Legal Department

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March 1, 2019

Docketing
Ohio Power Siting Board
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Columbus, Ohio 43215

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Re: Case No. 19-0266-EL-BLN
In the Matter of the Letter of Notification for the Anguin-Babbitt 138 kV Transmission Line Project

Dear Sir or Madam,

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

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

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

Respectfully submitted,

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

Counsel for AEP Ohio Transmission Company, Inc.

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

Letter of Notification Anguin-Babbitt 138 kV Transmission Line Project

PUCO Case No. 19-0266-EL-BLN

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

Submitted by:
AEP Ohio Transmission Company, Inc.

March 1, 2019

Letter of Notification

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco)
Anguin-Babbitt 138 kV Transmission Line

4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco") is providing this Letter of Notification ("LON") to the Ohio Power Siting Board ("OPSB") in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(B) General Information

B(1) Project Description

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

AEP Ohio Transco proposes the Anguin-Babbitt 138 kV Transmission Line Project ("Project"), which is located in Licking County, Ohio. The Project involves constructing approximately 1.6 miles of 138 kV transmission line between Babbitt Station (OPSB Case Number 17-1325-EL-BLN), which is currently under construction, and the proposed Anguin Station (OPSB Case Number 19-0040-EL-BLN). The new 138 kV transmission line provides power to Anguin Station. The Project also consists of an approximately 0.4 mile 138 kV transmission line extension from the Anguin Station to a customer facility. The Project location in relation to the surrounding vicinity can be seen in **Figure 1, Appendix A**.

The Project meets the requirements for a Letter of Notification because it is within the types of projects defined by Item 1(d) of Ohio Administrative Code Section 4906-1-01 Appendix A, Application Requirement Matrix for Electric Power Transmission Lines. This item states:

> *(1) New construction, extension or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:*
>
> *(d) Line(s) primarily needed to attract or meet the requirements of specific customer or customers, as follows:*
>
> *(ii) Any portion of the line is on property owned by someone other than the specific customer or applicant.*

The Project has been assigned PUCO Case 19-0266-EL-BLN.

B(2) Statement of Need

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

The Project, together with Anguin Station, is a customer-driven project for a new source in New Albany, Ohio with a maximum proposed load of 720 MW. The customer plans to phase their load, where the first phase will be 150 MW and subsequent phases will progressively rise to 720 MW (peak) load. AEP Ohio Transco proposes to construct a new 138kV breaker and a half station (Anguin), fed from Babbitt Station by this Project to serve up to 12 transformers.

The need for the project was filed with PJM, as a Supplemental Project, for review in October 2018. The solution statement for the customer needs were discussed in a follow up meeting in February 2019 The project will be included in the 2019 Long Term Forecast Report (LTFR) filing in the spring of 2019. AEP Ohio Transco will provide the PJM reference number to OPSB once it has been assigned.

B(3) Project Location

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

The location of the Project in relation to existing transmission lines and stations is shown on **Figure 1, Appendix A**. The Project directly impacts the following existing facilities:

- Babbitt Station

B(4) Alternatives Considered

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

The proposed transmission line location was determined in coordination with the customer's development planning effort. The selected route meets the needs of the specific customer and will ultimately be surrounded by future commercial land uses of the developer. A majority of the Project proposes to parallel a road that will be used for future development, which minimizes impacts to the community, as well as impacts to ecological features. There is only one residence located in the Project area, which is approximately 400 feet from the proposed route. Although other transmission line routes were considered, they were ultimately not feasible given the future development plans. Other alternatives would also require impacting neighboring properties as opposed to remaining entirely on the customers' properties.

B(5) Public Information Program

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

AEP Ohio Transco will inform affected property owners and tenants about this Project through several different mediums. Within seven days of filing this Letter of Notification ("LON"), AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of OAC Section 4906-6-08(A)(1-6). Further, AEP Ohio Transco has mailed (or will mail) a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner AEP Ohio Transco may approach affected property owners for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). AEP Ohio Transco maintains a website (http://aeptransmission.com/ohio/) which provides the public access to an electronic copy of this LON and the public notice for this LON. A paper copy of the LON will be served to the public library in each political subdivision for this Project. AEP Ohio Transco retains right-of-way ("ROW") land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the project.

B(6) Construction Schedule

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

Construction of the Project is planned to begin in June 2019 with an anticipated in-service date of February 2020.

B(7) Area Map

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

Figure 1, Appendix A provides the proposed Project area and transmission line alignment on a map of 1:24,000-scale, showing the United States Geological Survey (USGS) 7.5-minute topographic maps of the New Albany and Jersey quadrangles. **Figure 2, Appendix A** shows the Project area on recent aerial photography, as provided by Bing Maps.

To access the Project location from the OPSB Office, take I-670 East for approximately 6 miles to I-270 North. At exit 30, take the ramp right for Ohio 161 East toward New Albany. After 8.4 miles, take the ramp right and follow signs for Township Highway 88/Beech Road. Turn right on Beech Road and continue 0.5 mile. The Project site is located near latitude 40.070465, longitude -82. 754222.

B(8) Property Agreements

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

The proposed Project will be constructed on property currently owned by two customers and will require crossing over Beech Road. Easements are being established with the customer between the existing Babbitt Station and the proposed Anguin Station and to a customer's facility. A list of the properties and obtained easements, options, and/or land use agreements for the Project is provided in the table below.

Property Parcel Number	Easement Agreement/ Option Obtained (Yes/No)
9410674000003	Yes
9410640400000	No
9410710600000	No
9410710600001	No
9410689600000	No

B(9) Technical Features

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

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

The Anguin-Babbitt 138 kV transmission line construction will include the following, based on current design:

Voltage: 138kV
Conductors: 2 x bundled 795 kcmil 26/7 ACSS
Static Wire: OPGW
Insulators: Polymer
ROW Width: 100 Feet
Estimate Number of Structure Types:

- Double circuit steel pole dead end structure. Four (4) structures are needed.
- Double circuit steel pole angle structure. Six (6) structures are needed.
- Double circuit steel pole tangent structure. Four (4) structures are needed.
- Single circuit steel pole dead end structure. Three (3) structures are needed.

The Anguin Extension 138 kV transmission line construction will include the following, based on current design:

Voltage: 138kV
Conductors: 795 kcmil 26/7 ACSS (not bundled)
Static Wire: OPGW
Insulators: Polymer
ROW Width: 100 Feet
Estimated Number of Structure Types:

- Double circuit steel pole dead end structure. Two (2) structures are needed.
- Double circuit steel pole angle structure. One (1) structures are needed.
- Double circuit steel pole tangent structure (direct embedded). Three (3) structures are needed.

B(9)(b) Electric and Magnetic Fields

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

This section is not applicable. No occupied residences or institutions are located within 100 feet of the Project.

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

This section is not applicable. There are no occupied residences or institutions located within 100 feet of the Project.

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

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

This section is not applicable. There are no occupied residences or institutions located within 100 feet of the Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $13,500,000, using a Class 3 estimate.

B(10) Social and Economic Impacts

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

B(10)(a) Land Use Characteristics

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

An aerial photograph of the Project vicinity is provided as **Figure 2, Appendix A**. The Project location has historically been primarily agricultural land with scattered woodlots. However, the area is being developed for commercial use. The Project is located in the Village of New Albany in Jersey Township and Licking County.

B(10)(b) Agricultural Land Information

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

One parcel (9410640400000) is currently listed as agricultural district land by the Licking County Auditor. However, this parcel is currently under construction for commercial development. The other parcels crossed by the Project are not registered as agricultural district land.

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Archaeological and historic architectural investigations were conducted by an AEP Ohio Transco consultant for this Project. No cultural resources concerns were identified. The reports are currently being reviewed by the Ohio History Connection ("OHC") and the results of the survey activity will be coordinated directly with the OPSB.

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

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

Best management practices (BMPs) will be implemented and maintained to minimize erosion and control sediment to protect surface water quality during storm events. A project-specific Storm Water Pollution Prevention Plan (SWPPP) will be prepared and a Notice of Intent (NOI) will be filed with the Ohio

Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000005.

The Project is not crossed by Federal Emergency Management Agency ("FEMA") 100-year floodplains. Therefore, no floodplain permitting is required for the Project.

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

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

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

Coordination with the United States Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) occurred as part of the overall customer development project for areas of the Project west of Beech Road. The Indiana and northern long-eared bats are the only species identified as potential concerns by these agencies. Through additional surveys and coordination performed through the customer's development efforts, no restrictions are required for tree clearing within the limits of disturbance proposed for the Project west of Beech Road.

Additional coordination was done for the Project area east of Beech Road with ODNR and USFWS. However, a response has not yet been received. Correspondence with these agencies will be provided to OPSB once they are received.

B(10)(f) Areas of Ecological Concern

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

AEP Ohio Transco's consultant conducted a wetland and stream delineation field survey in February 2019. Two wetlands and three streams were identified within the Project area. Details of the wetland and stream delineation are presented in the Wetland Delineation and Stream Assessment Report, included as **Appendix B**. A stormwater pollution prevention plan (SWPPP) will also be prepared prior to construction.

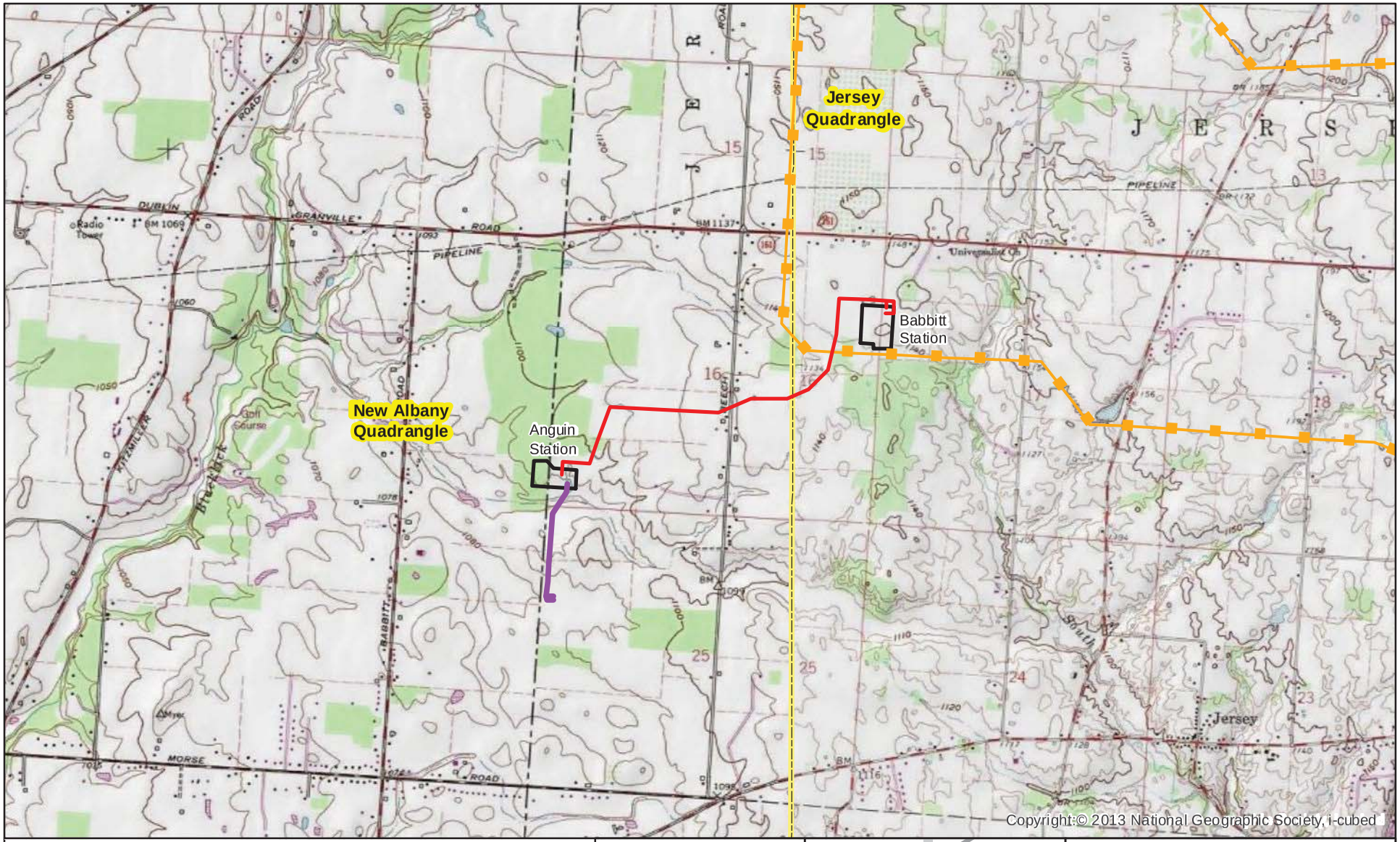
The FEMA Flood Insurance Rate Map was consulted to identify any floodplains/flood hazard areas that have been mapped in the Project area (specifically, map number 39089C). Based on this map, no mapped FEMA floodplains are located in the Project area.

B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps



Proposed Anguin-Babbitt 138 kV Transmission Line
Proposed Anguin 138 kV Extension
Station
Existing Transmission Line (345 kV+)
USGS 7.5' Topographical Quadrangle

Data Sources: AEP (2019), USGS (2018), ESRI (2013)

Coordinate System:
State Plane Ohio South
NAD 83

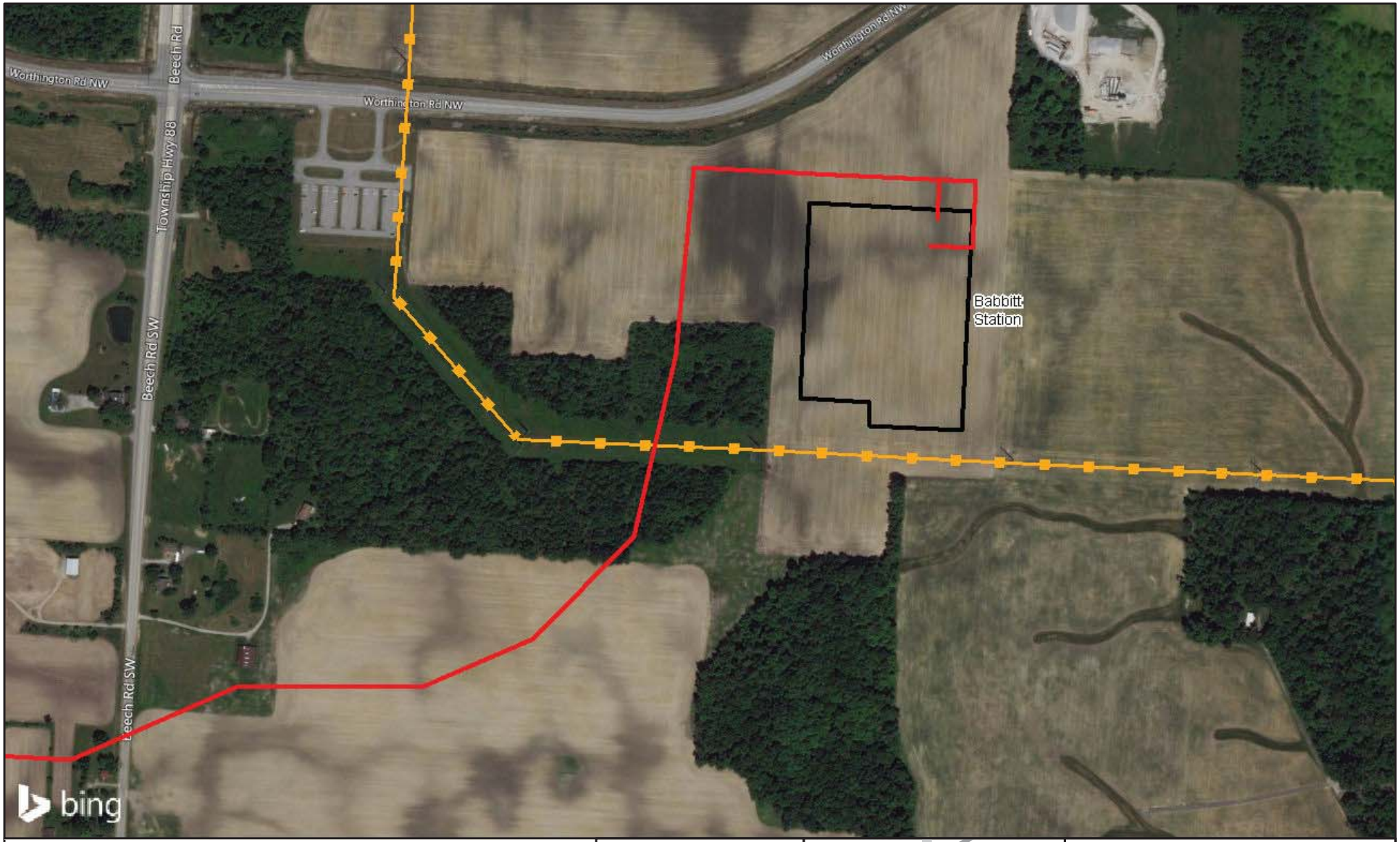
February 28, 2019

Map 1
Project Overview

AEP AMERICAN ELECTRIC POWER

Anguin-Babbitt
138 kV Transmission Line Project

0 0.25 0.5 0.75 1
Miles



Proposed Anguin-Babbitt 138 kV Transmission Line
Existing Transmission Line (345 kV+)
Station

Data Sources: AEP (2019), Bing (2018)

Coordinate System: State Plane Ohio South NAD 83

February 28, 2019

Map 2A
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Anguin-Babbitt
138 kV Transmission Line Project

0 250 500 750 1,000
Feet

Proposed Anguin-Babbitt 138 kV Transmission Line
Proposed Anguin 138 kV Extension
Station

Data Sources: AEP (2019), Bing (2018)

Coordinate System: State Plane Ohio South NAD 83

February 28, 2019

Map 2B
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Anguin-Babbitt
138 kV Transmission Line Project

0 250 500 750 1,000
Feet

Proposed Anguin 138 kV Extension

Data Sources: AEP (2019), Bing (2018)

Coordinate System: State Plane Ohio South NAD 83

February 28, 2019

Map 2C
Aerial Imagery of Project Area

AEP AMERICAN ELECTRIC POWER

Anguin-Babbitt
138 kV Transmission Line Project

0 250 500 750 1,000
Feet

Appendix B Wetland Delineation and Stream Assessment Report

ANGUIN-BABBITT 138 KV TRANSMISSION LINE PROJECT, LICKING COUNTY, OHIO

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230

Prepared by:
AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60597361

February 2019

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TABLES

FIGURES

APPENDICES

LIST OF ACRONYMS and ABBREVIATIONS

AEP Ohio Transco	American Electric Power Ohio Transmission Company
EMH&T	Evans, Mechwart, Hambleton, & Titon, Inc.
DBH	Diameter at Breast Height
DOW	Division of Wildlife
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
GIS	Geographic Information System
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
IBI	Index of Biotic Integrity
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate wetland
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary high water mark
ONHD	Ohio Natural Heritage Database
ORAM	Ohio Rapid Assessment Method
PHWH	Primary Headwater Habitat
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
UPL	Upland
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to construct a new Anguin-Babbitt 138 kV transmission line and 138 kV transmission line extensions to the customer facilities in Licking County, Ohio. The proposed Anguin-Babbitt 138 kV transmission line Project will include the new transmission line between the Babbitt and Anguin substations (approximately 1.7 miles long) and the transmission line extension from Anguin Station to the customer facilities (approximately 0.4 mile long). AEP requested that AECOM survey a minimum 200-foot corridor of the Babbitt-Anguin centerline and the transmission line extensions from Anguin Station (Project survey corridor). The proposed Project is illustrated on Figure 1.

Project Background: The Project survey corridor is separated into 2 sections; the section located west of Beech Road, which was delineated by Evans, Mechwart, Hambleton, & Titon, Inc. (EMH&T) in 2017, and the section located east of Beech Road, which was delineated by AECOM in July 2017 and February 2019. Figure 1 shows the two sections of the Project survey corridor. AECOM relied on data provided by AEP and EMH&T for the portion of the Project survey corridor that was delineated by EMH&T. AECOM understands that a jurisdictional determination and a nationwide permit application have been submitted to the U.S. Army Corps of Engineers (USACE) for waters delineated by EMH&T within the Project survey corridor. Data sheets, photographs and metrics of the EMH&T delineated features were not provided to AECOM and are not included in this report.

The purpose of the field survey was to assess whether wetlands and other "waters of the United States (U.S.)" exist in the survey area. Secondarily, land uses were recorded in an effort to classify and characterize potential habitat for rare, threatened, and endangered species. This report will be used to assist AEP Ohio Transco's efforts to identify potential waters of the U.S and to avoid or minimize impacts to rare, threatened, and endangered species potentially present during construction activities.

2.0 METHODOLOGY

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential wetland areas.

In July 2017 and February 2019, AECOM ecologists visited the Project survey corridor to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy. Land uses observed within the Project survey corridor were assigned a general

classification based upon the principal land characteristics of the location as observed through aerial photography review and observations during the field surveys. General land use types in the vicinity of the proposed survey corridors include: agricultural land, landscaped areas, old field areas, successional woodland, stream/wetland, and urban areas. Old field areas and agricultural land are the dominant land use in the vicinity of the Project.

2.1 WETLAND DELINEATION

The Project survey corridor was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (1987 Manual) (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (Regional Supplement) (USACE, 2010). The Midwest Regional Supplement was released by the USACE in August 2010 to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The 1987 Manual and Regional Supplement define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are located where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the identified wetlands, AECOM utilized the routine delineation method described in the 1987 Manual and Regional Supplement that consisted of a pedestrian site reconnaissance, including identifying the soils identification, a geomorphologic assessment of hydrology, vegetation communities, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.1.1 SOILS

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A Munsell Soil Color Chart (Kollmorgen Corporation, 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.1.2 HYDROLOGY

The 1987 Manual requires that an area be inundated or saturated to the surface for a minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The Regional Supplement states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a

given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-in. depth) is 41 degree Fahrenheit (^{o}F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The Regional Supplement also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of 10, or 50% probability) date of the last and first 28^{o}F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center reveals for Licking County, Ohio that in an average year, this period lasts from April 14 to October 25, or 194 days (USDA, NRCS, 2018). In the Project area, five percent of the growing season equates to approximately 10 days.

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the 1987 Manual and the Regional Supplement. Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2010).

2.1.3 VEGETATION

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the U.S. Army Corps of Engineers 2016 National Wetland Plant List (Lichvar et al., 2016), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE, 2010).

At the time of the February 2019 field survey, the Project survey corridor was observed with near freezing temperatures. Vegetation sampling for wetland delineation can be challenging when some plants are covered by snow or die back due to freezing temperatures or other factors (USACE, 2010). The end of the growing season is indicated when woody deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever occurs latest. The February

2019 wetland delineation field work within the Project corridor was conducted after the occurrence of these events and therefore, outside the normal growing season. Conducting a wetland delineation with freezing temperatures and outside the normal growing season can make identifying the wetland/upland boundary more challenging and may require further assessment during the next growing season.

2.1.4 WETLAND CLASSIFICATIONS

Wetlands were classified based on the naming convention found in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979). The identified wetlands within the survey area were classified as a freshwater, Palustrine system, which includes non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. The common palustrine wetland classification types are as follows:

- ***PEM*** – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
- ***PSS –*** Palustrine scrub/shrub wetlands are characterized by woody vegetation that is less than three inches diameter at breast height (DBH), and greater than 3.28 feet tall. The woody angiosperms (i.e., small trees or shrubs) in this broad leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.
- ***PFO –*** Palustrine forested wetlands are characterized by woody vegetation that is three inches or more DBH, regardless of total height. These wetlands generally include an overstory of broad-leaved and needle-leaved trees, an understory or young saplings and shrubs, and an herbaceous layer.
- ***PUB –*** Palustrine unconsolidated bottom wetlands includes all open water wetlands and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Palustrine open water wetlands are characterized by the lack of large stable surfaces for plant and animal attachment.

2.1.5 OHIO RAPID ASSESSMENT METHOD v. 5.0

The Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation

communities. Each of these subject areas is further divided into subcategories under ORAM v. 5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between “Categories 1 and 2” from 30 to 34.9 and between “Categories 2 and 3” from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat for wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration, or is of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past, but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have “...superior habitat, or superior hydrological or recreational functions.” They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit “superior” hydrologic functions (e.g., flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.2 STREAM ASSESSMENT

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE, 2005).

Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index (Rankin, 2006) and in the OEPA's Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (OEPA, 2012).

2.2.1 OEPA QUALITATIVE HABITAT EVALUATION INDEX

The Qualitative Habitat Evaluation Index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 15.75 in, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater (H) streams (H are those with a watershed area less than or equal to 20 square miles) versus larger (L) streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

2.2.2 OEPA PRIMARY HEADWATER HABITAT EVALUATION INDEX

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries,

respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangle maps and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The Headwater Habitat Evaluation Index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi^2, and a maximum depth of water pools equal to or less than 15.75 inches" (OEPA, 2012).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the OEPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PHWH stream class using the HHEI protocol (OEPA, 2012). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

Class 1 PHWH Streams: Class 1 PHWH Streams are those that have "normally dry channels with little or no aquatic life present" (OEPA, 2012). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PHWH Streams: Class 2 PHWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm-water adapted native fauna either present seasonally or on an annual basis" (OEPA, 2012). These species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PHWH Streams: Class 3 PHWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PHWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval

stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a rare, threatened, and endangered species review and general field habitat surveys within the Project survey corridor. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to threatened and endangered species potentially present in the survey area during construction activities. The first phase of the survey involved a review of online lists of federal and state listed species. In addition to the review of available literature, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section soliciting comments on the Project. AECOM also submitted a coordination letter to the USFWS soliciting comments on the Project. Response letters have not been received by AECOM from the USFWS or ODNR at the date of this report. Correspondence between EMH&T and USFWS summarizing the areas of approved, year-round tree clearing is provided in Appendix E. AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field survey in July 2017 and February 2019.

2.4 NATIONAL WETLAND INVENTORY MAP REVIEW

NWI wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

3.0 RESULTS

Seven wetlands, five streams and two ponds were delineated within the Project survey corridor. These features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils in the delineated wetlands were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Survey of Licking County, Ohio and the NRCS Hydric Soils Lists of Ohio, four soil series are mapped within the Project survey corridor (NRCS 2017). Within these four soil

series, two soil map units are listed as hydric, while the other three map units have hydric components that comprise 3-6% of the area mapped within the unit (NRCS 2015). Table 1 provides a detailed overview of the soil series and soil map units within the Project survey corridor. Soil map units located within the Project survey corridor are shown on Figure 2.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE ANGUIN-BABBITT 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Bennington	BeB	Bennington silt loam, 2 to 6 percent slopes	Ground moraines, end moraines	Not Hydric	Pewamo (3%), Condit (3%)
Centerburg	Cen1B1	Centerburg silt loam, 2 to 6 percent slopes	Ground moraines, end moraines	Not Hydric	Condit (3%), Marengo (3%)
	Cen1C2	Centerburg silt loam, 6 to 12 percent slopes	End moraines, ground moraines	Not Hydric	Condit (3%)
Pewamo	Pe	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	Depressions, drainageways	Hydric	Pewamo (85%), Condit (9%)
Sloan	So	Sloan silt loam, Columbus lowland, 0 to 2 percent slopes, frequently flooded	Floodplain	Hydric	Sloan (85%)

USDA, NRCS. 2017 Soil Survey Geographic (SSURGO) Database. Available online at: http://soildatamart.nrcs.usda.gov/
USDA, NRCS. December 2015. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

3.1.2 National Wetland Inventory Map Review

According to the NWI maps of the New Albany and Jersey, Ohio quadrangles, the Project survey corridor contains four mapped NWI wetlands. The four mapped wetlands include: two palustrine, emergent, persistent, seasonally flooded (PEM1C), one palustrine, unconsolidated bottom, excavated (PUBGx), and one intermittent streambed, seasonally flooded (R4SBC). The locations of the NWI mapped wetlands are shown on Figure 2.

3.1.3 Delineated Wetlands

Seven wetlands, ranging from <0.01 to 0.18 acre, were delineated within the Project survey corridor.

The seven wetlands within the Project survey corridor are of two different habitat types: three PEM wetlands and four PFO wetlands. See Table 2 for a summary of the delineated wetlands within the Project survey corridor.

The location and approximate extent of the wetlands identified within the Project survey corridor are shown on Figure 3. Completed USACE and ORAM wetland delineation forms for the two AECOM delineated wetlands are provided in Appendix A and Appendix B, respectively. Representative color

photographs taken of the AECOM delineated wetlands are provided in Appendix D. Data forms, photographs and the ORAM scores of the five EMHT delineated wetlands were not available.

TABLE 2
DELINEATED WETLANDS WITHIN THE ANGUIN-BABBITT 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Wetland Name	Latitude	Longitude	Cowardin Wetland Type[a]	ORAM Score[b]	ORAM Category	Acreage within Project Survey Corridor
AECOM Wetland 01	40.0723	-82.7482	PFO	34.5	Category 2	0.18
AECOM Wetland 02	40.073078	-82.747402	PEM	40.5	Category 2	0.09
EMHT Wetland 26	40.068816	-82.763312	PFO	U/A	Category 2	0.03
EMHT Wetland 28	40.070215	-82.761675	PFO	U/A	Category 2	0.18
EMHT Wetland 70	40.060214	-82.766752	PEM	U/A	Category 1	<0.01
EMHT Wetland 71	40.060607	-82.765184	PEM	U/A	Category 1	0.15
EMHT Wetland 76	40.067051	-82.76489	PFO	U/A	Category 2	0.03
Total: 7 Wetlands						**0.66**

Cowardin Wetland Type[a] : PEM = palustrine emergent, PFO = palustrine forested
ORAM score[b] : U/A = Unavailable.

3.1.4 AECOM Delineated Wetlands ORAM V5.0 Results

Category 1 Wetlands

AECOM did not delineate any Category 1 wetlands within the Project survey corridor. EMH&T delineated two Category 1 wetlands (EMHT Wetlands 70 and 71) within the Project survey corridor. Both of these wetlands were PEM wetlands.

Category 2 Wetlands

AECOM delineated two Category 2 wetlands (AECOM Wetlands 01 and 02) within the Project survey corridor. AECOM Wetland 02 is a PEM wetland and received an ORAM score of 40.5. AECOM Wetland 01 is a PFO wetland and received an ORAM score of 34.5. These wetlands exhibited medium to narrow upland buffers, and high to low intensity surrounding land use. These wetlands exhibited very low percentage of invasive species, and had habitat and hydrology generally recovering or recovered from previous manipulation due to clearcutting, shrub/sapling removal, and other disturbances.

EMH&T delineated three Category 2 wetlands (EMHT wetlands 26, 28 and 76) within the Project survey corridor. All three of these Category 2 wetlands were PFO wetlands.

Category 3 Wetlands

No Category 3 wetlands were delineated within the Project survey corridor.

3.2 STREAM CROSSINGS

Five streams, totaling 1,349 linear feet, were identified within the Project survey corridor (see Table 3). The streams identified by AECOM consist of two, intermittent streams. The locations of the streams identified within the survey corridor are shown on Figure 3.

HHEI evaluations were conducted on the two streams identified by AECOM within the survey corridor. The evaluations were conducted at or near the proposed transmission line crossing or access road crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

Three streams were identified and evaluated by EMH&T within the Project survey corridor. Data from the evaluation of these three streams was not available.

AECOM has preliminarily determined that all assessed streams within the Project survey corridor appear to be jurisdictional (i.e., waters of the U.S.), as they all appear to be tributaries that flow into or combine with other streams (waters of the U.S).

TABLE 3

STREAMS IDENTIFIED WITHIN THE ANGUIN-BABBITT 138 KV TRANSMISSION LINE PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form[a]	Score	Class/ Narrative Rating	Length (feet) within Project Survey Corridor
AECOM Stream 01	40.072882	-82.747586	Intermittent	3.5	8	HHEI	48	Modified Class 2	235
AECOM Stream 02	40.072983	-82.747862	Intermittent	1	2	HHEI	18	Modified Class 1	111
EMHT Stream 7	40.065602	-82.765149	U/A	U/A	U/A	U/A	U/A	U/A	631
EMHT Stream 14	40.065754	-82.764206	U/A	U/A	U/A	U/A	U/A	U/A	102
EMHT Stream 16	40.067496	-82.764879	U/A	U/A	U/A	U/A	U/A	U/A	270
Totals: 5 Streams									**1,349**

Form Used[a] : HHEI = Headwater Habitat Evaluation Index
*U/A : Unavailable. Data from EMH&T stream evaluations was unavailable

3.2.1 Qualitative Habitat Evaluation Index

No streams within the Project survey corridor were assessed by AECOM using the QHEI methodology.

3.2.2 Primary Headwater Habitat Evaluation Index

Two headwater streams, totaling 346 linear feet, were identified by AECOM within the Project survey corridor. These streams included one Modified Class 1 stream and one Modified Class 2 stream. Completed HHEI forms for each stream are provided in Appendix C. Color photographs were taken of each stream during the field survey and are provided in Appendix D.

Modified Class 1 Headwater Streams – AECOM Stream 02 was classified as an intermittent, Modified Class 1 headwater stream during the field investigation. AECOM Stream 02 had a total length of 111 linear feet within the survey corridor and received an HHEI score of 18. The substrate primarily consisted of silt and sand with lesser amounts of leaf pack/woody debris. The stream showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the stream receiving a Modified Class 1 designation. The pool depths did not exceed 2 inches and the average bankfull width was 1.0 foot.

Modified Class 2 Headwater Streams – AECOM Stream 01 was classified as an intermittent, Modified Class 2 headwater stream during the field investigation. Stream 4 had a total length of 235 linear feet within the survey corridor and received an HHEI score of 48. The substrate generally consisted of silt with lesser amounts of leaf pack/woody debris. The stream showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the stream receiving a Modified Class 2 designation. The maximum pool depths did not exceed 8 inches, and an average bankfull width was 3.5 feet.

3.3 PONDS

Two ponds (AECOM Pond 01 and EMHT Pond 13), totaling approximately 0.65 acre, were identified within the Project survey corridor. These ponds appear to be man-made for stormwater retention, recreational, wildlife, or livestock use. The locations of ponds are shown on Figure 3.

3.4 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys during July 2017 and February 2019. Portions of the Project survey corridor were identified as agricultural land, scrub-shrub, old field, wetland, and urban areas. A variety of woody and herbaceous lands, as described below in Table 4, are present within the Project survey corridor. Habitat descriptions applicable to the Project and details on the expected impacts of construction are provided below. Vegetated land cover can be seen visually from aerial photography provided on Figure 4.

TABLE 4
VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Corridor	Approximate Percentage within the Project Survey Corridor
Agricultural Land	Agricultural land consisting of soybean and corn fields was present along the Project survey area. The agricultural land contains row crops and is not used for pasture or hay fields.	45.72	60%
Landscaped Areas	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project survey corridor and adjacent areas are frequently mowed grasses and forbs.	3.44	4%
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey area of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study area and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.	13.25	17%
Streams/Wetlands	Streams and wetlands were observed within the survey area for the Project.	5.7	7%
Successional Woodlands	Successional mixed hardwood woodlands are present along the Project survey corridor. Woody species dominating these areas included American Beech (*Fagus grandfolia),* red oak (*Quercus rubra*), white oak (*Quercus alba*), sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), box elder (*Acer negundo*),, shagbark hickory (*Carya ovata*), and black cherry (*Prunus serotina*). The dominant shrub-layer species included spicebush (Lindera benzoin), poison ivy (Toxicodendron radicans), honeysuckle (Lonicera japonica), and blackberry (Rubus occidentalis).	5.51	7%
Urban	Urban areas are developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	3.07	4%
Totals:		**76.69**	100%

3.5 RARE, THREATENED, AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a rare, threatened, and endangered species review for the Project survey corridor. Agency correspondence letters were sent to the USFWS and ODNR on February 7, 2019; however, response letters have not been received by AECOM from the USFWS or ODNR at the date of this report. AECOM can update this report and provide copies of the agency correspondence letters when received. AECOM's analysis of potential habitat for rare, threatened, or endangered species is based on recent agency comments for Licking County, Ohio from the Babbitt Station project, as well as from AECOM's field evaluation of the Project in February 2019. Mist net surveys were conducted in the western portion of the Project survey corridor (delineated by EMH&T) in order to lift restrictions on seasonal tree clearing. Correspondence between EMH&T and USFWS describing the areas of approved, year-round tree

clearing is provided in Appendix E. Table 5 provides a list of these species identified as possibly occurring near or within the Project survey corridor during the rare, threatened, and endangered species review.

TABLE 5
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Mammals						
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	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.	Yes	Some potentially suitable habitat is present within the Project area (woodlands).	An agency response for this Project has not been received to date. In a prior project in Licking County, Ohio, USFWS and ODNR recommended that suitable Indiana bat habitat should be conserved or cut between October 1 and March 31. Correspondence in Appendix E describes certain areas where USFWS has approved, year-round tree clearing.

TABLE 5
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	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.	Yes	Some potentially suitable habitat is present within the Project area (woodlands).	An agency response for this Project has not been received to date. In a prior project in Licking County, Ohio, USFWS and ODNR recommended that suitable Indiana and northern long-eared bat habitat should be conserved or cut between October 1 and March 31. Correspondence in Appendix E describes certain areas where USFWS has approved, year-round tree clearing.
Black Bear (*Ursus americanus)*	Endangered	N/A	Black bears utilize heavily wooded habitats, ranging from swamps and wetlands to dry upland hardwood and coniferous forests. Although they will utilize open areas, bears prefer wooded cover with a dense understory.	Yes	Some potentially suitable habitat is present within the Project area.	An agency response has not been received to date. In a prior project in Licking County, Ohio, ODNR stated that due to the mobility of this species, the project was not likely to impact this species.
Fish						

TABLE 5
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Lake chubsucker (*Erimyzon succetta)*	Threatened	N/A	This fish is found in natural lakes and sluggish streams or marshes with dense aquatic vegetation and clear waters.	No	No additional in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated.	An agency response has not been received to date. In a prior project in Licking County, Ohio, ODNR stated that due to location and that there was no in-water work proposed in a perennial stream, the project was not likely to impact this species.
Mussels						
Fawnsfoot (*Truncilla donaciformis*)	Threatened	N/A	This species occurs in both large and medium-sized rivers. A substrate of either sand or mud is suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current.	No	No additional in-water work is planned as part of the Project. No impacts to this species and its habitat are anticipated	An agency response has not been received to date. In a prior project in Licking County, Ohio, ODNR stated that due to location and that there was no in-water work proposed in a perennial stream, the project was not likely to impact this species.
Reptiles						
Eastern massasauga (*Sistrurus catenatus*)	Endangered	Threatened	The eastern massasauga uses both upland and wetland habitat depending on the season. This snake hibernates in low wet areas and primarily in crayfish burrows but may use other structures where the water table is near the surface for a hibernaculum. Summer habitat includes drier, open areas that contain a mix of grasses and prairie plants and may be intermixed with trees or shrubs. Adjoining lowland and upland habitat with variable elevations are important for interseasonal movements.	Yes	Potentially suitable habitat is present within the Project area (wetlands). No additional in-water work is planned as part of the Project. Based on comments for the nearby project, the agencies will likely not anticipate any adverse effects to this species.	An agency response has not been received to date. In a similar project in Licking County, Ohio, ODNR stated that due to the project location, the type of work proposed, and the type of habitat along the project route and within the vicinity of the project area, the project was not likely to impact this species

ODNR Coordination –

Coordination with the ODNR was initiated during the planning stages of the Project to obtain Ohio Natural Heritage Database (ONHD) records located in the vicinity of the Project. The ODNR has not yet responded to an e-mailed request for an Environmental Review that includes rare, threatened and endangered species within an extended area around the Project site.

There are likely no ONHD records indicating the presence of state-listed species within the Project vicinity based on a review of information for Licking County, Ohio, accessed on the ODNR website, and a review of agency comments for the nearby Babbitt Station project located in Licking County, Ohio. However, the Project is within the range of the state endangered Indiana bat, and the state threatened northern long-eared bat. In previous correspondence, the ODNR recommended that if suitable habitat occurs within the Project area, trees be conserved or cut between October 1 and March 31. Correspondence between EMH&T and USFWS describing the areas of approved, year-round tree clearing is provided in Appendix E.

Further recommendations may include that the Project must not have impacts on freshwater native mussels. The Project may be within the range of the black bear, eastern massasauga, lake chubsucker, and fawnsfoot. Due to the mobility of the species, the Project is not likely to impact the black bear. Based on comments for the nearby Babbitt Station project, the agencies will likely not anticipate any adverse effects to the eastern massasauga. Due to no additional proposed in-water work, this Project is not likely to impact the lake chubsucker and fawnsfoot.

USFWS Coordination –

Coordination with the USFWS was initiated during the planning stages of the Project to obtain information in regard to federally listed, rare, threatened, and endangered species that may occur within the Project vicinity. The USFWS has not yet responded to an e-mailed request for an Environmental Review that includes rare, threatened and endangered species within an extended area around the Project site.

Based on a review of the aforementioned Babbitt Station project, the Project is within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. USFWS will likely recommend that should the proposed site contain trees ≥3 inches dbh, those trees need to be saved wherever possible. If tree clearing cannot be avoided, USFWS will recommend that tree removal occur between October 1st and March 31st to avoid adverse effects to Indiana bats and northern long-eared bats during the brood-rearing months. USFWS has approved year-round tree clearing for specific sections of the Project (Appendix E).

4.0 SUMMARY

Seven wetlands, five streams and two ponds were identified within the Project survey corridor. The seven wetlands within the Project survey corridor are of two different habitat types: three PEM wetlands and four PFO wetlands. Within the Project survey corridor, two wetlands are Category 1 wetlands and the remaining five wetlands are Category 2 wetlands. No Category 3 wetlands were identified within the Project survey corridor.

Five streams, totaling 1,349 linear feet, were identified within the Project survey corridor. The streams identified by AECOM consist of two intermittent streams, which were evaluated using the HHEI methodology. Three streams were identified and evaluated by EMH&T within the Project survey corridor. Data from the evaluation of these three streams was not available.

Two ponds, totaling approximately 0.65 acre, were identified within the Project survey corridor. These ponds appear to be man-made for stormwater retention, recreational, wildlife, or livestock use.

Response letters have not been received by AECOM from the USFWS or ODNR at the time of this report. AECOM's analysis of potential habitat for rare, threatened, or endangered species is based on recent agency comments for Licking County, Ohio from the Babbitt Station project, as well as from AECOM's field evaluation of the Project in February 2019. In addition, correspondence between EMH&T and USFWS describing the areas of approved, year-round tree clearing is provided in Appendix E. Based on this information, the Project is likely within the range of six state and/or federally listed threatened and endangered species. These species included: Indiana bat, northern long-eared bat, eastern massasauga, black bear, lake chubsucker, and fawnsfoot. Based on agency responses for the nearby Babbitt Station project, and no additional proposed in-water work, the Project is not likely to impact the black bear, eastern massasauga, lake chubsucker and fawnsfoot.

Based on general observations during the ecology survey, the Project survey corridor contained potential summer habitat for the Indiana bat and the northern long-eared bat. USFWS and ODNR have previously recommend that any cutting of trees ≥3 inches dbh occur between October 1 and March 31 to avoid impacts to these bat species. USFWS has approved year-round tree clearing for specific sections of the Project (Appendix E).

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey boundary provided in Figure 3: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Project survey boundary, including any portion of work pads or access roads, were not evaluated in the field and are not included in the reporting of this survey.

The information contained in this wetland delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not

constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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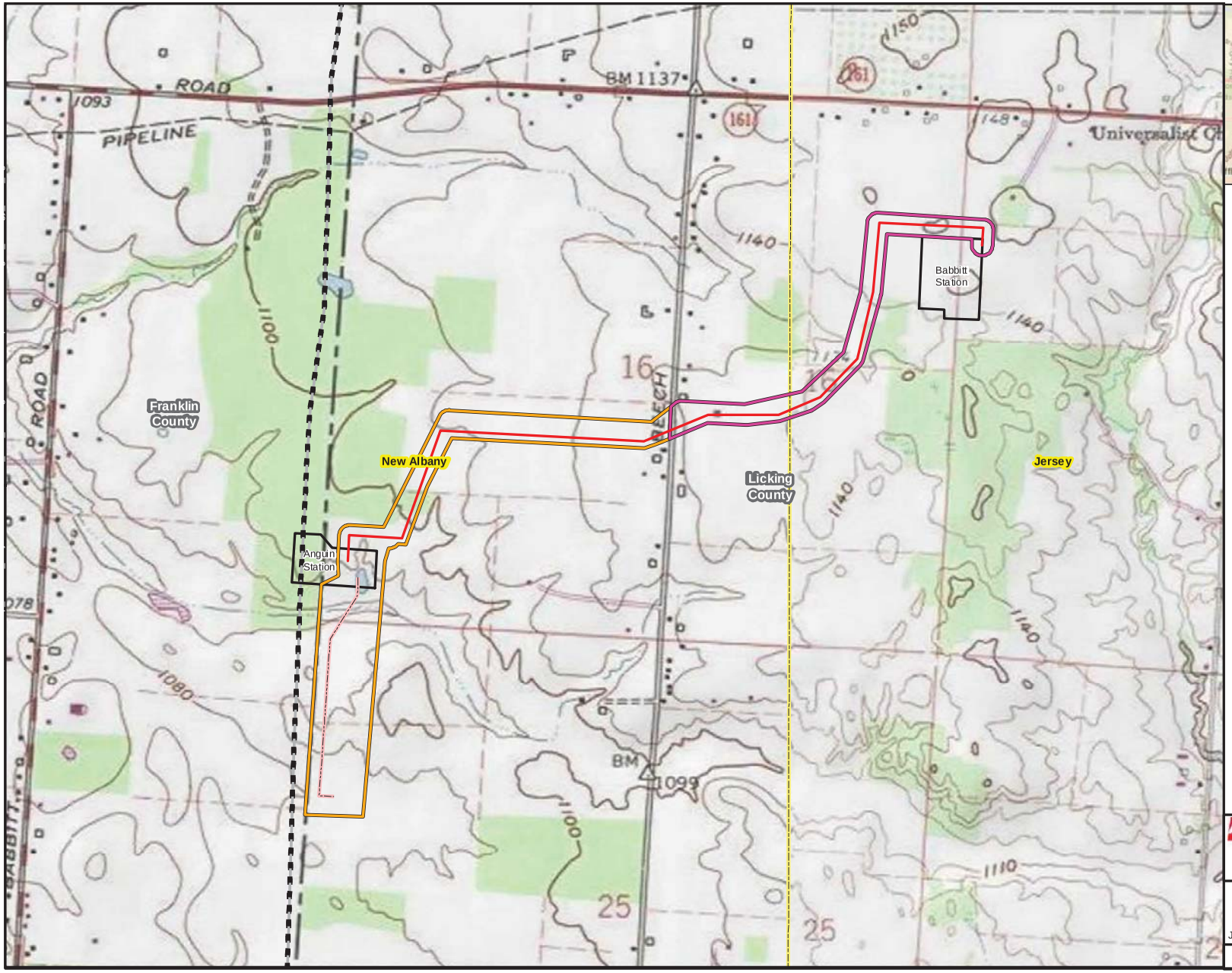

LEGEND:

- Proposed Anguin 138 kV Extension
- Proposed Babbitt-Anguin 138 kV Transmission Line
- USGS 7.5 Minute Topographic Quadrangles
- County Boundary
- AECOM Survey Corridor
- EMH&T Survey Corridor
- Station

N

0 1,000 2,000

Feet

Base Map Source:
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AEP OHIO TRANSMISSION COMPANY

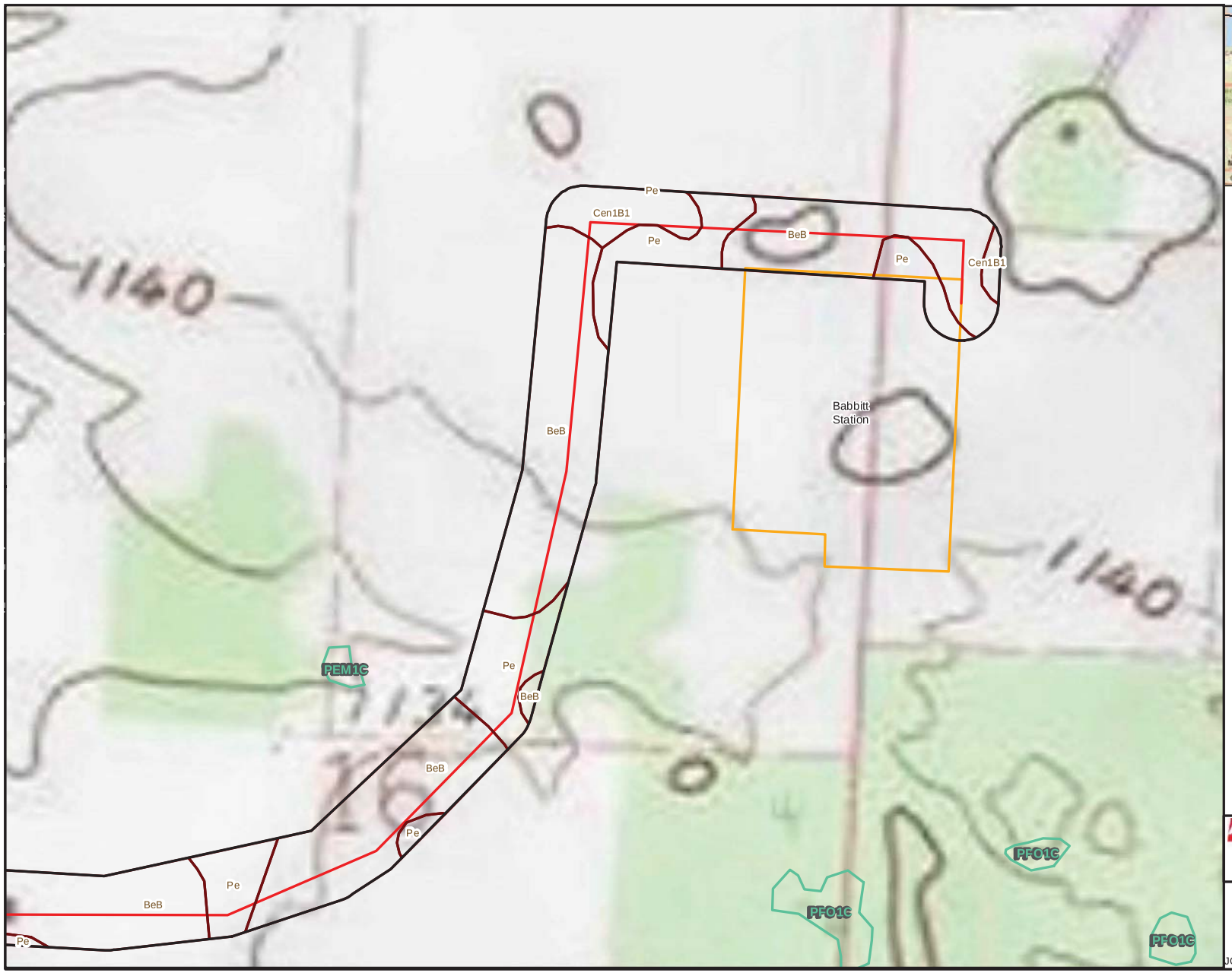
Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 1
OVERVIEW MAP

JOB NO. 60597361

AECOM

November 16, 2018



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Project Survey Corridor
- Mapped NWI Wetlands
- Soil Map Unit

Soil Map Unit Symbol

BeB;Bennington silt loam, 2 to 6 percent slopes

Cen1B1;Centerburg silt loam, 2 to 6 percent slopes

Pe;Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes

N

0 300 600

Feet

Base Map Source:
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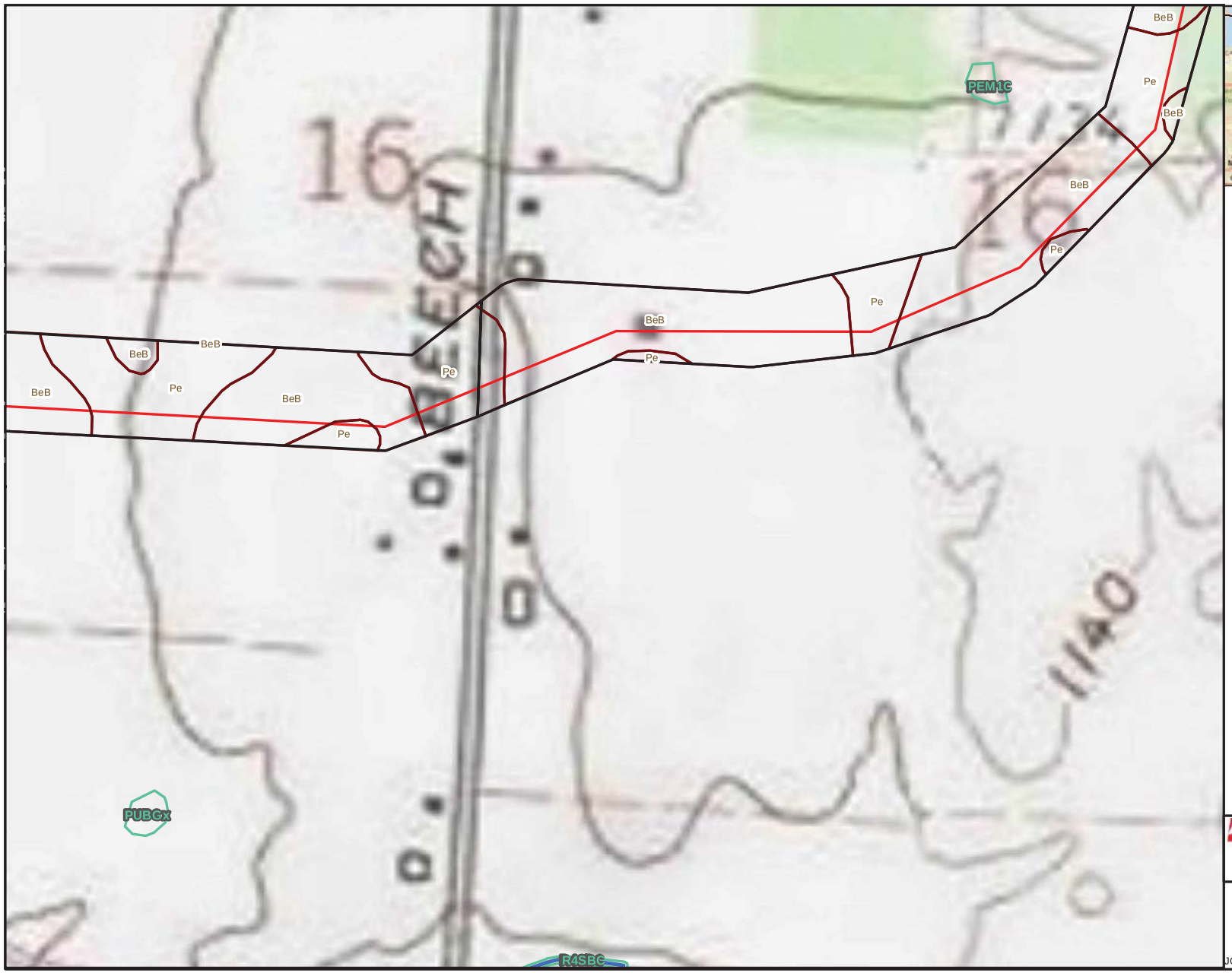
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 2A
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Project Survey Corridor
- NHD Mapped Stream
- Mapped NWI Wetlands
- Soil Map Unit

Soil Map Unit Symbol

BeB;Bennington silt loam, 2 to 6 percent slopes

Pe;Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes

N

0 300 600

Feet

Base Map Source:
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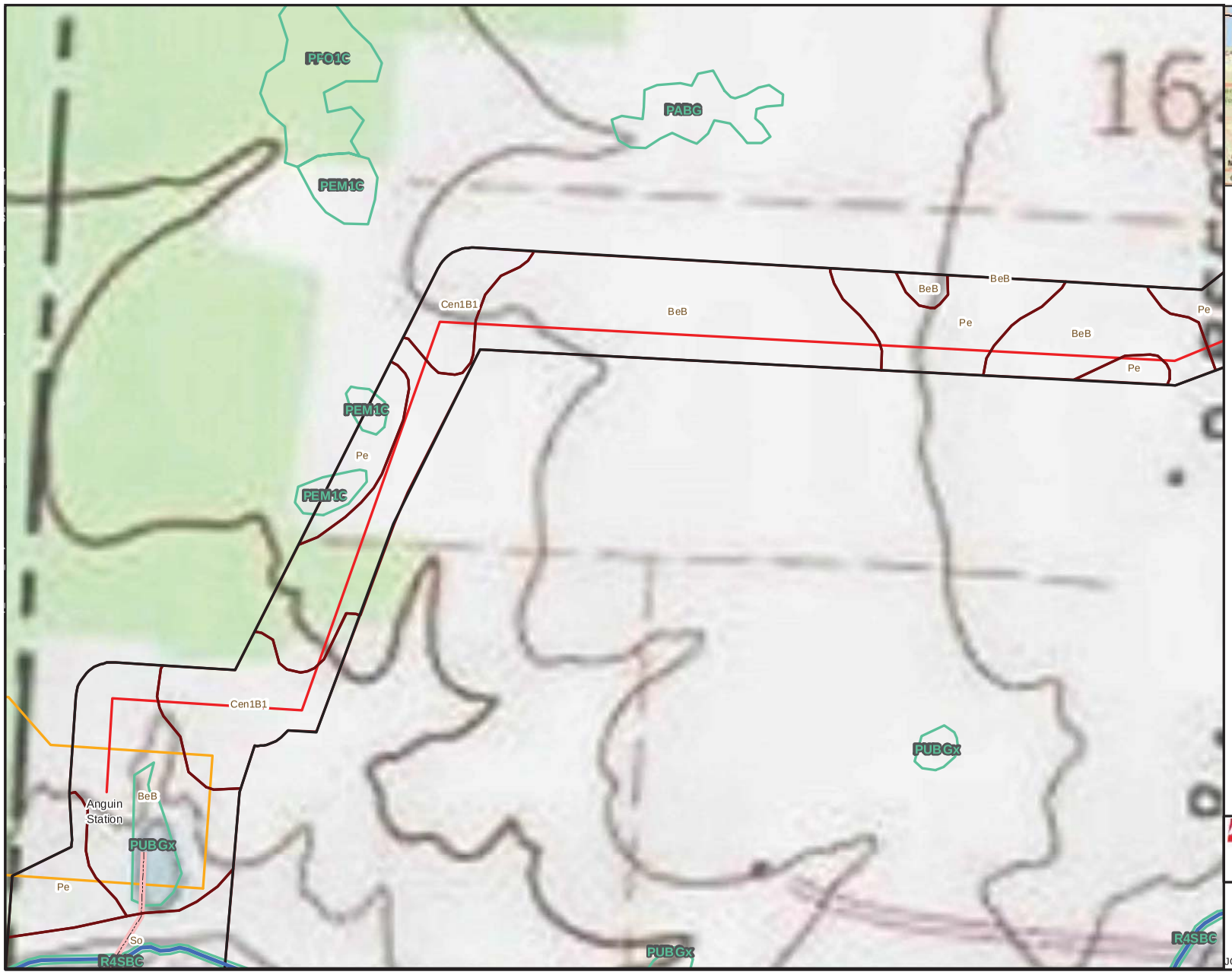
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 2B
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- NHD Mapped Stream
- Mapped NWI Wetlands
- Soil Map Unit

Soil Map Unit Symbol

- BeB;Bennington silt loam, 2 to 6 percent slopes
- Cen1B1;Centerburg silt loam, 2 to 6 percent slopes
- Pe;Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes
- So;Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded

N

0 300 600

Feet

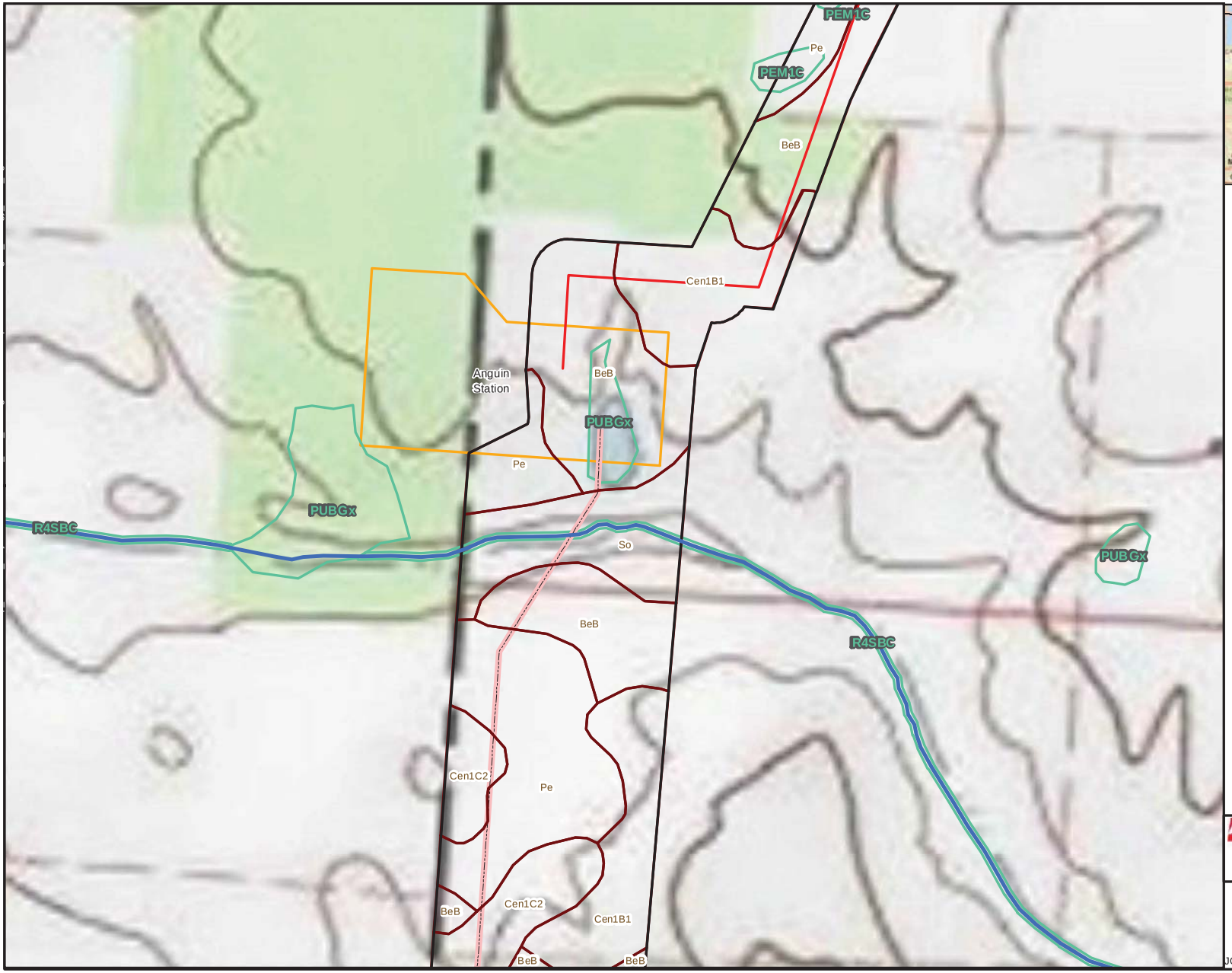
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 2C
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- NHD Mapped Stream
- Mapped NWI Wetlands
- Soil Map Unit

Soil Map Unit Symbol

- BeB;Bennington silt loam, 2 to 6 percent slopes
- Cen1B1;Centerburg silt loam, 2 to 6 percent slopes
- Cen1C2;Centerburg silt loam, 6 to 12 percent slopes, eroded
- Pe;Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes
- So;Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded

N

0 300 600

Feet

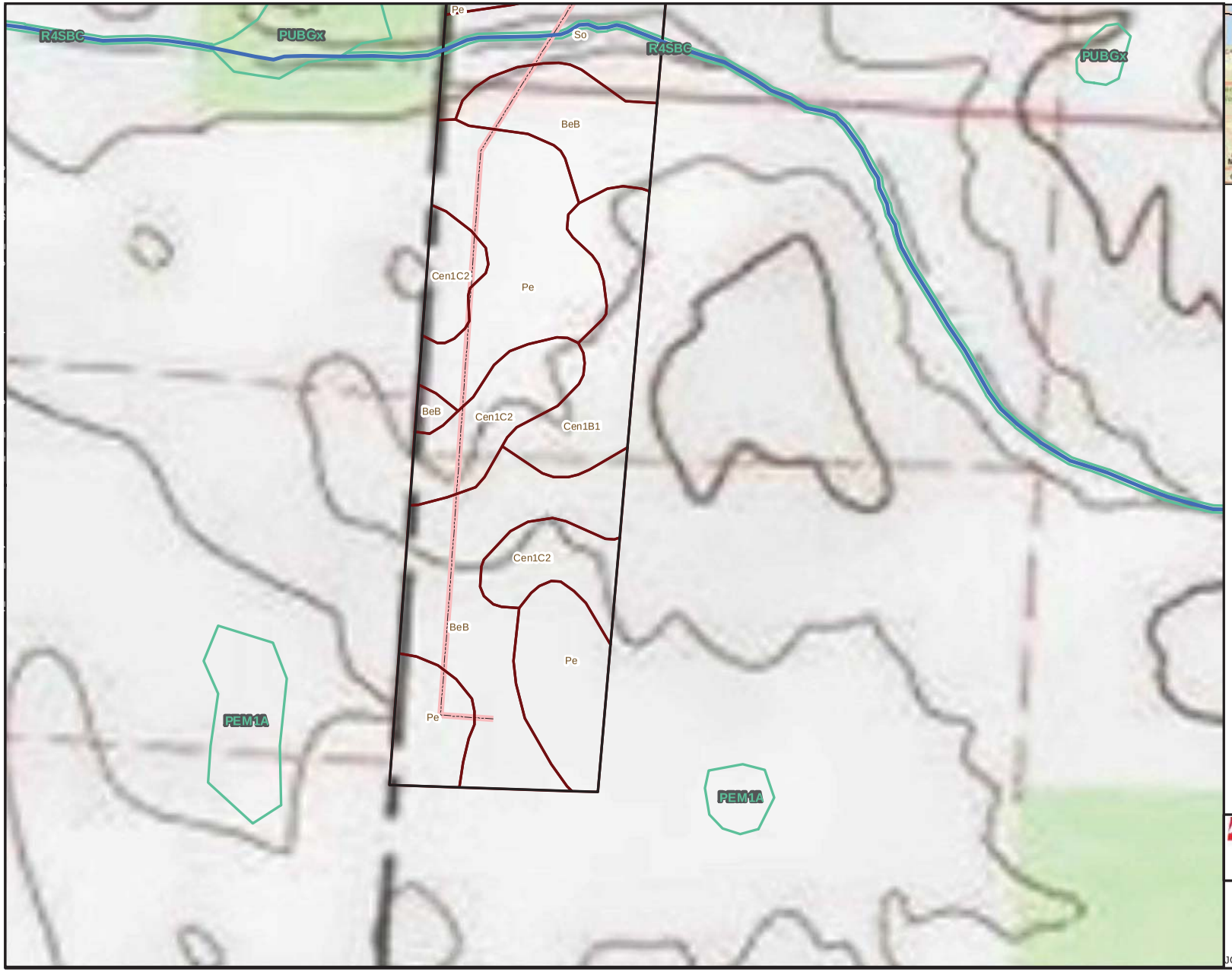
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 2D
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Anguin 138 kV Extension
- Project Survey Corridor
- NHD Mapped Stream
- Mapped NWI Wetlands
- Soil Map Unit

Soil Map Unit Symbol

BeB;Bennington silt loam, 2 to 6 percent slopes

Cen1B1;Centerburg silt loam, 2 to 6 percent slopes

Cen1C2;Centerburg silt loam, 6 to 12 percent slopes, eroded

Pe;Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes

So;Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded

N

0 300 600

Feet

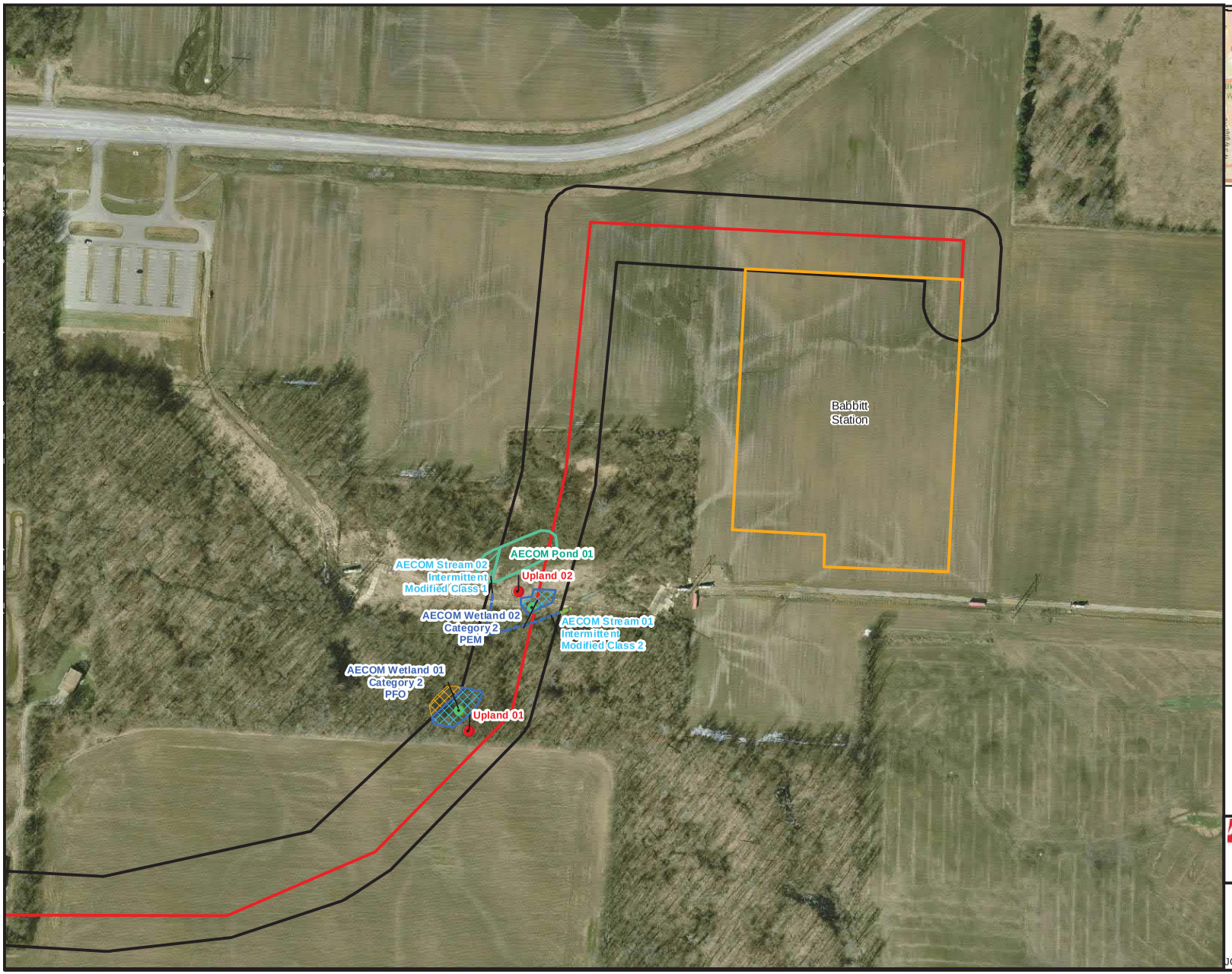
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 2E
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Station
- Project Survey Corridor
- Upland Data Point
- Wetland Data Point
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Approximate Wetland Location
- Approximate Pond Location
- Approximate Stream Location

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

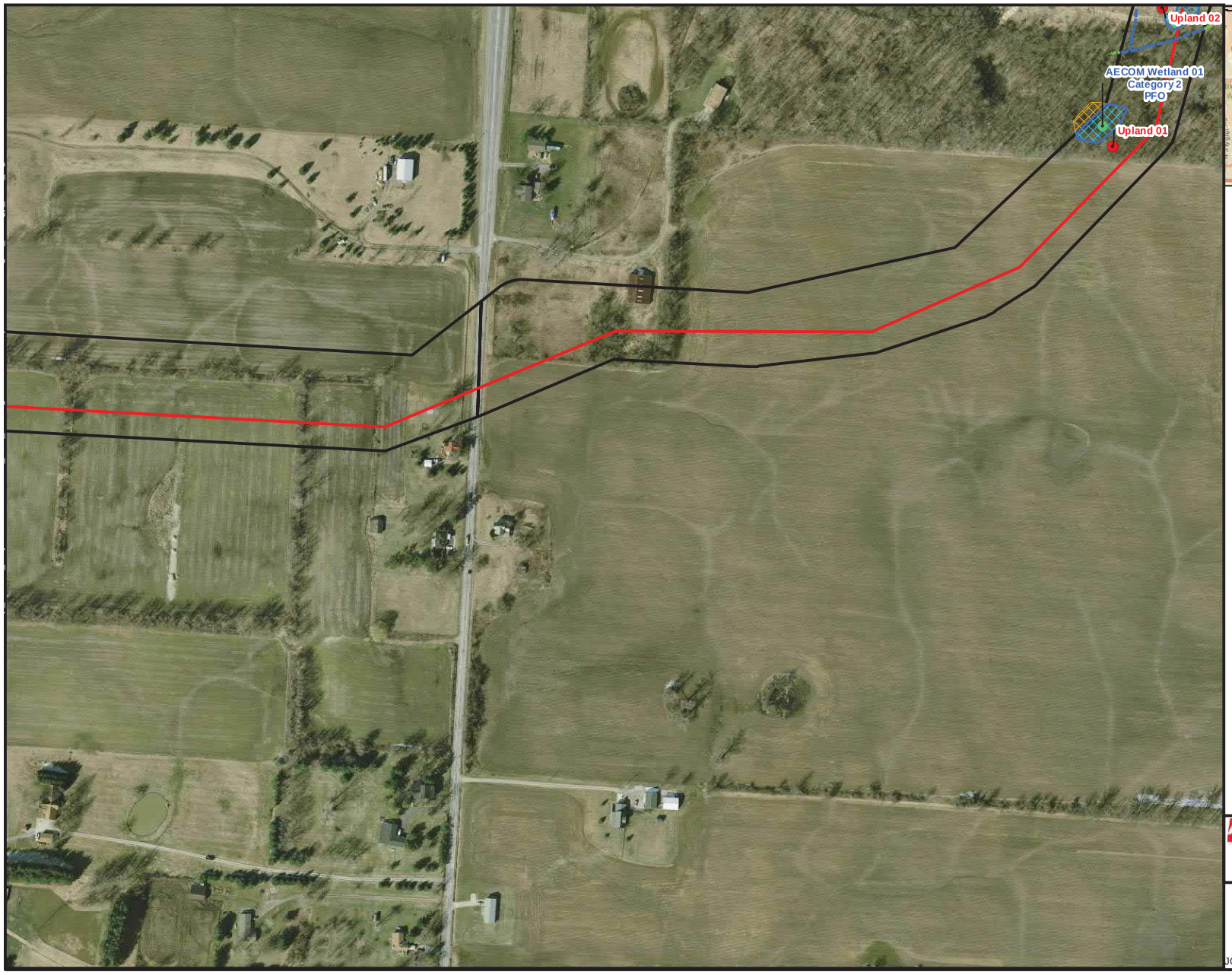
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 3A
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Project Survey Corridor
- Upland Data Point
- Wetland Data Point
- Delineated Stream
- Delineated Wetland
- Approximate Wetland Location
- Approximate Stream Location

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

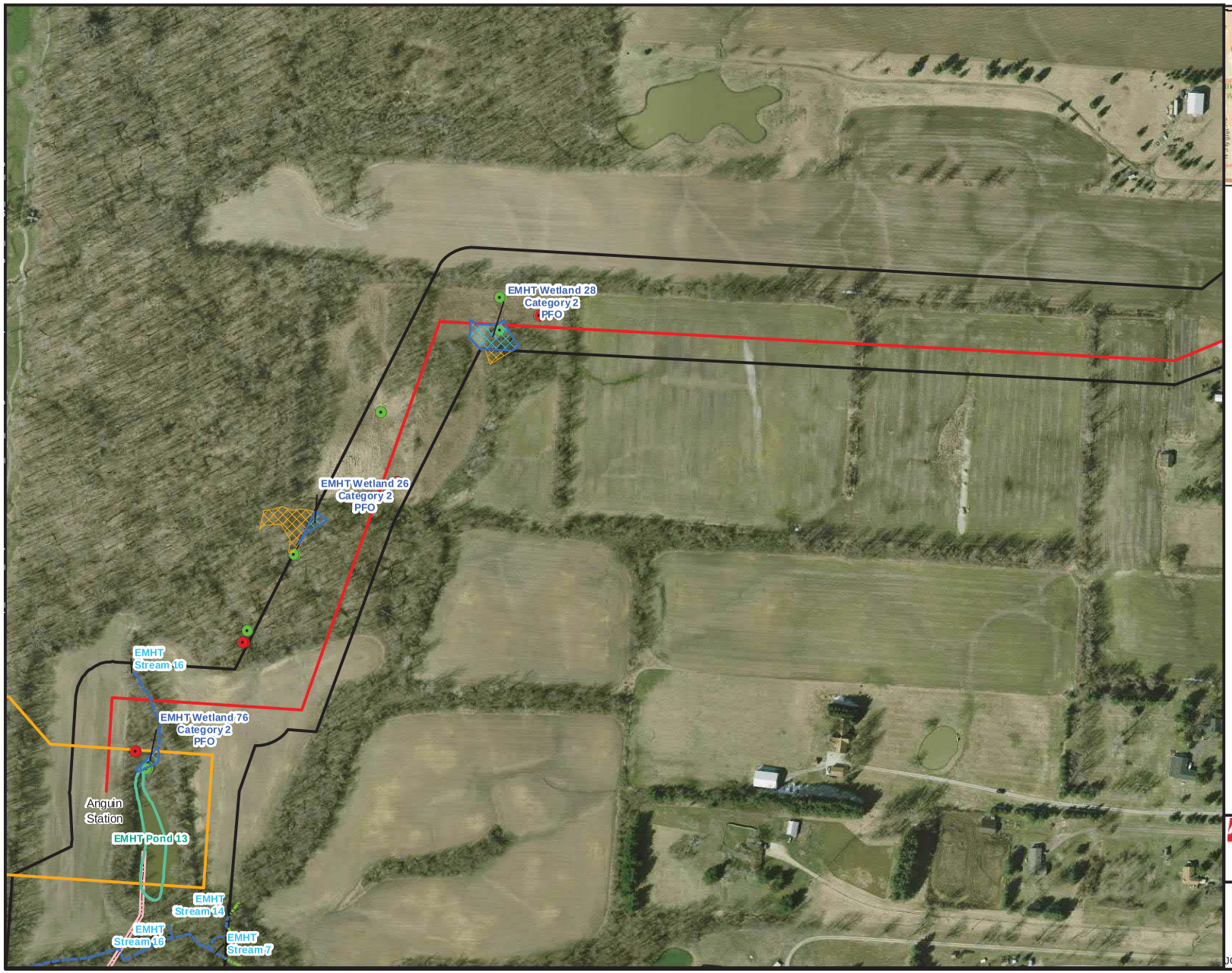
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 3B
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- Upland Data Point
- Wetland Data Point
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Approximate Wetland Location
- Approximate Stream Location

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

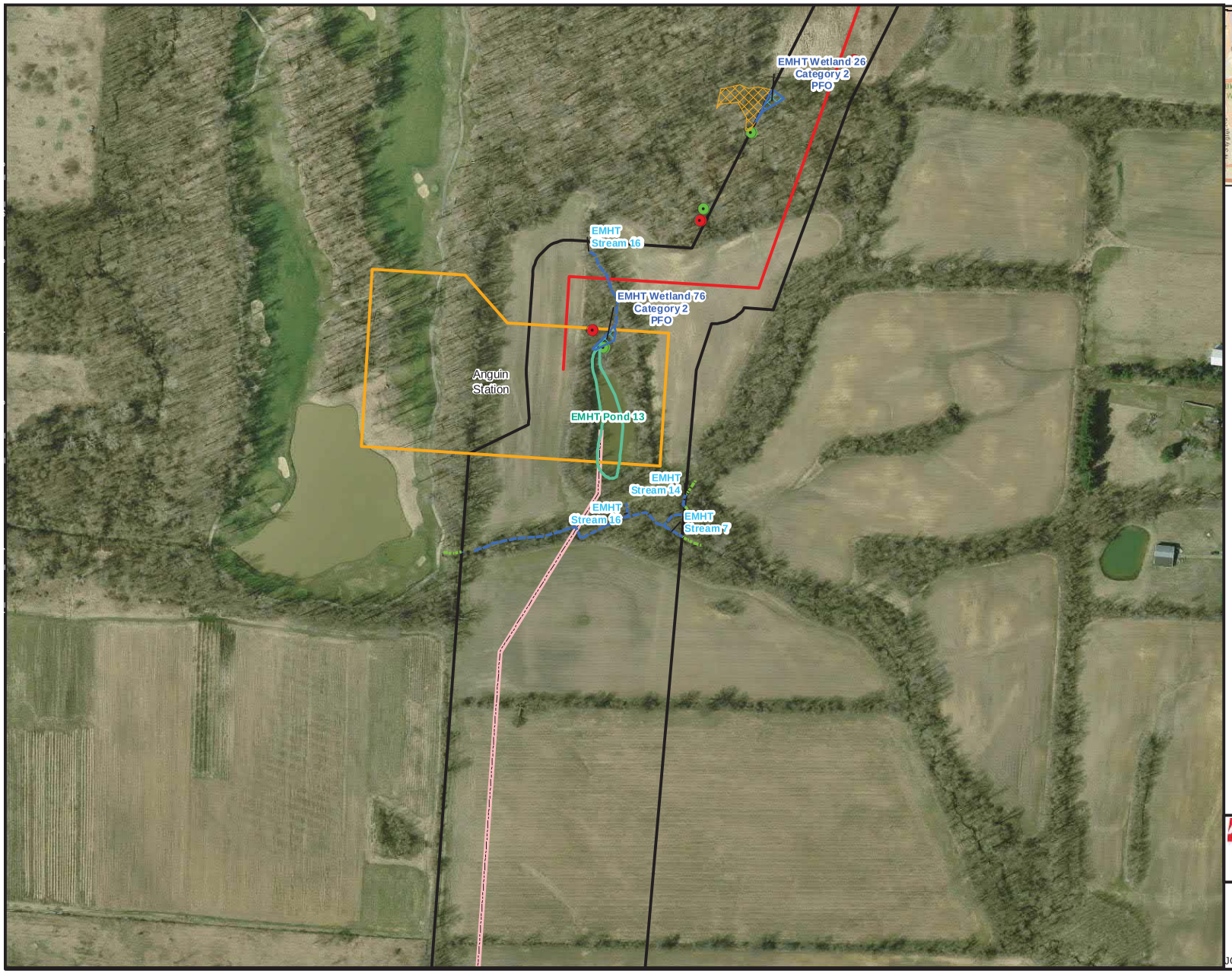
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 3C
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- Upland Data Point
- Wetland Data Point
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Approximate Wetland Location
- Approximate Stream Location

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 3D
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60597361

AECOM

LEGEND:

- Proposed Anguin 138 kV Extension
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Approximate Wetland Location
- Approximate Stream Location

N

0 300 600

Feet

Base Map Source: OSIP Imagery

AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 3E
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60597361

AECOM

LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Station
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Landscaped Area
- Old Field
- Stream/Wetland
- Successional Woodland
- Urban

N

0 300 600

Feet

Base Map Source: OSIP Imagery

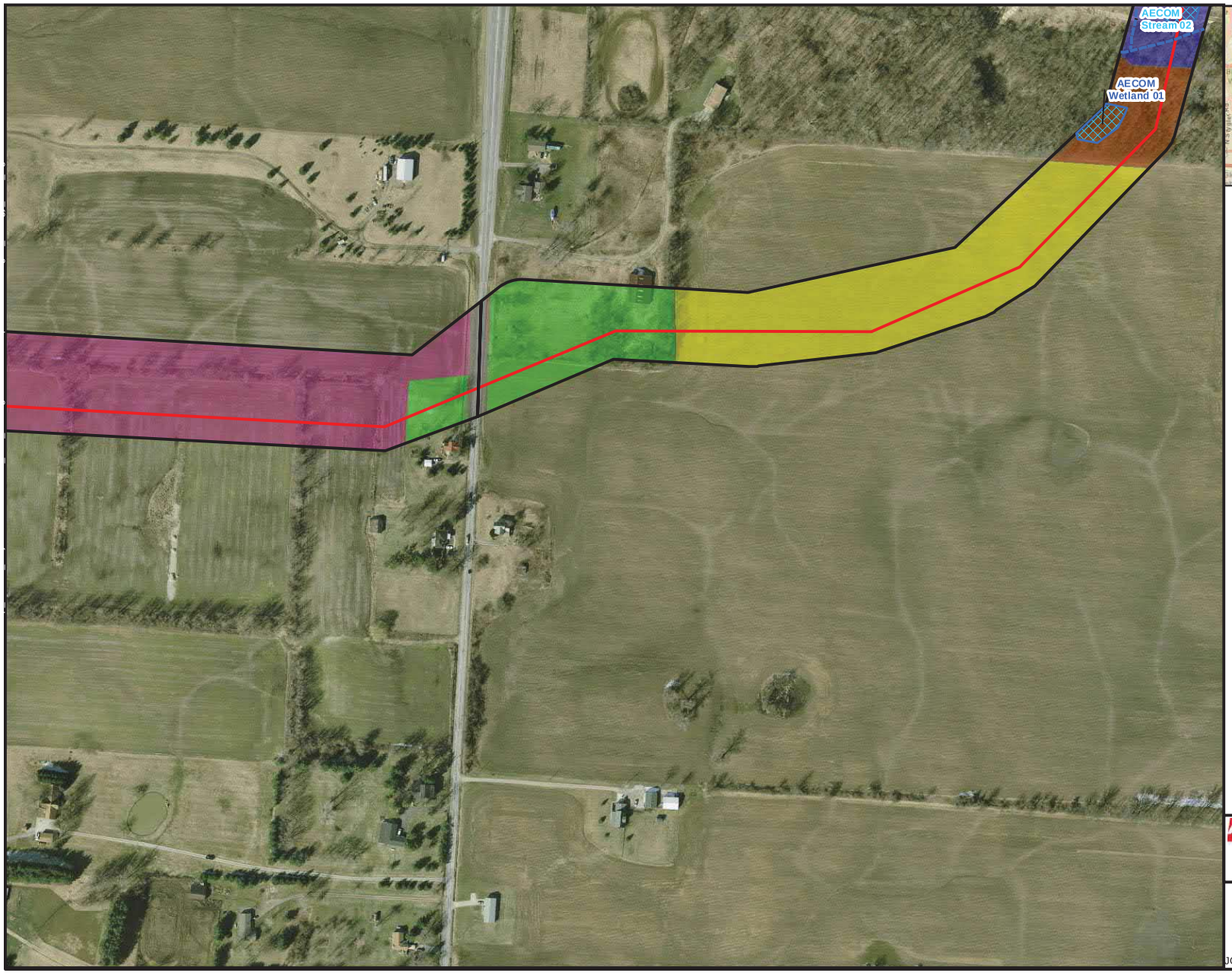
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 4A
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Agricultural Land
- Landscaped Area
- Old Field
- Stream/Wetland
- Successional Woodland
- Urban

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

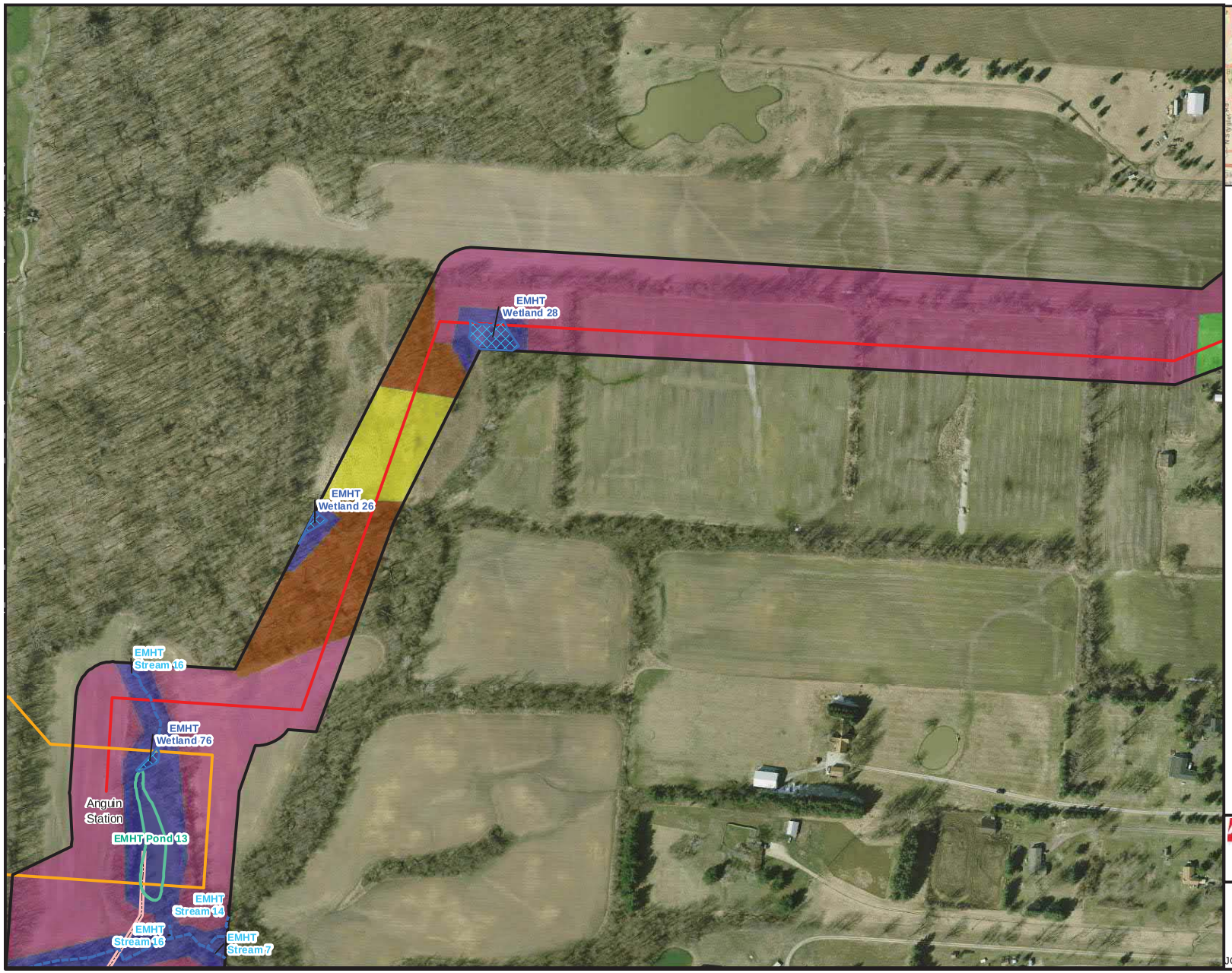
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 4B
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Landscaped Area
- Old Field
- Stream/Wetland
- Successional Woodland

N

0 300 600

Feet

Base Map Source: OSIP Imagery

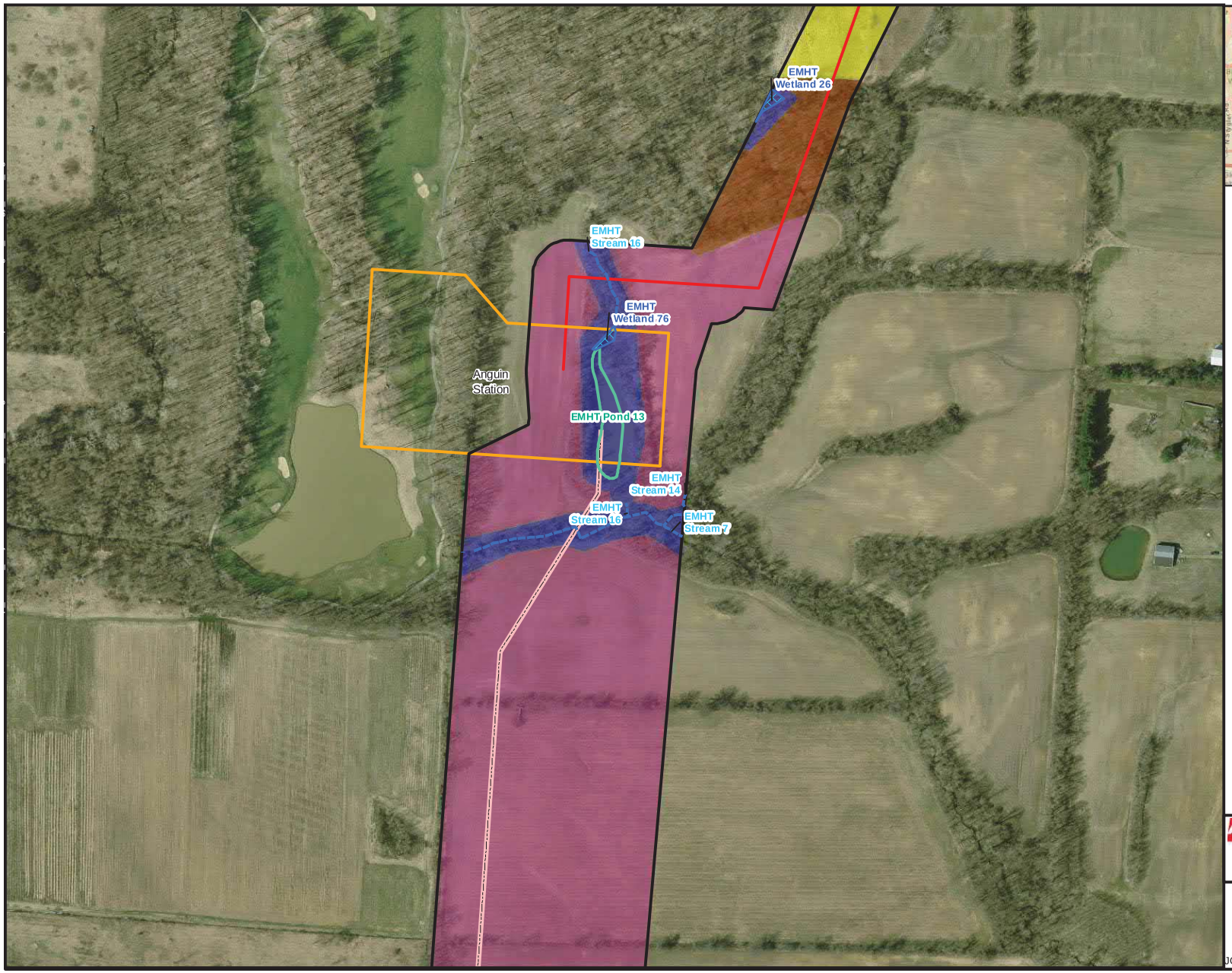
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 4C
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Babbitt-Anguin 138 kV Transmission Line
- Proposed Anguin 138 kV Extension
- Station
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Delineated Pond
- Agricultural Land
- Old Field
- Stream/Wetland
- Successional Woodland

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

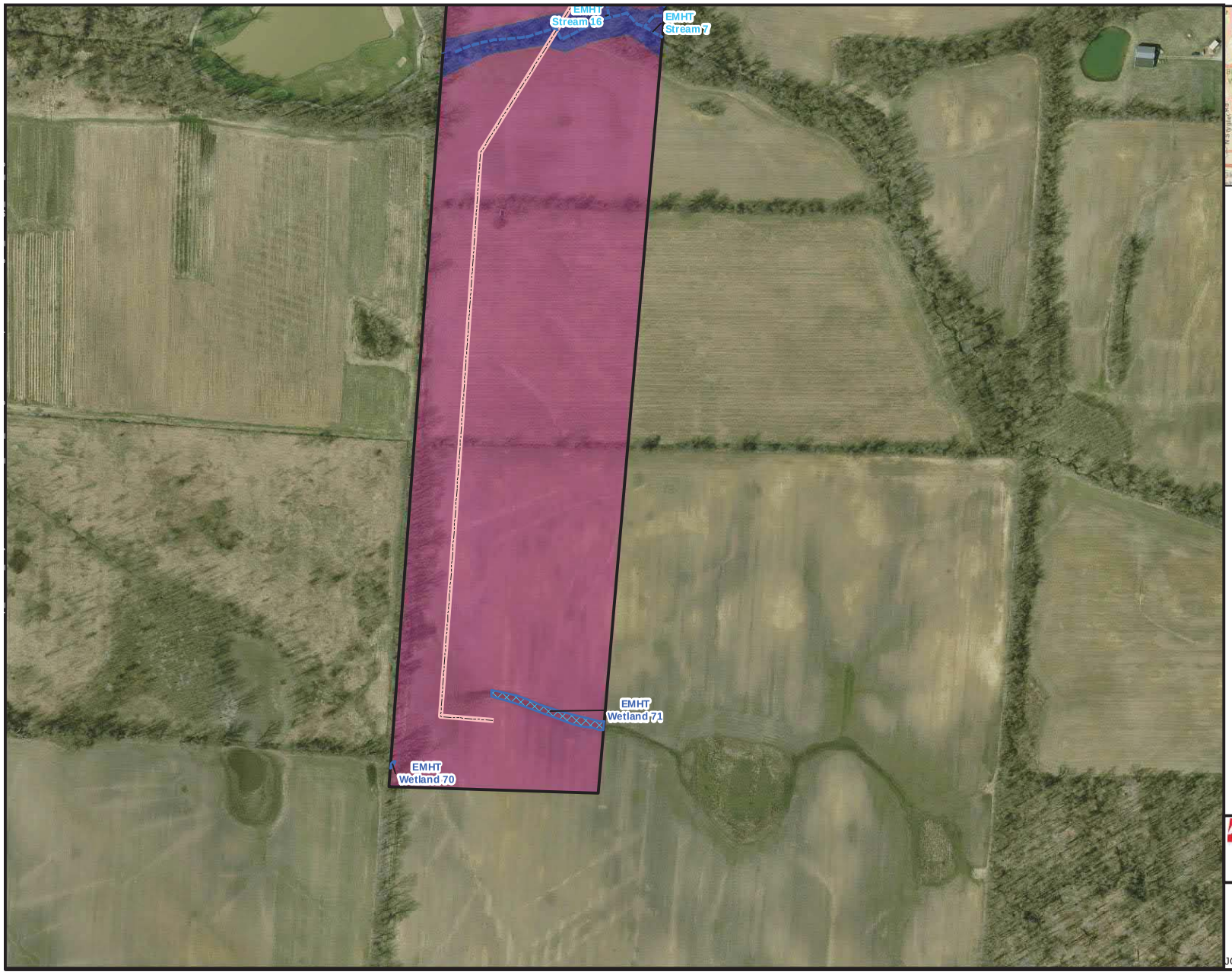
AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 4D
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60597361

AECOM



LEGEND:

- Proposed Anguin 138 kV Extension
- Project Survey Corridor
- Delineated Stream
- Delineated Wetland
- Agricultural Land
- Stream/Wetland

N

0 300 600

Feet

Base Map Source:
OSIP Imagery

AEP OHIO TRANSMISSION COMPANY

Anguin-Babbitt 138 kV Transmission Line Project

FIGURE 4E
VEGETATION COMMUNITIES ASSESSMENT MAP

JOB NO. 60597361

AECOM

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS WETLAND AND UPLAND FORMS

AECOM Wetland 01

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Anguin-Babbitt 138 kV Transmission Line Project | City/County: Licking County | Sampling Date: 05-Feb-19

Applicant/Owner: AEP | State: OH | Sampling Point: **w-aeh-020519-01**

Investigator(s): JTT, AEH | Section, Township, Range: S 16 T 2N R 15W

Landform (hillslope, terrace, etc.): Floodplain | Local relief (concave, convex, none): concave

Slope: 0.0% 0.0 ° | Lat.: 40.0723 | Long.: -82.7482 | Datum: 83 NAD

Soil Map Unit Name: BeB, Pe | NWI classification: NA

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
PFO dominant wetland with mixed PSS and PEM. Wetland is within a conservaton easement and is adjacent to farmland, much of which is being developed upon

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Quercus palustris	20	☑	66.7%	FACW
2. Ulmus americana	10	☑	33.3%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	30		= Total Cover	

Sapling/Shrub Stratum (Plot size:)				
1. Rosa palustris	15	☑	75.0%	OBL
2. Fraxinus pennsylvanica	5	☑	25.0%	FACW
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	20		= Total Cover	

Herb Stratum (Plot size: 30)				
1. Phalaris arundinacea	45	☑	95.7%	FACW
2. Symphyotrichum ericoides	2	☐	4.3%	FACU
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	47		= Total Cover	

Woody Vine Stratum (Plot size:)				
1. Vitis riparia	10	☐	100.0%	FACW
2.	0	☐	0.0%	
	10		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals:	107 (A)		203 (B)

Prevalence Index = B/A = 1.897

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrophytic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: w-aeh-020519-01

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR	3/2	95	10YR	4/6	5	C	M	Silty Clay Loam	frôzen soil

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Muck Mineral (S1)
- [ ] 5 cm Mucky Peat or Peat (S3)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [x] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- [ ] Coast Prairie Redox (A16)
- [ ] Dark Surface (S7)
- [ ] Iron Manganese Masses (F12)
- [ ] Very Shallow Dark Surface (TF12)
- [ ] Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes (●) No ( )

Remarks:

frozen soil at 8 inches, surface difficult to break

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [x] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] True Aquatic Plants (B14)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Gauge or Well Data (D9)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [x] Geomorphic Position (D2)
- [x] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes (●) No ( ) Depth (inches): 4

Water Table Present? Yes (●) No ( ) Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes (●) No ( ) Depth (inches): 8

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

much of the surface water and saturated soils are frozen

AECOM Wetland 02

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Babbitt Substation | City/County: Licking County | Sampling Date: 12-Jul-17

Applicant/Owner: AEP | State: Ohio | Sampling Point: 2

Investigator(s): PJR, LCB | Section, Township, Range: S _____ T 2N R 15W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): concave

Slope: 2.0% 1.1 ° | Lat.: 40.073047 | Long.: -82.746963 | Datum: NAD 83

Soil Map Unit Name: BeB, Pe | NWI classification: PEM

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: Used for 2019 Anguin-Babbitt 138 kV Transmission Line Project

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size:)				
1. Scirpus atrovirens	30	☑	50.0%	OBL
2. Asclepias incarnata	5	☐	8.3%	OBL
3. Verbena hastata	5	☐	8.3%	FACW
4. Juncus effusus	10	☑	16.7%	OBL
5. Eupatorium perfoliatum	10	☑	16.7%	OBL
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	60	= Total Cover		
Woody Vine Stratu (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	60 (A)		65 (B)

Prevalence Index = B/A = 1.083

Hydrophytic Vegetation Indicators:

- ☑ **1 - Rapid Test for Hydrologic Vegetation**
- ☑ **2 - Dominance Test is > 50%**
- ☑ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-16	7.5YR	4/1	95	7.5YR	4/6	5	C	M	Silt Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 3

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Upland 01

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Anguin-Babbitt 138 kV Transmission Line Project City/County: Franklin Sampling Date: 05-Feb-19

Applicant/Owner: AEP State: OH Sampling Point: **upl-aeh-20190205-01**

Investigator(s): AEH, JTT Section, Township, Range: S 16 T 2N R 15W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave

Slope: 0.0% 0.0 ° Lat.: 40.072102 Long.: -82.748055 Datum: NAD 83

Soil Map Unit Name: BeB NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
upland for wetland 01

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size:)			
1. Quercus alba	30	☑ 42.9%	FACU
2. Juglans nigra	30	☑ 42.9%	FACU
3. Celtis occidentalis	10	☐ 14.3%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. Celtis occidentalis	10	☑ 100.0%	FAC
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	10	= Total Cover	
Herb Stratum (Plot size:)			
1. Carex lurida	1	☐ 100.0%	OBL
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	0	☐ 0.0%	
	1	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	81 (A)		301 (B)

Prevalence Index = B/A = 3.716

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrophytic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Upland 01

SOIL

Sampling Point: upl-aeh-20190205-01

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR	4/2	100						Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

Upland 02

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Babbitt Substation | City/County: Licking County | Sampling Date: 12-Jul-17

Applicant/Owner: AEP | State: Ohio | Sampling Point: **Up-2**

Investigator(s): PJR, LCB | Section, Township, Range: S ____ T 2N R 15W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none

Slope: 0.0% 0.0 ° | Lat.: 40.073154349 | Long.: -82.747590921 | Datum: NAD 83

Soil Map Unit Name: BeB | NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
Non-wetland data point corresponding to Wetlands 1 and 2.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: ____)				
1. Solidago altissima	25	☑	27.8%	FACU
2. Daucus carota	5	☐	5.6%	UPL
3. Cirsium arvense	15	☑	16.7%	FACU
4. Rosa multiflora	5	☐	5.6%	FACU
5. Apocynum cannabinum	10	☐	11.1%	FAC
6. Phleum pratense	20	☑	22.2%	FACU
7. Phalaris arundinacea	10	☐	11.1%	FACW
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	90	= Total Cover		
Woody Vine Stratu (Plot size: ____)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	65	x 4 =	260
UPL species	5	x 5 =	25
Column Totals:	90 (A)		335 (B)

Prevalence Index = B/A = 3.722

Hydrophytic Vegetation Indicators:

- ☐ **1 - Rapid Test for Hydrologic Vegetation**
- ☐ **2 - Dominance Test is > 50%**
- ☐ **3 - Prevalence Index is ≤3.0** [1]
- ☐ **4 - Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: Up-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-16	2.5Y 4/6	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

APPENDIX B

OEPA WETLAND ORAM FORM

AECOM Wetland 01

Site: AEP Anguin Babbit Transmission Line Project	Rater(s): JTT, AEH	Date: 2/5/2019

Field Id:
w-aeh-020519-01

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

0.25 acres

Metric 2. Upland buffers and surrounding land use.

7 | 8 (max 14 pts. | subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

Metric 3. Hydrology.

8.5 | 16.5 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [x] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

10 | 26.5 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

26.5 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

AECOM Wetland 01

Site: AEP Babbitt-Anguin 69kV Transmission Line	Rater(s): JTT, AEH	Date: 2/5/2019

Field Id:
w-aeh-020519-01

26.5 subtotal this page

0 max 10 pts. | **26.5** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

8 max 20pts. | **34.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [1] Shrub
- [1] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

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

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [x] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [2] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

Category 2

34.5 **GRAND TOTAL(max 100 pts)**

AECOM Wetland 02

Site: Babbit Tline	Rater(s): P. Renner, L. Bilski	Date: 7/12/2017

Field Id:
W-PJR-07/12/2017-2

Metric 1. Wetland Area (size).

2 (max 6 pts) | 2 (subtotal)

Select one size class and assign score.

0.47 acres

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

5 (max 14 pts.) | 7 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

Metric 3. Hydrology.

15.0 (max 30 pts.) | 22.0 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

9.5 (max 20 pts.) | 31.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [x] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [x] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

31.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

AECOM Wetland 02

Site: Babbit Tline	Rater(s): P. Renner, L. Bilski	Date: 7/12/2017

Field Id:
W-PJR-07/12/2017-2

	31.5
	subtotal this page
0	31.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

9	40.5
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [0] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [x] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

Category 2

40.5	**GRAND TOTAL(max 100 pts)**

APPENDIX C

OEPA HHEI STREAM FORMS

AECOM Stream 01

Modified Class 2

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 48

SITE NAME/LOCATION: Babbitt Substation

HH-PJR-07/12/2017-1 SITE NUMBER: 1 RIVER BASIN: Ohio River DRAINAGE AREA (mi²):

LENGTH OF STREAM REACH (ft): 296 LAT.: 40.07302 LONG.: -82.74707 RIVER CODE: RIVER MILE:

DATE: 07/12/17 SCORER: p. rENNER COMMENTS: Intermittent Stream

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	95%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

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

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40: 8

A + B

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

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

COMMENTS: **MAXIMUM POOL DEPTH** (Inches): 8.00

Pool Depth Max = 30: 25

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

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

COMMENTS: **AVERAGE BANKFULL WIDTH** (Feet): 3.50

Bankfull Width Max=30: 15

This information must also be completed

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

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

COMMENTS:

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: _____ Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 07/11/17 Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

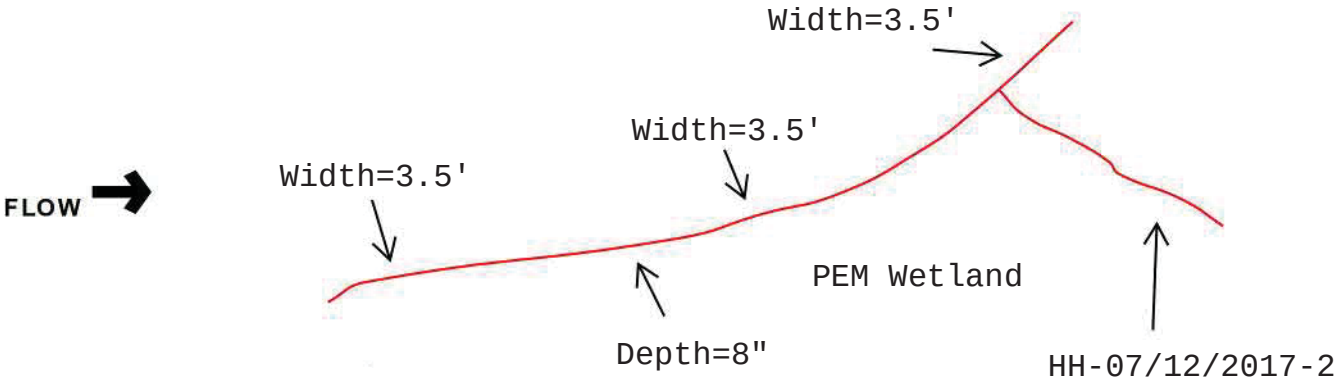
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

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

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



Save as pdf Reset Form

AECOM Stream 02

Modified Class 1

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 18

SITE NAME/LOCATION: AEP Babbit-Anguin 69kV Transmission Line

hh-aeh-020519-01 SITE NUMBER: 01 RIVER BASIN: DRAINAGE AREA (mi²):

LENGTH OF STREAM REACH (ft): LAT. 40.07300 LONG. -82.74786 RIVER CODE: RIVER MILE:

DATE: 02/05/19 SCORER: JTT, AEH COMMENTS: Intermittent

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

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

new drainage from new pond

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

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☑	SILT [3 pt]	90%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

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

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

8

A + B

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

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

Pool Depth Max = 30

5

COMMENTS: **MAXIMUM POOL DEPTH** (Inches): 2.00

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

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

Bankfull Width Max=30

5

COMMENTS: **AVERAGE BANKFULL WIDTH** (Feet): 1.00

This information must also be completed

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

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

COMMENTS:

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

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

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

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: _____ Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: 0.00

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 0%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

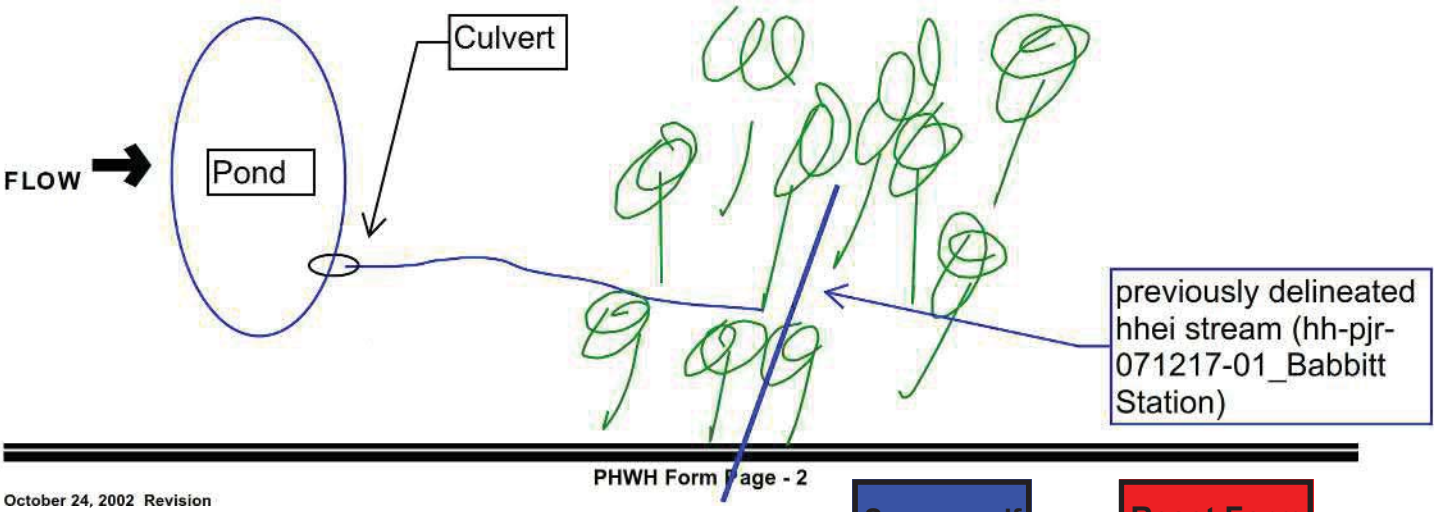
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

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

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



Save as pdf Reset Form

APPENDIX D

DELINEATED FEATURES PHOTOGRAPHS

D1 – DELINEATED WETLANDS

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Anguin-Babbitt 138 kV Transmission Line Project	60597361

Date:

February 5, 2019

Description:

AECOM
Wetland 01

PFO wetland

Category 2

Facing North

Facing East

Facing South

Facing West

Soil Pit

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
AEP	Anguin-Babbitt 138 kV Transmission Line Project	60597361

Date:

February 5, 2019

Description:

AECOM
Wetland 02

PEM wetland

Category 2

Facing North

Facing East

Facing South

Facing West

Soil Pit

D2 – DELINEATED STREAMS

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Anguin-Babbitt 138 kV Transmission Line Project	60597361

Date:

February 5, 2019

Description:

AECOM
Stream 01

Intermittent

Modified Class 2

Facing Upstream

Facing Downstream

Substrate

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
AEP	Anguin-Babbitt 138 kV Transmission Line Project	60597361

Date:

February 5, 2019

Description:

AECOM
Stream 02

Intermittent

Modified Class 1

Facing Upstream

Facing Downstream

Substrate

D3 – DELINEATED PONDS

AECOM

PHOTOGRAPHIC RECORD
PONDS

Client Name:	Site Location:	Project No.
AEP	Anguin-Babbitt 138 kV Transmission Line Project	60597361

Date:

August 2, 2018

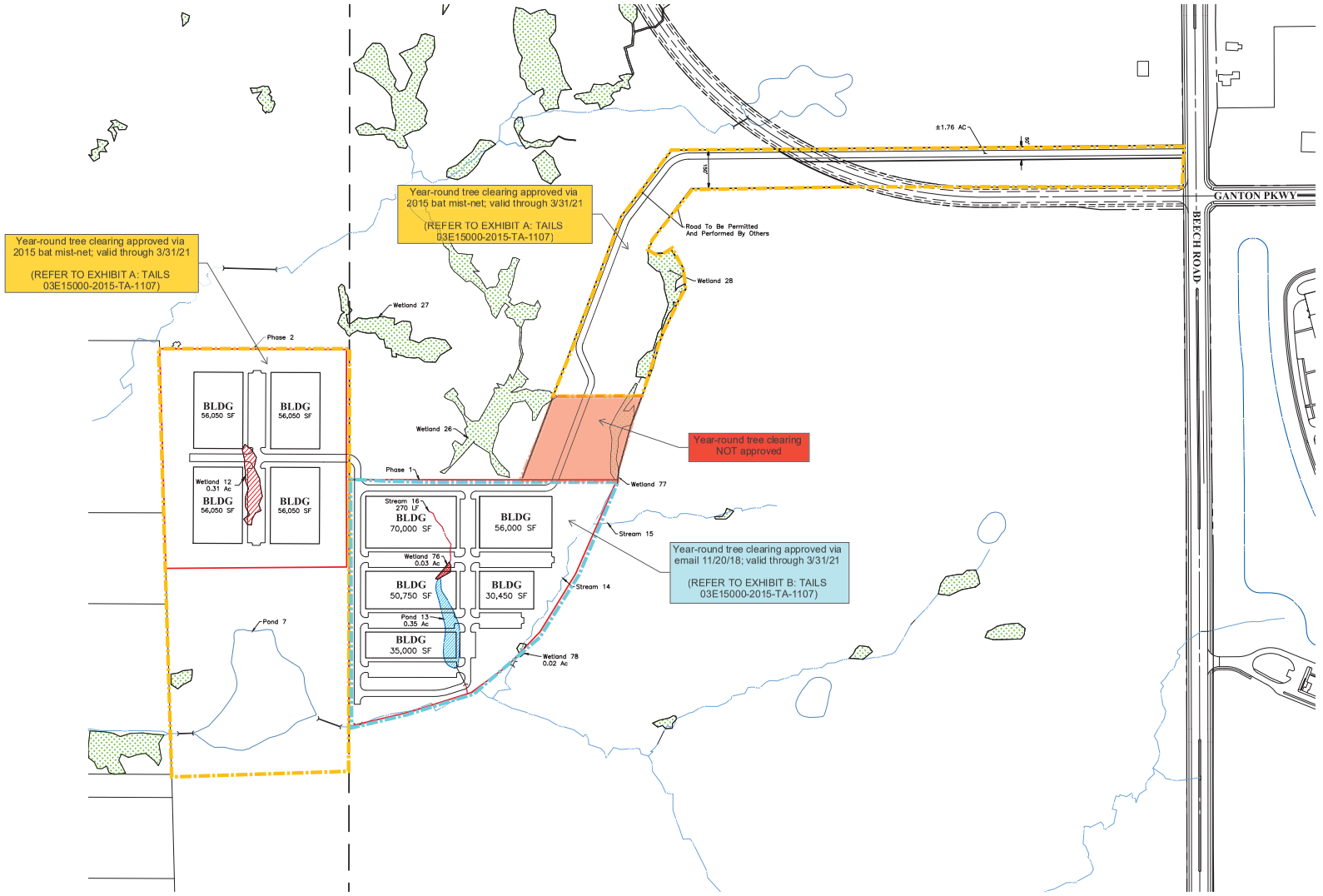
Description:

AECOM Pond 01

Facing southwest

APPENDIX E

USFWS TREE CLEARING CORRESPONDENCE



REVISIONS

MARK	DATE	DESCRIPTION

PLAIN TOWNSHIP, FRANKLIN & LICKING COUNTIES, OHIO
EXHIBIT
FOR
INDUSTRIAL SUPPORT FACILITY

EMH&T

DATE
November 26, 2018

SCALE
1" = 200'

JOB NO.
2018-1250

SHEET
1/1

EXHIBIT A

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

June 27, 2016

Heather Dardinger
EMH&T
5500 New Albany Road
Columbus, Ohio 43054

TAILS# 03E15000-2015-TA-1107

Re: Dublin Granville Road Development

Dear Ms. Dardinger,

We have received your recent correspondence requesting updated information about the subject proposal. The applicant is requesting updated technical assistance in light of the northern long-eared bat 4(d) rule. Specifically, the applicant is inquiring as to whether the 4(d) rule could be applied to allow for summer tree clearing.

The applicant conducted a summer mist net survey in 2015. No Indiana bats were detected, demonstrating probable absence of Indiana bats in the project area. A northern long-eared bat was captured during the survey, documenting presence of this species. However, the project is not located within 0.25 mile of a known northern long-eared bat hibernacula or within 150 feet of any known northern long-eared bat maternity roost tree. Therefore, the 4(d) rule for the northern long-eared bat can be applied for summer clearing.

Since the project requires a permit from the Army Corp of Engineers (Corps), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA) between the Service and the Army Corp of Engineers is completed for the northern long-eared bat.

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

Sincerely,

Dan Everson
Field Supervisor

EXHIBIT B

Dardinger, Heather

From: Seymour, Megan <megan_seymour@fws.gov>
Sent: Tuesday, November 20, 2018 2:34 PM
To: Dardinger, Heather
Subject: Re: [EXTERNAL] Babbitt-Beech Road Property
Attachments: image003.png

Categories: Filed by Newforma

Hello Heather,
This project has been assigned a new TAILS number: 03E15000-2019-TA-0224.

The 2018 mist net survey location for Project X is approximately 0.75 miles away from the Babbitt-Beech Road site, and thus these results are not applicable. However the 2015 mist net survey was only about 1,000 feet away from the Babbitt-Beech Road site and was located in similar habitat (a wooded area adjacent to a pond) that is contiguous with the property in question. This, coupled with the relatively small amount of proposed summer clearing (2 acres) for the Babbitt-Beech Road project provides some degree of comfort that the 2015 adjacent survey results could apply to the current site. Please note that we do not typically apply mist net sites from different properties and different years to adjacent sites, but again, due to the proximity of the locations, similarity of habitat, and small amount of impact, in this instance it is appropriate. Below are our revised recommendations for this project, relative to bats:

Tree clearing on the project site at any time of the year is unlikely to result in adverse impacts to Indiana bats and will not result in any unauthorized incidental take of northern long-eared bats. Negative Indiana bat summer surveys are valid for five years from the survey, which was conducted in August 2015. Therefore, **no tree clearing should occur on the site after March 31, 2021** without further coordination with this office.

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 Endangered Species Act, 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.

This letter provides technical assistance only and does not serve as a completed section 7 consultation document. If project plans change, if portions of the proposed project were not evaluated, or if additional information on listed or proposed species or their critical habitat becomes available, it is our recommendation that you reinitiate coordination with this office. 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.

Please let me know if you have any additional questions.
Sincerely,
Megan

On Tue, Nov 6, 2018 at 3:39 PM Dardinger, Heather <hdardinger@emht.com> wrote:

Hi Megan.

Following up on my voicemail… We submitted the attached request for T&E information, and received the attached response back from your office on 10/31/18. In our submittal, we requested that this property be included under the negative summer mist net survey that was complete for "Project X" in 2018 (TAILS#: 03E15000-2018-TA-1653), as Project X is immediately adjacent to the south of the property. We also have another negative summer survey immediately to the north of the property that was completed in 2015 (Dublin-Granville Road, TAILS# 03E15000-2015-TA-1107).

The response we got back did not seem to address this request and provided the "typical" response for winter clearing or do a summer survey. We weren't sure if that was intentional, or if the request for consideration under the previous survey was overlooked. Can you please look into this and let me know your thoughts?

FYI, it appears that this project was assigned the same TAILS number as Project X… I spoke to Jenny Finfera about this last week and she said I would need to talk to you, but she did mention that it should probably get its own TAILS (it will be a separate permit action). Just a heads up in case that causes any confusion as you search your records.

Thank you,

Heather

Heather Dardinger
Senior Environmental Scientist

EMH&T Engineers, Surveyors, Planners, Scientists
5500 New Albany Road, Columbus, OH 43054
v. 614.775.4523 | c. 614.561.3503 | hdardinger@emht.com

emht.com

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Megan Seymour
Wildlife Biologist
U.S. Fish and Wildlife Service, 4625 Morse Rd., Suite 104, Columbus, OH 43230
(614) 416-8993 ext 16, (614) 416-8994 fax

Dardinger, Heather

From: Dardinger, Heather
Sent: Thursday, January 3, 2019 11:11 AM
To: 'Seymour, Megan'
Subject: RE: [EXTERNAL] Babbitt-Beech Road Property
Attachments: Bat survey map rev.pdf

Categories: Filed by Newforma

Good morning Megan,

I have been informed that the project limits for the Babbitt-Beech Road Property (as referenced in the email correspondence below) have been slightly expanded to the north. The original and expanded project limits in relation to the 2015 mist net survey boundary are shown on the attached PDF.

The new area is located between the mist net boundary and the original project boundary. The new area is approximately 3 acres in size, and will result in approximately 1.5 acres of additional tree clearing, bringing the total amount of clearing on the Babbitt-Beech Road Property to approximately 3.5 acres.

We wanted to confirm with USFWS that this additional area would be subject to the same recommendations previously provided for the project, and as such may be cleared at any time of the year. Please advise.

Thank you,
Heather

From: Seymour, Megan <megan_seymour@fws.gov>
Sent: Tuesday, November 20, 2018 2:34 PM
To: Dardinger, Heather <hdardinger@emht.com>
Subject: Re: [EXTERNAL] Babbitt-Beech Road Property

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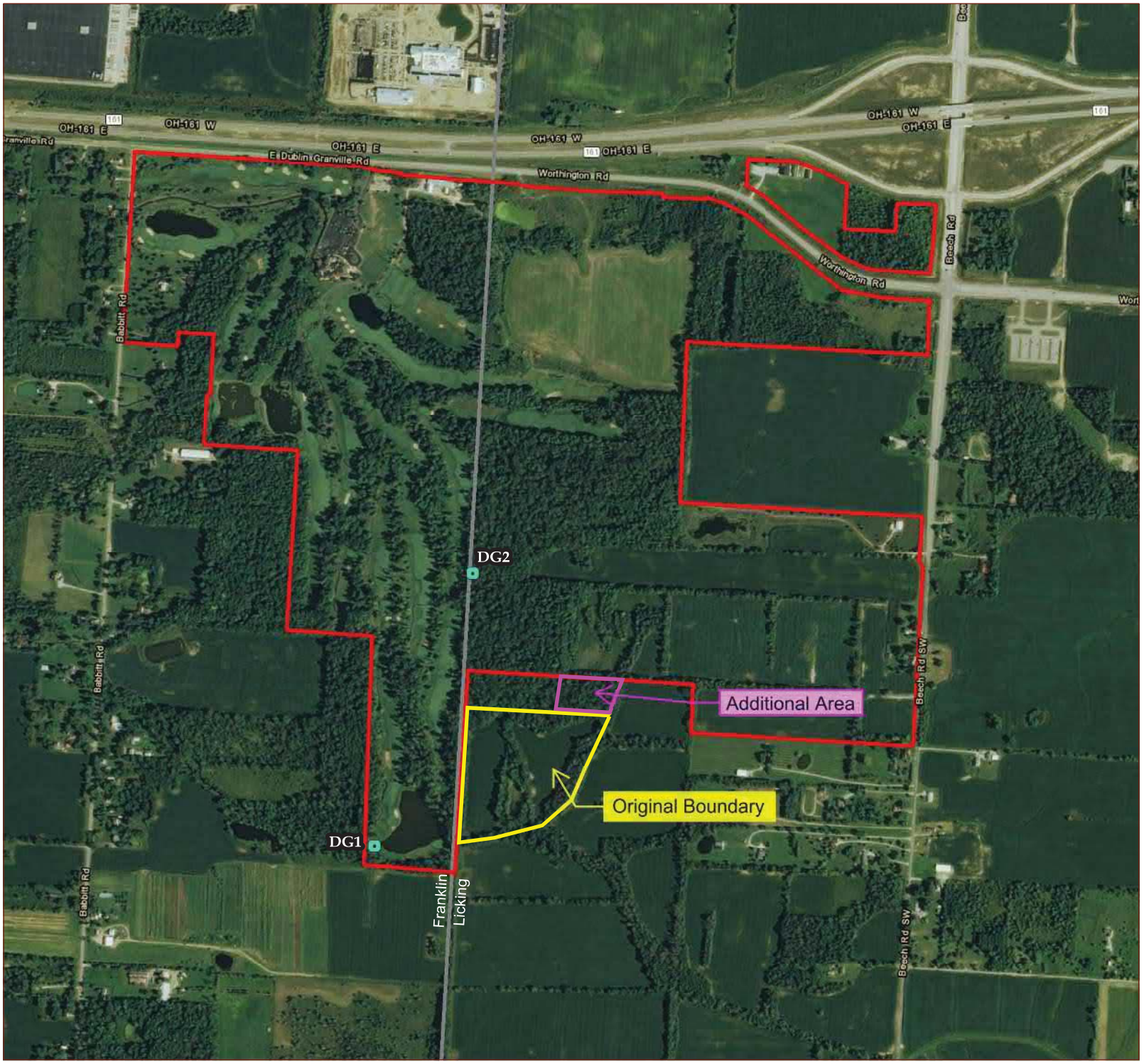
>
> Thank you,
>
> Heather



COPPERHEAD
ENVIRONMENTAL CONSULTING

Dublin-Granville Road Project

Bat Surveys

Franklin and Licking County, Ohio

Mist-net Sites
Project Boundary
County Boundary

1:12,000
or
1 inch = 1,000 feet

0 1,000 ft

Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Sources: ESRI, USGS
Date: 8/18/2015

Figure 1. Mist-net site locations for the proposed Dublin-Granville Road Development Project, Licking County, Ohio.

Summary: Letter of Notification - Letter of Notification for Anguin-Babbitt 138 kV Transmission Line Project electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.