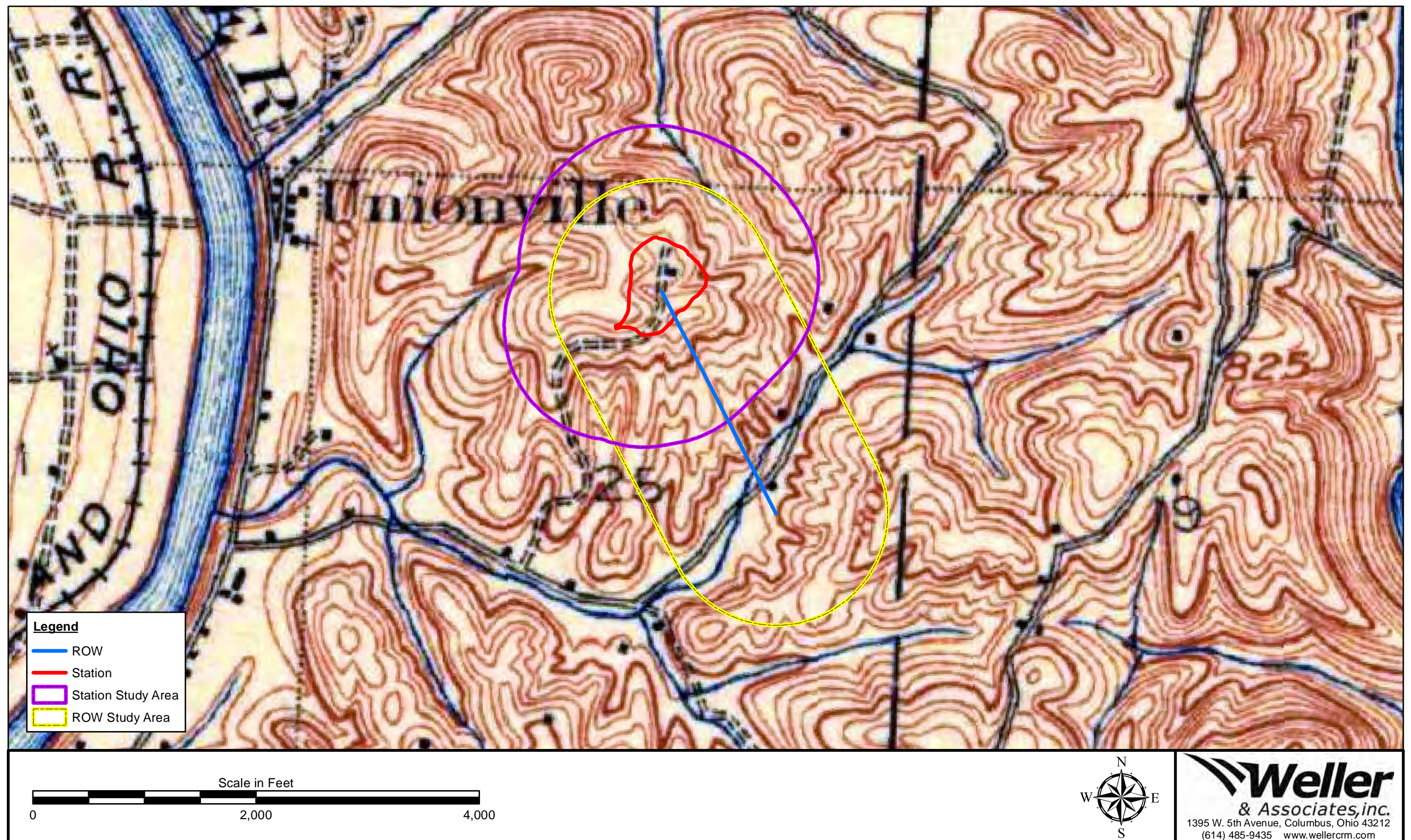


Figure 4. Portion of the USGS 1904 Marietta, Ohio 15 Minute Series (Topographic) map indicating the approximate location of the project and study areas.

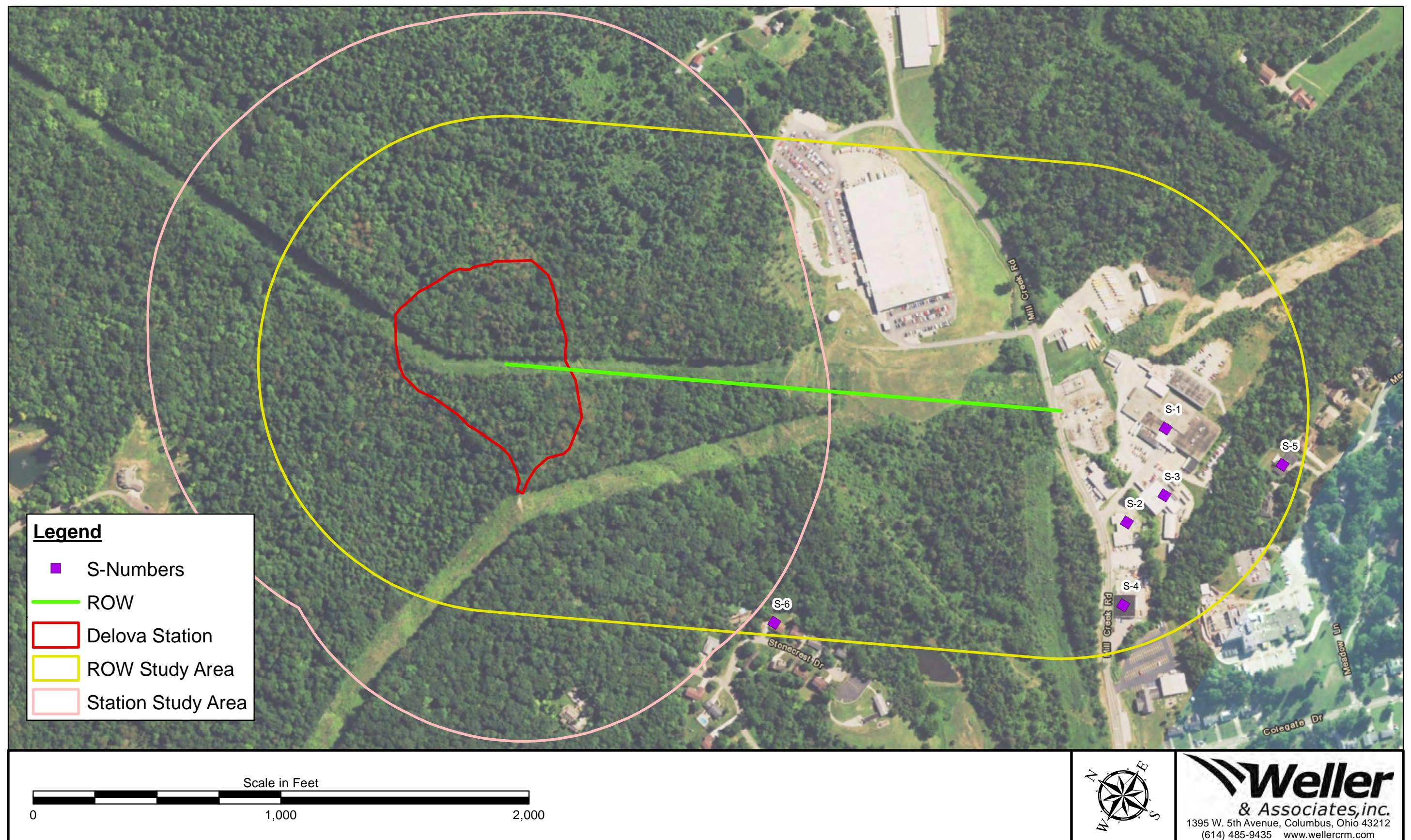


Figure 5. Fieldwork Results Showing the Project and Study Areas, and Resource Locations.



Figure 6. S-1 Mill Creek Drive facing east, Muskingum Township, Washington County.



Figure 7. S-2 Mill Creek Drive facing northeast, Muskingum Township, Washington County.



Figure 8. S-3 Mill Creek Drive facing southeast, Muskingum Township, Washington County.



Figure 9. S-4 Mill Creek Drive facing south, Muskingum Township, Washington County.



Figure 10. S-5 Meadow Lane facing north, Marietta, Washington County.



Figure 11. S-6 Stonecrest Drive facing northeast, Marietta, Washington County.



Figure 12. View from the project area Mill Creek Drive facing south, Muskingum Township, Washington County.



Figure 13. View facing the project area from S-2 Mill Creek Drive facing north, Muskingum Township, Washington County.



Figure 14. View facing the project area from S-6 Stonecrest Drive facing northwest, Marietta, Washington County.

LETTER OF NOTIFICATION FOR DEVOLA STATION PROJECT

Appendix D Ecological Resources Inventory Report

Appendix D Ecological Resources Inventory Report

Ecological Resources Inventory Report

**American Electric Power
Devola 138kV Substation Project
Washington County, Ohio**

Prepared for



An AEP Company

BOUNDLESS ENERGY™

January 2018



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C	Threatened and Endangered Species Consultation

Acronyms and Abbreviations

AEP	American Electric Power
CH2M	CH2M HILL Engineers, Inc
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
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	Devola 138 kV Substation 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 January 10, 2017, May 18, 2017, and August 14, 2017 in Washington County, Ohio by CH2M HILL Engineers, Inc. (CH2M) for the American Electric Power (AEP) Devola 138 kilovolt (kV) Substation Project (Project).

AEP is proposing to construct a new 138 kV electric substation that will connect 138kV transmission lines from the future Macksburg Substation via the Highland Ridge Substation. This report covers the 16.6 acres that encompasses the proposed Devola Substation site.

- 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 2-2 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 waterbody 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 environmental study area (ESA) and methodology used during the wetland and waterbody delineation field surveys.

2.1 Environmental Study Area

The proposed substation site is located approximately 0.4 miles northwest of Mill Creek Road near the community of Devola, Ohio. The ESA is comprised of an approximate 16.6-acre area for the Devola substation footprint plus one proposed permanent access road approximately 2,400 feet in length.

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, and siltstones, sandstones, limes, and coals characterizes 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 substation site is located on a ridge top. The existing transmission line and proposed permanent access road ascend to the substation site from Mill Creek Road.

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

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 (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
Devola 138kV Substation Project

	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

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

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

³Displayed 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 single stream in the ESA is an unnamed tributary to the Muskingum River.

3 Wetland and Waterbody Delineation

3.1 Desktop Review

Prior to conducting the field investigations, CH2M 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), 8 soil map units are crossed by the ESA. None of the soil map units are listed as hydric or predominantly hydric; 1 unit is listed as predominantly non-hydric and the remaining 7 units are listed as not hydric (Figure 2; Table 2-2). NRCS data indicate that predominantly non-hydric soils comprise approximately 0.15 acres (1 percent) of the ESA. Approximately 16.5 acres (99 percent) of land cover in the environmental study area 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) (USFWS, 2015)

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 stream identified within the ESA has a drainage areas smaller than one square mile. In accordance with the Ohio Water Quality Standards, the stream was evaluated using the OEPA Headwater Habitat Evaluation Index (HHEI; OEPA, 2012). The HHEI classifies streams based on habitat characteristics. Utilizing the HHEI scores and CH2M’s 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

One stream was delineated within the ESA. The feature identified is displayed on Figure 4.

4.1 Wetland and Waterbody Summary

Summary information for the waterbody characteristic within the ESA is provided in Tables 3-1, below. The length (feet) of the stream within the ESA is included; however, this feature will not be impacted by Project construction due to an existing permanent concrete bridge and culverts.

4.1.1 Wetlands

No wetlands were identified or delineated within the ESA.

4.1.2 Waterbodies

A total of one stream, delineated as SDS106, was identified within the ESA. The stream is an unnamed tributary to the Muskingum River. The flow regime determination, classified as perennial, was interpreted based on the HHEI scores, field observations, and the USGS topographic maps (Figure 1). The stream appears to have significant nexus with a TNW and is 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, in this case, the Muskingum River. The stream is covered by an existing concrete bridge structure and culverted on either side of the proposed permanent access road.

The HHEI form is provided in Appendix A and representative photographs of the stream are provided in Appendix B.

Table 3-1. Project Study Area Stream Summary
Devola 138kV Substation Project, 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
SDS106	proposed permanent access road	UNT Muskingum River	Perennial	050400041204	0.49	20	RPW	N/A	61	Class II	Ineligible	Muskingum River

Abbreviations:

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

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)

4.2 Land Use and Habitat Summary

CH2M field biologists conducted a general habitat survey in conjunction with the wetland and waterbody field surveys during the August 2017 site visit. The ESA comprises early successional forest, existing transmission right-of-way (ROW), mowed/maintained commercial lawns, 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 a portion of the proposed permanent access road and portions of the Devola substation footprint. Dominant species include white oak (*Quercus alba*, FACU), American beech (*Fagus grandifolia*, FACU), sugar maple (*Acer saccharum*, FACU), Ohio buckeye (*Aesculus 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 including portions of the proposed permanent access road, the existing transmission ROW, and the Devola substation footprint, includes dominant 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).

The maintained commercial lawns make up a small portion of the proposed permanent access road and include dominant species such as Kentucky blue grass (*Poa pratensis*, FACU) and crabgrass species (*Digitaria sp.*).

5 Protected Species

CH2M 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, CH2M submitted an Ohio Natural Heritage Database Request to the ODNR Division of Wildlife (DOW), 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 Project area. 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 study area in Washington County, Ohio.

Table 5-1. Federally Listed Species Recorded in Washington County

Federal Listed Threatened and Endangered Species Impact Assessment, Devola 138kV Substation Project

Common Name (Species Name)	Federal Status	General Habitat Notes	Recorded Location within Project Vicinity	Potential Habitat in ESA
Mammals				
Indiana bat <i>Myotis sodalis</i>	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 <i>(Myotis septentrionalis)</i>	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

State Listed Threatened and Endangered Species Impact Assessment, Devola 138kV Substation Project

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Mammals				
Indiana bat (<i>Myotis sodalis</i>)	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 (<i>Ursus americanus</i>)	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 (Ichthyomyzon 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
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

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

State Listed Threatened and Endangered Species Impact Assessment, Devola 138kV Substation Project

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
River darter (<i>Percina shumardi</i>)	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 (<i>Percina copelandi</i>)	Threatened	Found in large, coarse 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 (<i>Etheostoma tippecanoe</i>)	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 (<i>Plethobasus cyphus</i>)	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 (<i>Cyprogenia stegaria</i>)	Endangered	Found in medium to large rivers and buries itself in sand or gravel in deep water. Found in the Ohio River and tributaries	Yes, within one mile radius of the ESA.	No
Pick mucket (<i>Lampsilis orbiculate</i>)	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 (<i>Epiloblasma triquetra</i>)	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
Washboard (<i>Megaloniais nervosa</i>)	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

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA
State Listed Threatened and Endangered Species Impact Assessment, Devola 138kV Substation Project

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
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
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

Table 5-2. State-Listed Species Recorded Within One Mile of the ESA
State Listed Threatened and Endangered Species Impact Assessment, Devola 138kV Substation Project

Common Name (Species Name)	State Status	General Habitat Notes	Recorded Location within One Mile Radius of ESA	Potential Habitat in ESA
Threehorn wartyback (<i>Obliquaria reflexa</i>)	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 (<i>Crotalus horridus horridus</i>)	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 (<i>Cryptobranchus alleganiensis alleganiensis</i>)	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 (<i>Scaphiopus holbrookii</i>)	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 138 kV electric Substation in Washington County, Ohio. Field surveys were conducted by CH2M on January 10, 2017, May 18, 2017, and August 14, 2017. The project could result in temporarily impacting one perennial stream an unnamed tributary to the Muskingum River, identified as SDS106. The proposed access road to the Devola Station crosses this stream using the existing paved driveway installed over a culvert; the culvert may need to be replaced as part of this Project. SDS106 is expected to be within the USACE's jurisdiction due to the connection to the Muskingum River. 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

- Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.
- Google Earth Pro. 2016. Google, Inc.
- IUCN. 2017. Red List of Threatened Species. Available at <http://www.Mackredlist.org>. Accessed August 25, 2017.
- Mack, John J. 2001. Ohio Rapid Assessment Method for Wetlands, Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- CH2M. 2017. AEP Macksburg-Devola 138kV Ecological Report.
- NatureServe Explorer. 2016. An Online Encyclopedia of Life. NatureServe. Available at <http://explorer.natureserve.org>. Accessed August 25, 2017.
- NOAA. 2015-2017. Monthly Weather Summary. Columbus. <http://www.nws.noaa.gov/climate/index.php?wfo=iln>. Accessed August 23, 2017.
- Ohio Administrative Code (OAC). 2003. Chapter 3745-1, *Water Quality Standards*. <http://codes.ohio.gov/oac/3745-1>. Accessed in August 23, 2017.
- Ohio Environmental Protection Agency (OEPA). 2000. *ORAM v. 5.0 Quantitative Score Calibration*. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 2012. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Final Version 3.0. January 2012.
- Ohio Department of Natural Resource (ODNR) Ohio Division of Geological Survey. 1998. Physiographic regions of Ohio: Ohio Department of Natural resources. Division of Geological Survey. page-size map with text, 2 p., scale 1:2,100,00.
- ODNR. 2017. Office of Real Estate. John Kessler. Letter to CH2M. Re. 17-680, Devola 138kV Substation Project. November 20, 2017.
- U.S. Army Corps of Engineers (USACE). 1987. Technical Report Y-87-1, *Corps of Engineers' Wetlands Delineation Manual*.
- United States Army Corps of Engineers (USACE). 2009. Approved Jurisdictional Determination Form, Muskingum River. Available online at <http://www.lrh.usace.army.mil/Missions/Regulatory/Jurisdictional-Determinations/Traditionally-Navigable-Waters-TNWs-OH/>. Accessed August 23, 2017.
- U.S. Army Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*. http://www.usace.army.mil/missions/civilworks/regulatoryprogramandpermits/reg_supp.aspx. Accessed August 23, 2017.
- U.S. Army Corps of Engineers (USACE). 2016. Section 10 Streams in the Huntington District. <http://www.lrh.usace.army.mil/Missions/Regulatory/Section10Streams.aspx>. Accessed August 23, 2017.
- U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA). 2008. Memorandum "Revised Guidance on Clean Water Act Jurisdiction Following the Supreme Court Decision in *Rapanos v. U.S. and Carabell v. U.S.*" http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/cwa_juris_2dec08.pdf. Accessed August 23, 2017.

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2016. Soil Survey Geographic (SSURGO) Database for Washington County, OH. Available online at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed August 2017.

U.S. Fish and Wildlife Service (USFWS). 2015. National Wetlands Inventory. <http://www.fws.gov/wetlands/Wetlands-Mapper.html>. Accessed August 23, 2017.

USFWS. 2017. Field Office Supervisor Dan Everson. Letter to CH2M. Re. Devola 138kV Substation Project, Marietta, Washinton County. September 11, 2017.

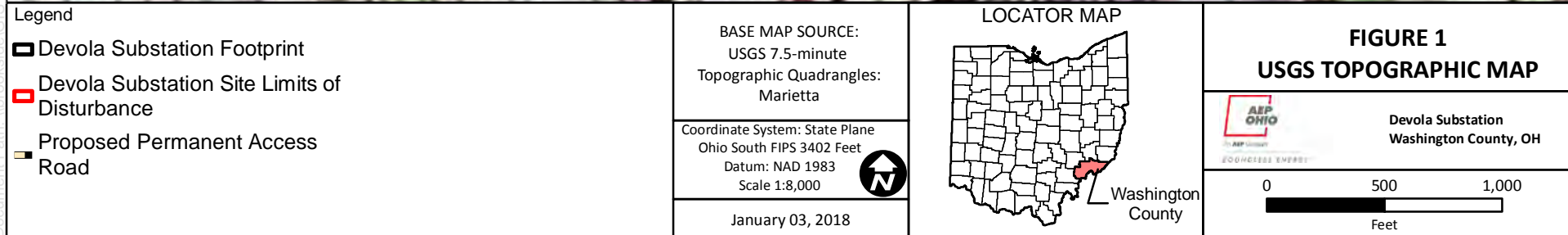
USFWS Environmental Conservation Online System (ECOS). 2016. Threatened and Endangered Species. Available at <https://ecos.fws.gov/ecp/>. Accessed August 25, 2017.

USFWS. 2017a. 2017 Range-Wide Indiana Bat Summer Survey Guidelines. <https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>. Accessed August 29, 2017.

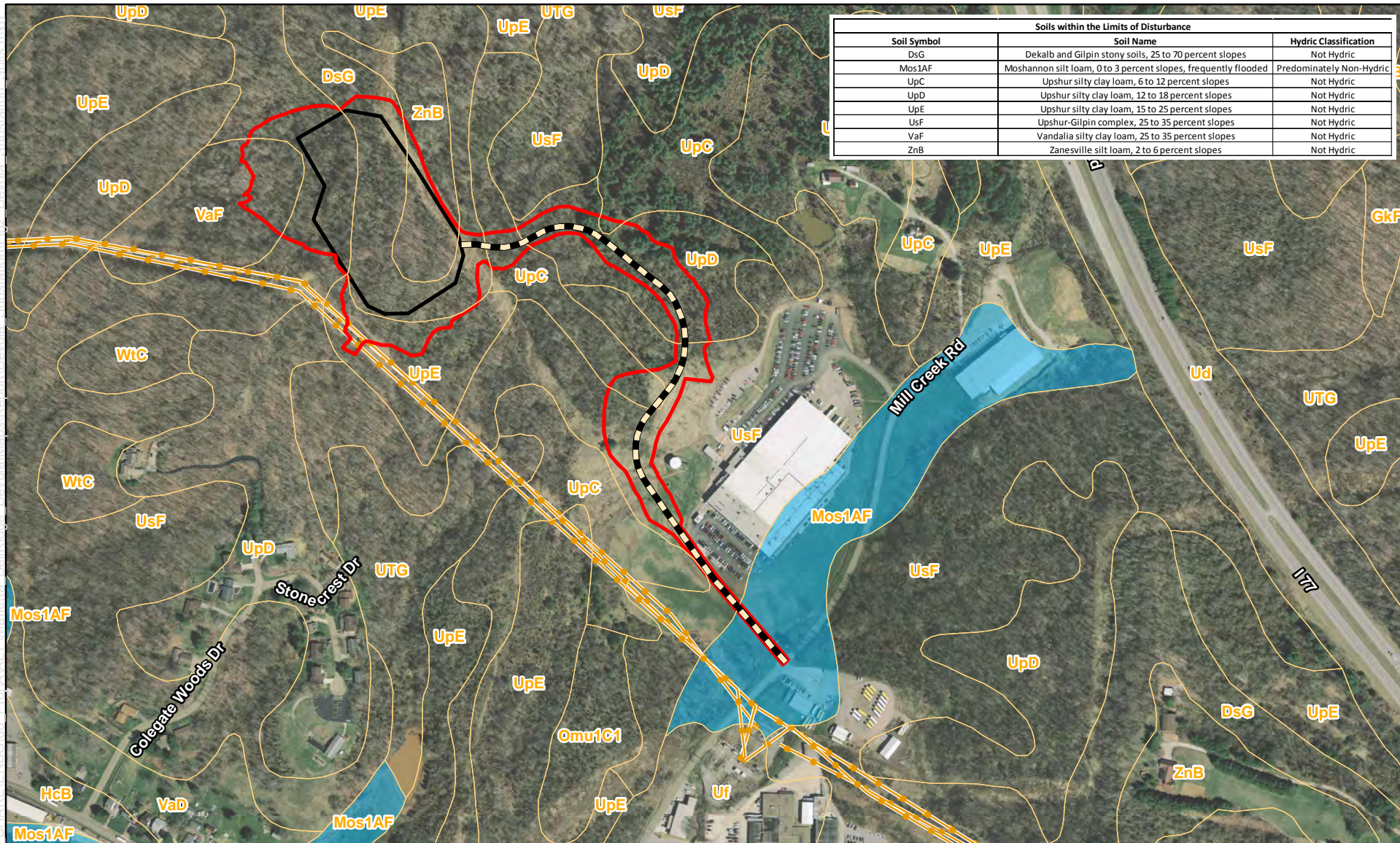
U.S. Geological Survey (USGS). 2015. National Hydrography Dataset, Ohio. <http://nhd.usgs.gov/data.html>. Accessed August 23, 2017.

U.S. Geological Survey (USGS). Marietta, Ohio-W.Va. [map]. 1975. 1:24,000. 7.5 Minute Series. Reston, Va: United States Department of the Interior, USGS.

Figures



Document Path: \\brooks\GIS\SHARE\NR\GIS\Devola\Mapa\Report\Devola_Substation\Fig2_Devola_Substation_Soils.mxd



Soils within the Limits of Disturbance		
Soil Symbol	Soil Name	Hydric Classification
DsG	Dekalb and Gilpin stony soils, 25 to 70 percent slopes	Not Hydric
Mos1AF	Moshannon silt loam, 0 to 3 percent slopes, frequently flooded	Predominately Non-Hydric
UpC	Upshur silty clay loam, 6 to 12 percent slopes	Not Hydric
UpD	Upshur silty clay loam, 12 to 18 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
VaF	Vandalia silty clay loam, 25 to 35 percent slopes	Not Hydric
ZnB	Zanesville silt loam, 2 to 6 percent slopes	Not Hydric

- Legend
- Devola Substation Footprint
 - Devola Substation Site Limits of Disturbance
 - Proposed Permanent Access Road
 - Existing Transmission Line
 - Soil Map Unit
 - Predominantly Non-Hydric Soil

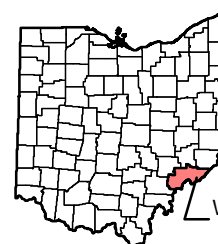
BASE MAP SOURCE:
Ohio Statewide Imagery
Program, 2014

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

January 03, 2018



LOCATOR MAP

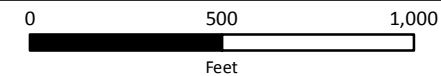


Washington
County

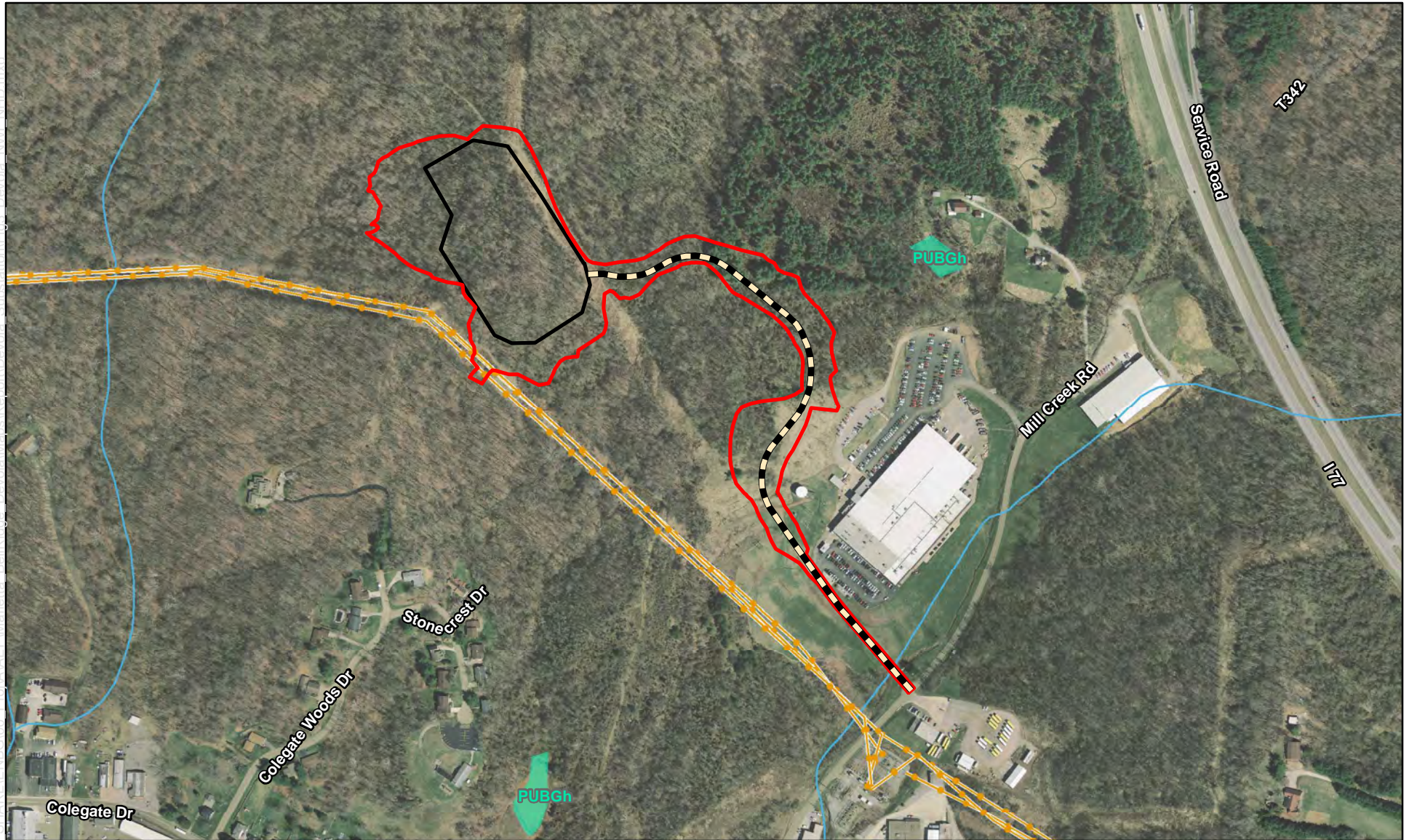
FIGURE 2 SOIL MAP



Devola Substation
Washington County, OH



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Legend

- Devola Substation Footprint
- Devola Substation Site Limits of Disturbance
- Proposed Permanent Access Road
- Existing Transmission Line
- Stream (NHD)
- Wetland (NWI)

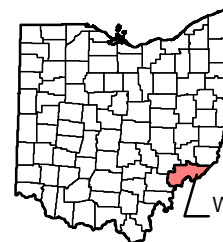
BASE MAP SOURCE:
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Program, 2014

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

January 02, 2018



LOCATOR MAP

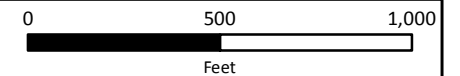


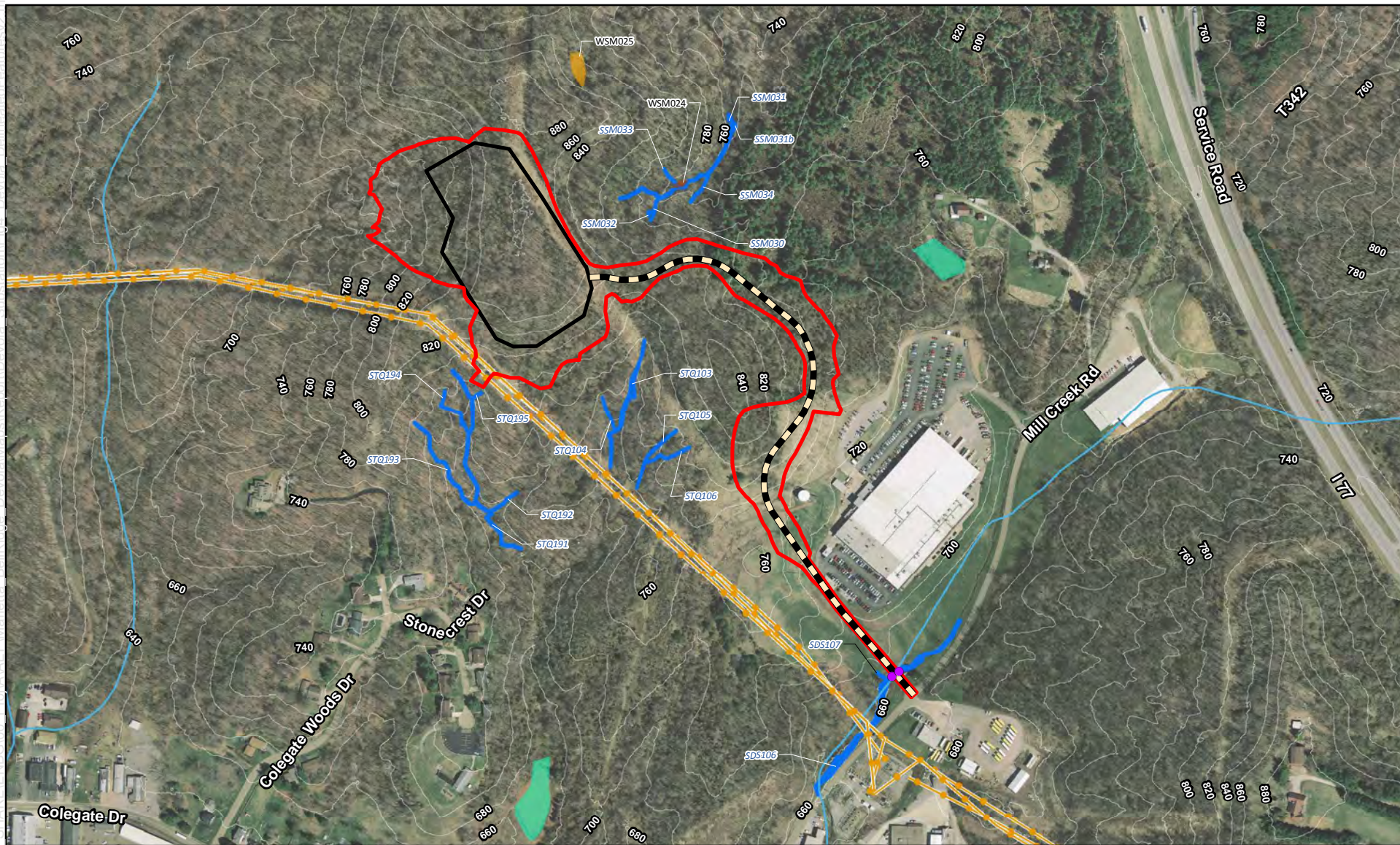
Washington
County

FIGURE 3 NHD STREAMS/WATERBODIES AND NWI WETLANDS



Devola Substation
Washington County, OH





Legend

- | | | |
|--|-------------------|---------------------------|
| Devola Substation Footprint | Culvert | Delineated Wetland |
| Devola Substation Site Limits of Disturbance | Stream (NHD) | Palustrine Emergent (PEM) |
| Proposed Permanent Access Road | Wetland (NWI) | Palustrine Forested (PFO) |
| Existing Transmission Line | Delineated Stream | |

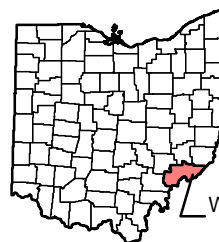
BASE MAP SOURCE:
Ohio Statewide Imagery
Program, 2014

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

January 04, 2018



LOCATOR MAP

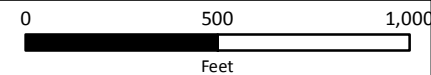


Washington
County

FIGURE 4
WETLAND, WATERBODIES
DELINEATION MAP



Devola Substation
Washington County, OH



Appendix A
OEPA Primary Headwater Habitat Evaluation Forms



Primary Headwater Habitat Evaluation Form

61

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

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 PWH 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="30%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="15%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="20%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="10%"/>	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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
PointsSubstrate
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):

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

Pool Depth
Max = 30

30

COMMENTS

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

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

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

Bankfull
Width
Max=30

20

COMMENTS

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

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH

FLOODPLAIN QUALITY

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

COMMENTS

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

<input checked="" type="checkbox"/> WWH Name: Muskingum River	Distance from Evaluated Stream	>5,000 ft
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATIONUSGS 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) ☒ NComments 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 →



Appendix B

Photo Documentation

Representative Site Photographs



PHOTO NO.	SITE NAME	DIRECTION	DATE OF SURVEY	WATERBODY NAME	FLOW REGIME
PP467	SDS106	NE, Upstream	18-May-17	UNT to Muskingum River	Perennial

Notes: NHD Perennial stream SDS106 looking upstream, located on the eastern side of the proposed access road study area.



PHOTO NO.	SITE NAME	DIRECTION	DATE OF SURVEY	WATERBODY NAME	FLOW REGIME
PP468	SDS106	SW, Downstream	18-May-17	UNT to Muskingum River	Perennial

Notes: NHD Perennial stream SDS106 looking downstream, located on the western side of the proposed access road study area.



PHOTO NO.	SITE NAME	DIRECTION	DATE OF SURVEY	WATERBODY NAME	FLOW REGIME
PP469	SDS106	Substrate	18-May-17	UNT to Muskingum River	Perennial

Notes: NHD Perennial stream SDS106 looking at the primary substrate, silt and artificial stone, located on the eastern side of the proposed access road study area.



PHOTO NO.	SITE NAME	DIRECTION	DATE OF SURVEY
PP627	Access road	N	14-August-2017

Notes: The location of the proposed permanent access road looking north leading to the Devola substation.



PHOTO NO.	SITE NAME	DIRECTION	DATE OF SURVEY
PP626	Access road	SE	14-August-2017

Notes: The location of the proposed permanent access road looking southeast towards Thermo Fisher Industries and Mill Creek Road.

Appendix C
Threatened and Endangered Species Consultation



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 (*Megaloniais nervosa*), E
Threehorn wartyback (*Obliquaria reflexa*), T
Sheepnose (*Plethobasus cyphus*), 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 sheepsfoot (*Pleurobema 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 (*Megaloniais 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

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/nleeb/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,

A handwritten signature in blue ink, appearing to read "Dan Everson", with a stylized flourish at the end.

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

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in

Case No(s). 18-0034-EL-BLN

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