

# Letter of Notification Kirk-Jug Street 345 kV Extension Project



PUCO Case No. 20-0531-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 12, 2020

## Letter of Notification for Kirk-Jug Street 345 kV Extension Project

### Letter of Notification

#### AEP Ohio Transmission Company, Inc. (AEP Ohio Transco) Kirk-Jug Street 345 kV Extension Project

#### 4906-6-05

AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco” or the “Company”) provides the following information 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 (LON).**

The Company is proposing the Kirk-Jug Street 345 kV Extension Project (“Project”), located in Jersey Township, Licking County, Ohio. The Project involves the construction of approximately 0.8 mile of transmission lines associated with the proposed Babbitt Station Expansion (OPSB Case Number 19-2119-EL-BLN). The Project includes two 138 kV line tie-ins and one 138 kV extension, totaling 0.7 mile, along with one double-circuit 345 kV line cut in, totaling 0.1 mile.

The two 138 kV tie lines will be identified as Babbitt Bus Tie #1 and Babbitt Bus Tie #2, which connect the Babbitt Station Expansion to the existing Babbitt Station, which was approved in OPSB Case Number 17-1325-EL-BLN. The 138 kV extension connects the existing Babbitt-Kirk 138 kV circuit to the proposed Babbitt Station Expansion. Additionally, the 345 kV cut in will connect the Jug Street-Kirk 345 kV circuit to the proposed Babbitt Station Expansion. **Map 1** shows the location of the Project in relation to the surrounding vicinity.

The Project meets the requirements for a Letter of Notification (“LON”) because it is within the types of projects defined by Item 4(b) of Ohio Administrative Code Section 4906-1-01 Appendix A of the 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:
  - (b) Line(s) greater than 0.2 miles in length but not greater than two miles in length.

The Project has been assigned PUCO Case No. 20-0531-EL-BLN.

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### **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 is necessary to address PJM and Company planning criteria violations associated with a consequential load loss of greater than 300 MW. Currently, due to the addition of recent customers' loads in the New Albany area, the loss of the Jug Street – Babbitt 138 kV line and the Kirk – Babbitt 138 kV line would result in a 300 MW load drop, resulting in a planning criteria violation. The installation of the new 345/138 kV transformer and associated sectionalizing equipment at Babbitt Station will mitigate this violation.

The Project need and solution were submitted to the PJM Subregional RTEP Committee during an April 2019 and November 2019 meeting, respectively (see Appendix B). The PJM supplemental number issued by PJM is s2139. The Project was referenced in the Company's 2019 Long Term Forecast Table FE-T7 page 2 of 102 (see Appendix B).

### **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 **Map 1**. The Project directly impacts the following existing facilities:

- Babbitt Station
- Kirk-Jug Street 345 kV transmission line
- Babbitt-Kirk 138 kV transmission line

### **B(4) Alternatives Considered**

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

A formal routing analysis was not needed for this Project because of the short distance between the existing Babbitt Station, the Babbitt 345 kV Yard Expansion, and the existing Kirk-Jug 345 kV transmission line. The proposed routes for the Project represented the most appropriate solution for meeting the Company's need in the area. Specifically, the routes were chosen because they minimize land use impacts (i.e. avoids residential areas as the nearest residences is located over 500 feet from the existing 345 kV transmission line), minimizes ecological impacts (no impacts to streams or wetlands are anticipated) and the Project is located entirely within the Company's property.

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### **B(5) Public Information Program**

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

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

### **B(6) Construction Schedule**

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

Construction of the Project is planned to begin July 2020 with an anticipated in-service date of June 2021.

### **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.**

**Map 1** provides the proposed Project area and an approximate station fence line of the proposed Babbitt Station Expansion (OPSB Case Number 19-2119-EL-BLN) and the associated transmission lines 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. **Map 2** shows the Project area at a 1:4,800-scale on recent aerial photography, as provided by OSIP imagery dated 2018.

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 0.1 mile before turning left on Worthington Road NW. The station site is located approximately 0.4 mile on the right at latitude 40.074381, longitude -82.74071.



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### **B(8) Property Agreements**

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

The proposed Project will be constructed on property currently owned by the Company (parcel ID 094-106596-00.005). No additional land rights are needed.

### **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 transmission line construction for the Kirk-Jug Street 345 kV line will include the following:

|                  |   |
|------------------|---|
| Voltage:         | 345kV   |
| Conductors:      | 2x bundled 954 kcmil 45/7 Strands RAIL ACSR                       |
| Static Wire:     | 2x 96 fiber OPGW  |
| Insulators:      | 50 kip polymer deadends   |
| ROW Width:       | 150 Feet  |
| Structure Types: | (1) Two-pole deadend structure on pier foundation, double circuit |

The transmission line construction for the Babbitt Bus Tie #1 138 kV line will include the following:

|                  |   |
|------------------|---|
| Voltage:         | 138kV   |
| Conductors:      | 2x bundled 1033 kcmil 54/7 Strands CURLEW ACSR  |
| Static Wire:     | 7 No. 8 Alumoweld   |
| Insulators:      | 25 kip polymer deadends and braced post suspension  |
| ROW Width:       | 100 Feet  |
| Structure Types: | (1) One pole deadend structure on pier foundation, single circuit<br>(1) One pole suspension structure, direct embedded, single circuit |

The transmission line construction for the Babbitt Bus Tie #2 138 kV line will include the following:

|                  |  |
|------------------|--|
| Voltage:         | 138kV  |
| Conductors:      | 2x bundled 1033 kcmil 54/7 Strands CURLEW ACSR                     |
| Static Wire:     | 7 No. 8 Alumoweld  |
| Insulators:      | 25 kip polymer deadend   |
| ROW Width:       | 100 Feet   |
| Structure Types: | (3) One pole deadend structures on pier foundation, single circuit |

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The transmission line construction for the Babbitt 138 kV Extension line will include the following:

|                  |  |
|------------------|--|
| Voltage:         | 138kV  |
| Conductors:      | 2x bundled 954 kcmil 45/7 Strands RAIL ACSR  |
| Static Wire:     | 159 kcmil 12/7 Strand GUINEA ACSR  |
| Insulators:      | 25 kip Polymer deadends and braced post suspension   |
| ROW Width:       | 150 Feet   |
| Structure Types: | (2) One pole deadend structures on pier foundation, single circuit<br>(1) One pole suspension structure, direct embedded, single circuit |

### **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.**

No occupied residences or institutions are 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 \$3,000,000, using a Class 4 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 **Map 2**. The Project location has historically been primarily agricultural land with scattered woodlots. However, the area is being developed for commercial use. The western portion of the Project is mapped in the Village of New Albany in Jersey Township and Licking County. The central and eastern portions of the Project are mapped just outside the boundary of the Village of New Albany.

#### **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.**

The Project is mapped on a property that is approximately 36 acres, consisting primarily of old field, hay field and pasture, and row crops. The Licking County Auditor was contacted on February 25, 2020 regarding the Project site. The site is reportedly not registered as agricultural district.

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### **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.**

A cultural resource survey and report were conducted by the Company's consultant for the Project in June 2019. Correspondence from the State Historic Preservation Office ("SHPO") was received in July 2019, see Appendix C. The SHPO stated that the Project will have no adverse affect on historic properties and that no further archaeological work is necessary.

### **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 (OEPA) for authorization of construction storm water discharges under General Permit OHC000005.

Two palustrine emergent wetlands, one palustrine forested wetland, one perennial stream, and one intermittent stream are located within the 70 acre Project study area (see the Wetland Delineation and Stream Assessment Report included as Appendix D). However, these features are located over 500 feet east of the Project and are not expected to be impacted by the Project. Therefore, the Company does not anticipate the Project requiring a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers or a Section 401 Water Quality Certification from the OEPA.

Based on review of Federal Emergency Management Agency ("FEMA") data for Licking County, the Project does not cross a 100-year floodplain. 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 in August and September 2019. A total of five state and/or federally

## Letter of Notification for Kirk-Jug Street 345 kV Extension Project

protected species were listed by the ODNR and USFWS including the following: Indiana bat, northern long-eared bat, fawnsfoot, lake chubsucker, and the eastern massasauga. Tree clearing is not anticipated for the Project, thus no impacts to the bat species are expected. Based on agency responses and that no in-water work is proposed that would affect a perennial stream, this project is not likely to impact the fawnsfoot or lake chubsucker. No habitat was found suitable for the eastern massasauga, thus no impacts are expected. A copy of the agency correspondence is provided in Appendix D.

### **B(10)(f) Areas of Ecological Concern**

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

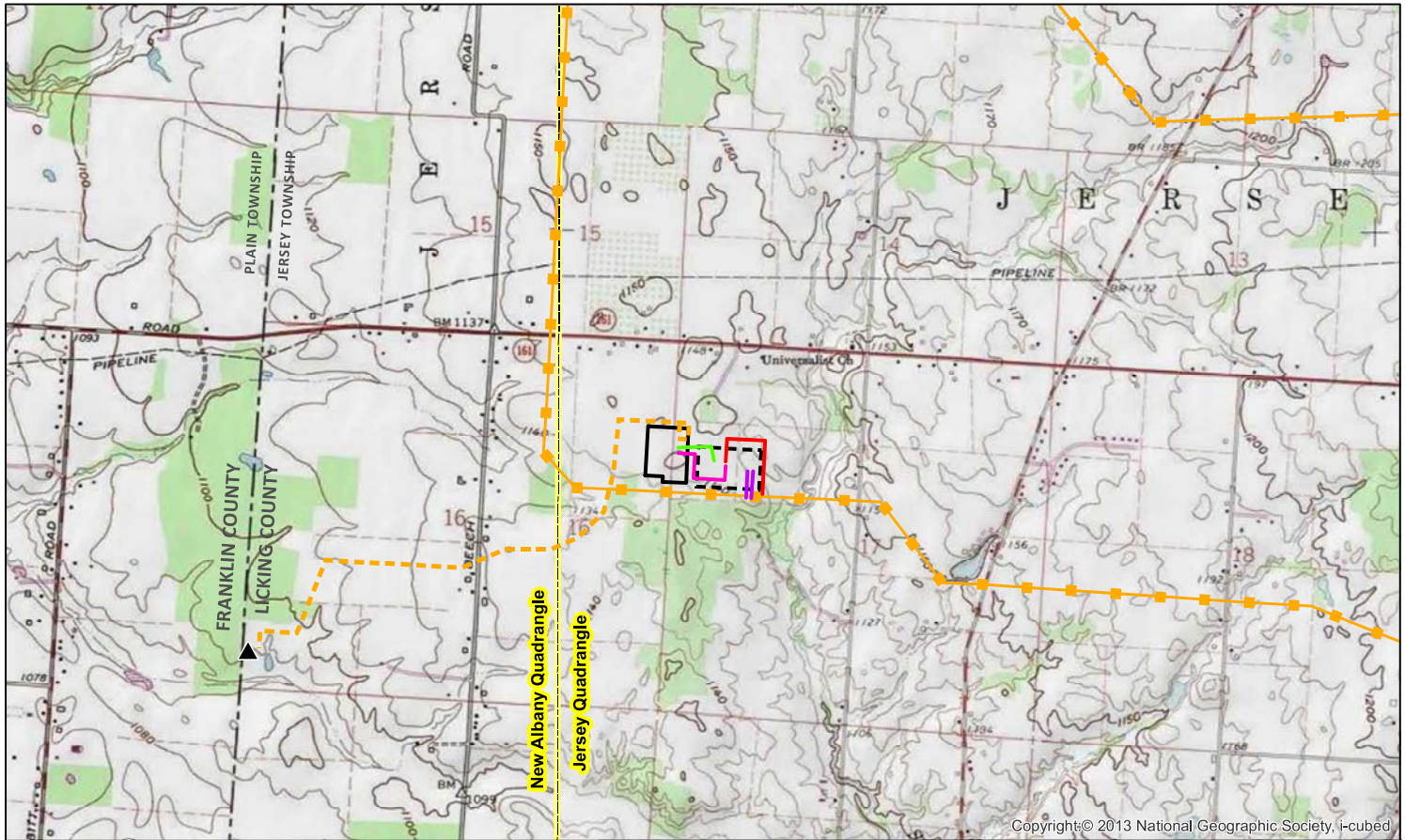
The Company's consultant prepared a Wetland Delineation and Stream Assessment Report. An ecological survey was conducted for the Project area, and the Project does not anticipate impacting any streams, wetlands, or other waterbodies. A copy of the Wetland Delineation and Stream Assessment Report for the Project is included as Appendix D. A SWPPP will also be prepared prior to construction.

### **B(10)(g) Unusual Conditions**

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

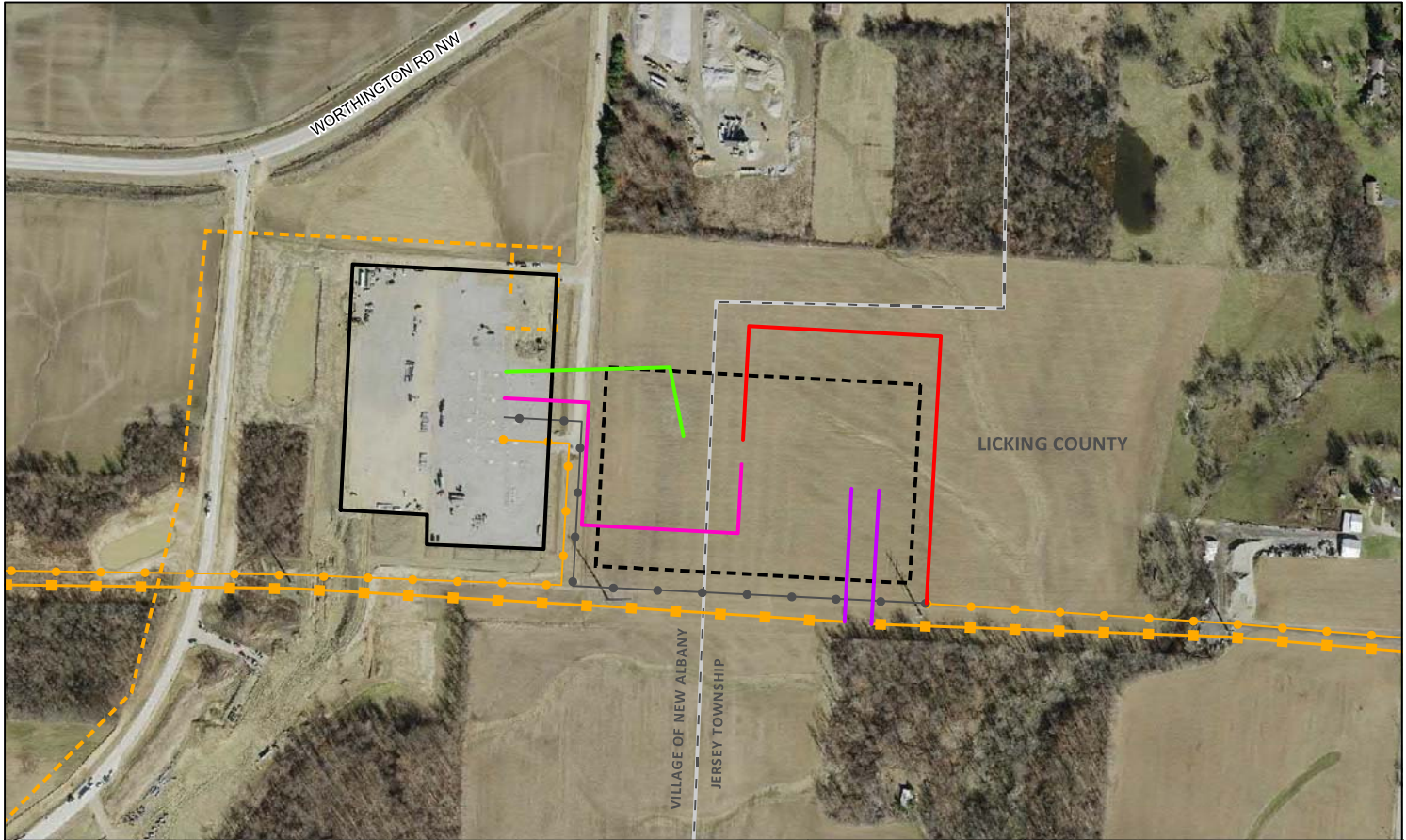
To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

## **Appendix A      Project Figures**



|  |   |  |  |   |
|--|---|--|--|---|
| <p><b>Legend</b></p> <ul style="list-style-type: none"> <li>Proposed Babbitt Substation</li> <li>Fenceline Expansion (filled separately under 19-2119-EL-BLN)</li> <li>Existing Babbitt Substation Fence</li> <li>Station (under construction)</li> <li>138 kV Transmission Line (under construction)</li> <li>Existing Transmission Line (345 kV+)</li> <li>USGS 7.5' Topographical Quadrangle</li> </ul> | <p><b>Project Components</b></p> <ul style="list-style-type: none"> <li>Babbitt 138 kV Extension</li> <li>Babbitt Bus Tie # 1 138 kV</li> <li>Babbitt Bus Tie # 2 138 kV</li> <li>Kirk-Jug St. 345 kV Cut In</li> </ul> | <p>Data Sources: AEP (2020), USGS (2013), ESRI (2013), PowerMap (2011)</p> <p>Coordinate System: State Plane Ohio South NAD 83</p> <p>March 05, 2020</p> | <p>DELAWARE</p> <p>FRANKLIN</p> <p>LICKING</p> <p>New Albany</p> <p>Ash</p> <p>Jersey</p> <p>Gahanna</p> | <p><b>Map 1</b></p> <p><b>Project Overview</b></p> <p>Babbitt Station Expansion Tie-In Transmission Lines Project</p> |
|--|---|--|--|---|





|  |   |  |  |  |
|--|---|--|--|--|
| <p>Proposed Babbitt Substation Fenceline Expansion (filed separately under 19-2119-EL-BLN)</p> <p>Existing Babbitt Substation Fence</p> <p>Existing 138 kV Line (to be removed)</p> <p>Existing 138 kV Line</p> <p>Existing 345 kV Line</p> <p>138 kV Transmission Line (under construction)</p> | <p>Municipality Boundary</p> <p><b>Project Components</b></p> <p>Babbitt 138 kV Extension</p> <p>Babbitt Bus Tie # 1 138 kV</p> <p>Babbitt Bus Tie # 2 138 kV</p> <p>Kirk-Jug St. 345 kV Cut In</p> | <p>Data Sources: AEP (2020), OSIP (2018)</p> <p>Coordinate System: State Plane Ohio South NAD 83</p> <p>March 05, 2020</p> | <p>DELAWARE</p> <p>FRANKLIN</p> <p>New Albany</p> <p>Gahanna</p> <p>LICKING</p> <p>Ash</p> <p>Jersey</p> | <p><b>Map 2</b></p> <p><b>Aerial Imagery of Project Area</b></p> <p>Babbitt Station Expansion Tie-In Transmission Lines Project</p> <p>0 200 400 600 800</p> <p>Feet</p> |
|--|---|--|--|--|

## **Appendix B      PJM Submittal and 2019 Long Term Forecast Report**



## AEP Transmission Zone M-3 Process Anguin Station

**Need Number:** AEP-2018-OH002

**Process Stage:** Solution Meeting 11/22/2019

**Previously Presented:**

Needs Meeting 10/28/2018

Solution Meeting 2/20/2019

**Project Driver:**

Customer Service

**Specific Assumption Reference:**

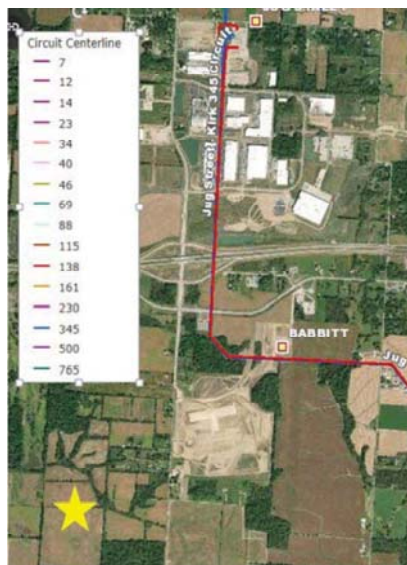
AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 7)

**Problem Statement:**

A new customer delivery point has been requested.

- Initial load of 150MW with permanent service available by Q1-2020.
- Ultimate load for this customer is projected to reach 720MW as early as Q4 2026.
- 10 MW of distribution construction power for this customer is required in May 2019. 7 MW of distribution construction power for an existing customer planning to expand is also required in 2019. The existing customer has reserved distribution capacity for up to 10 years of expansion activity. As a result, AEP-Ohio has requested a 138kV delivery Point at Babbitt station to serve a "temporary" skid station for up to 10 years.
- Additional large customers are in discussions to take service in this area.
- Facilities will be designed to accommodate anticipated future load but only facilities required to serve committed load will be constructed.

As part of the DNH analysis, PJM has identified a violation of 300 MW of load drop for loss of Jug Street-Babbitt 138 kV line plus Kirk-Babbitt 138 kV line with the addition of this project.



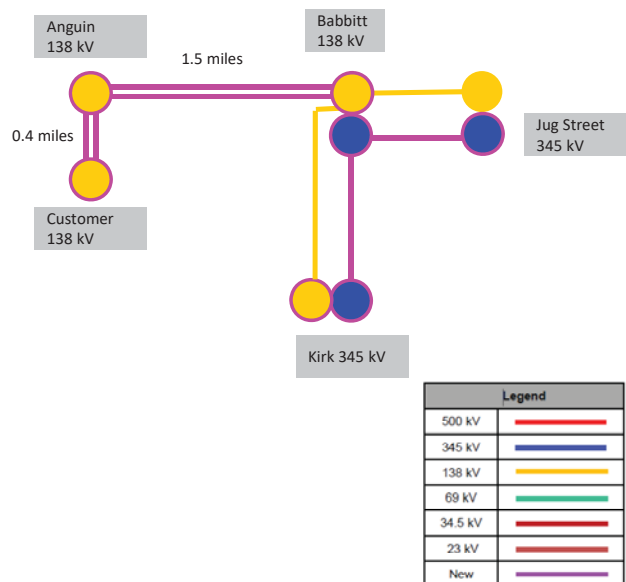
## AEP Transmission Zone M-3 Process Anguin Station

**Need Number:** AEP-2018-OH002

**Process Stage:** Solution Meeting 11/22/2019

### Proposed Solution:

- Construct 2-138 kV circuits (~1.5 miles) from Babbitt Station to a new Anguin Station using 2 bundled 1033 ACSS conductor per circuit. **\$15.2M**
- Construct 2-138 kV circuits (~.4 miles) from Anguin Station to a new customer station using 795 ACSS conductor. **\$2.5M**
- At the existing 138 kV Babbitt Station, install 4-138 kV 4,000A 63kA breakers to accommodate the new 138 kV double circuit to Anguin Station, 2-138kV 4,000A 63kA bus tie breakers, a 57.6MVar capacitor bank with protection, and a 138kV 4,000A 63kA CB to serve AEP-Ohio's requested delivery point. **\$6.6M**
- Construct Anguin Station in a breaker and a half arrangement utilizing 8-138 kV 4,000A 63kA breakers and 2-57.6MVar capacitor banks with protection. **\$24.0M**
- Cut into existing Jug Street-Kirk 345kV circuit into a new 345 kV yard at Babbitt Station. Relocate Babbitt-Kirk 138kV circuit exit at Babbitt Station. Estimated Cost: **\$3.3M**
- At Babbitt Station, install 3-3,000A, 63kA CB's in ring bus configuration at the 345 kV yard, a new 345/138kV 675 MVA transformer, and a new control house. Install 1-138 kV capacitor bank (54.7 Mvar) with high side protection. Install 9-138 kV, 4,000A 63kA CB's including a new 138kV yard and two short lines to connect both yards. Cost includes purchase of land for the required expansion. Estimated Cost: **\$39.4M**
- Kirk 138kV – Update line relaying. Estimated Cost: **\$0.3M**





Need Number: AEP-2018-OH002

Process Stage: Solution Meeting 11/22/19

#### Alternatives:

- Build two overhead circuits from Babbitt Station, construct one UG circuit from Jug Street Station and one UG circuit from Babbitt Station-Anguin Station to serve the initial load.
- Build two overhead circuits from Babbitt Station, cut into existing overhead Babbitt-Jug Street 138kV circuit to provide in/out service to Anguin Station.
- These two alternates aren't as cost effective as the chosen solution.
- Construct two 138 kV lines to Anguin station. One of the lines would come from Babbitt station, the other line would come from Jug Street station. The line from Jug Street would be required to be constructed underground between Jug Street and Babbitt (~2.0 miles) due to development of the surrounding area. From Babbitt the 138 kV lines from Jug Street and Babbitt could utilize common double circuit structures to Anguin station (~1.5 miles). This option would result in the loading of the existing Jug Street 345/138 kV Transformer to 96% of its 544 MVA Summer Emergency rating. With the projected load communicated by the customer and other customers in the area, this was deemed to not be a prudent long term solution. To alleviate this concern a 2<sup>nd</sup> 345 kV transformer would need to be installed at Jug Street as part of the alternative. This alternative would carry with it significant constructability concerns associated with the limited amount of available space at the existing station and its surrounding footprint. Estimated Cost: \$95M
- Serving Anguin station by looping the Gahanna – West Millersport 138 kV circuit from the south was evaluated, but the alternative was eliminated after siting and constructability reviews of potential line routes revealed the option to be highly infeasible to construct without becoming cost prohibitive and having a significant impact on the surrounding communities due to existing and future development of the area. The future projected load communicated by the customer also brought the prudence of this alternative into question in the long term.

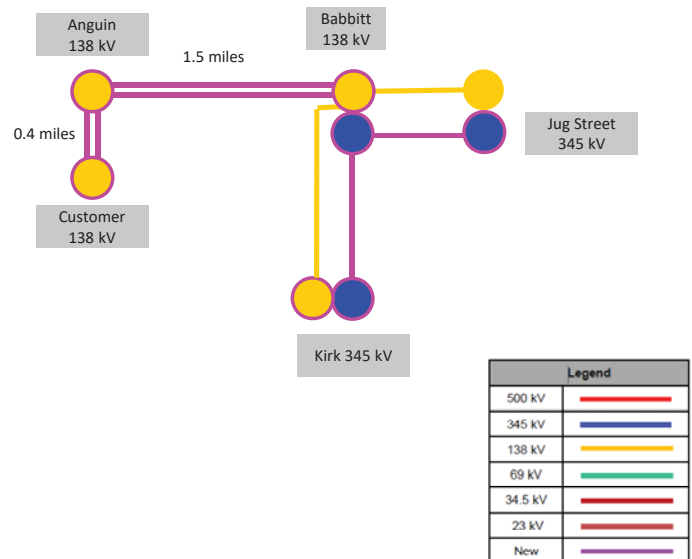
Estimated Cost: \$91.3M

Projected In-Service: ~~5/1/2020~~ 6/1/2021

Project Status: Scoping

Model: 2024 RTEP

## AEP Transmission Zone M-3 Process Anguin Station



PUCO FORM FE-17  
AEP OHIO TRANSMISSION COMPANY  
CHARACTERISTICS OF EXISTING TRANSMISSION LINES

| Transmission Name<br>& Line No. * | Point of (Origin - Terminus)<br><br>Indicate Location of Line's Beginning and Terminus | Summer Capability |                  | Winter Capability |                  | Operating Voltage (kV)<br><br>Indicate Design Voltage and Operating Voltage For Each Line | Right-of-Way   |                        | Type of Supporting Structure<br><br>Steel Towers, Wood Poles or Underground, etc. and Number of Miles of the Line of Each Structure | Number of Circuits |           | Substation Name                    |
|-----------------------------------|--|-------------------|------------------|-------------------|------------------|---|----------------|------------------------|---|--------------------|-----------|------------------------------------|
|                                   |  | Normal Rating     | Emergency Rating | Normal Rating     | Emergency Rating |   | Length (Miles) | Width Max. Min. (feet) |   | Design             | Installed |                                    |
| 19957                             | "Steamtown - Steamtown (Markwest) #1   | 747               | 747              | 926               | 926              | 138   | 0.01           | 100/100                | 1 pole  | 1                  | 1         |                                    |
| 19958                             | "Steamtown - Steamtown (Markwest) #2   | 747               | 747              | 926               | 926              | 138   | 0.01           | 100/100                | 1 pole  | 1                  | 1         |                                    |
| 19959                             | "Steamtown - Steamtown (Markwest) #3   | 747               | 747              | 926               | 926              | 138   | 0.01           | 100/100                | 1 pole  | 1                  | 1         |                                    |
| 22618                             | "Steamtown - Steamtown (Markwest) #4   | 747               | 747              | 926               | 926              | 138   | 0.01           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 25880                             | Allen - Logtown  | 290               | 290              | 290               | 290              | 138   | 2.29           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 16676                             | Allen - Timber Switch  | 283               | 341              | 357               | 406              | 138   | 100/100        | 100/100                | Steel   | 1                  | 1         | TILLMAN                            |
| 20237                             | Anlin - Hyatt  | 564               | 755              | 712               | 858              | 138   | 0.1            | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 26298                             | Anlin - Sumac #1   | 766               | 898              | 970               | 1069             | 138   | 0.04           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 26297                             | Anlin - Sumac #2   | 766               | 898              | 970               | 1069             | 138   | 0.04           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 26319                             | Azalea - Leesville   | 537               | 537              | 566               | 566              | 138   | 1.35           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 24231                             | Azalea - Yager   | 296               | 413              | 375               | 464              | 138   | 4.2            | 100/100                | Wood - 1 pole   | 1                  | 1         |                                    |
| 27897                             | Babbitt - Jug  | 564               | 747              | 712               | 858              | 138   | 2.03           | 150/150                | Steel - 1 pole  | 1                  | 1         |                                    |
| 20758                             | Babbitt - Kik  | 564               | 755              | 712               | 858              | 138   | 345            | 150/150                | Steel - 2 pole  | 1                  | 1         | HAZELTON                           |
| 11337                             | Beatty - Bolton  | 223               | 223              | 281               | 281              | 138   | 2.64           | 100/100                | Steel - Lattice   | 1                  | 1         |                                    |
| 27117                             | Belmont (FE) - Levee   | 129               | 161              | 162               | 186              | 138   | 3.26           | 100/100                | Steel - 1 pole  | 1                  | 1         | RENO                               |
| 2804                              | Bexley - Groves  | 335               | 392              | 424               | 466              | 138   | 4.34           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 21617                             | Biers Run - Bixby  | 1409              | 1655             | 1761              | 1967             | 345   | 0.05           | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 24218                             | Biers Run - Circleville  | 389               | 559              | 493               | 623              | 138   | 18.93          | 100/100                | Wood - 1 pole   | 1                  | 1         |                                    |
| 22597                             | Biers Run - Delano   | 383               | 449              | 485               | 534              | 138   | 9.95           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 21618                             | Biers Run - Don Marquis  | 1409              | 1409             | 1781              | 1781             | 345   | 0.08           | 150/150                | Wood - H-frame  | 1                  | 1         |                                    |
| 658                               | Bixby - Groves Road #1   | 145               | 145              | 183               | 183              | 138   | 4.29           | 100/100                | Wood - 1 pole   | 1                  | 1         |                                    |
| 2331                              | Bixby - Groves Road #2   | 335               | 392              | 424               | 466              | 138   | 4.32           | 100/100                | Steel - 2 pole  | 1                  | 1         |                                    |
| 20738                             | Bixby - Ohio Central   | 1409              | 1887             | 1781              | 2144             | 345   | 2.25           | 150/150                | Wood - 1 pole   | 1                  | 1         |                                    |
| 593                               | Bixby - West Lancaster   | 296               | 413              | 375               | 464              | 138   | 19.04          | 100/100                | Steel - 3 pole  | 1                  | 1         | PICKERING ROAD                     |
| 16797                             | Blue Creek - Maddox Creek  | 2265              | 2826             | 3016              | 3363             | 345   | 0.03           | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 24803                             | Blue Racer - Heilan  | 296               | 413              | 375               | 464              | 138   | 3.25           | 100/100                | Steel   | 1                  | 1         |                                    |
| 20578                             | Blue Racer - Texas Eastern   | 101               | 101              | 127               | 127              | 138   | 0.01           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 26757                             | Bolton - Hall  | 223               | 223              | 281               | 281              | 138   | 3.15           | 100/100                | Steel - Lattice   | 1                  | 1         |                                    |
| 24900                             | Britton-Davidson #2  | 296               | 398              | 375               | 452              | 138   | 0.78           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 23297                             | Canton Central - Stemple Switch  | 1409              | 1409             | 1781              | 1781             | 345   | 0.45           | 150/150                | Wood - 1 pole   | 1                  | 1         |                                    |
| 628                               | Circleville - Harrison #1  | 323               | 451              | 408               | 506              | 138   | 15.21          | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 25137                             | Circleville - Harrison #2  | 323               | 451              | 408               | 506              | 138   | 15.21          | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 637                               | Circleville - Soppo  | 358               | 358              | 358               | 358              | 138   | 2.62           | 100/100                | Steel - 2 pole  | 1                  | 1         |                                    |
| 26338                             | Crouse - Zanesville  | 150               | 167              | 189               | 210              | 138   | 7.9            | 100/100                | Wood - 1 pole   | 1                  | 1         |                                    |
| 20737                             | Conesville - Ohio Central  | 1409              | 1887             | 1781              | 2144             | 345   | 2.25           | 150/150                | Steel - 2 pole  | 1                  | 1         |                                    |
| 677                               | Corridor - Gahanna 138KV   | 335               | 392              | 424               | 466              | 138   | 1.34           | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 18637                             | Corridor - Vassell #1  | 1409              | 1472             | 1781              | 1826             | 345   | 0.38           | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 18638                             | Corridor - Vassell #2  | 1409              | 1867             | 1781              | 2144             | 345   | 0.38           | 150/150                | Steel - Lattice   | 1                  | 1         |                                    |
| 22417                             | Corwin - Elk   | 219               | 223              | 277               | 281              | 138   | 12.6           | 100/100                | Steel - 2 pole  | 1                  | 1         |                                    |
| 27081                             | Corwin - Rhodes  | 219               | 223              | 277               | 281              | 138   | 5.3            | 100/100                | Wood - 1 pole   | 1                  | 1         | MILTON SWITCH                      |
| 21641                             | Delano - Delano Rd (SOP)   | 200               | 254              | 253               | 293              | 138   | 0.05           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 627                               | Delano - Kenworth - Ross   | 200               | 254              | 253               | 293              | 138   | 4.99           | 100/100                | Steel - 2 pole  | 1                  | 1         | CLAYBURNE SWITCH                   |
| 24219                             | Delano - Ross #2   | 323               | 449              | 408               | 506              | 138   | 4.69           | 100/100                | Steel - 2 pole  | 1                  | 1         |                                    |
| 25938                             | Delano - Tuscarora   | 383               | 449              | 485               | 534              | 138   | 11             | 100/100                | Steel - H-frame   | 1                  | 1         |                                    |
| 19358                             | Delaware - Vassell   | 338               | 456              | 427               | 517              | 138   | 3.06           | 100/100                | Steel - Lattice   | 1                  | 1         |                                    |
| 596                               | Decker Switch - Elliott - Poston   | 190               | 190              | 190               | 190              | 138   | 0.02           | 100/100                | Steel - Lattice   | 1                  | 1         | ROSEWOOD SWITCH                    |
| 27118                             | Duck Creek - Levee   | 248               | 282              | 313               | 356              | 138   | 4.05           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 27119                             | Duck Creek - Mill Creek  | 240               | 282              | 313               | 356              | 138   | 1.55           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 17718                             | East Lepaic - Yellow Creek   | 287               | 337              | 363               | 400              | 138   | 0.41           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 17717                             | East Lima - Yellow Creek   | 145               | 145              | 183               | 183              | 138   | 0.41           | 100/100                | Wood - 1 pole   | 1                  | 1         | RILEY CREEK SWITCH, CAMPBELL ROAD  |
| 26200                             | Elk - Lemaster   | 196               | 223              | 248               | 291              | 138   | 10.7           | 100/100                | Steel - 1 pole  | 1                  | 1         | MINERAL SWITCH, BOLINS MILL SWITCH |
| 22219                             | Frederick - Gavin  | 185               | 185              | 234               | 234              | 138   | 0.08           | 100/100                | Steel - Lattice   | 1                  | 1         |                                    |
| 22220                             | Frederick - Millbrook  | 185               | 185              | 234               | 234              | 138   | 0.05           | 100/100                | Steel - Lattice   | 1                  | 1         |                                    |
| 8315                              | Frederick - Marysville   | 4047              | 4571             | 4484              | 4961             | 765   | 109            | 200/200                | Steel - H-frame   | 1                  | 1         |                                    |
| 24229                             | Freebird - Nottingham  | 296               | 413              | 375               | 464              | 138   | 4.87           | 100/100                | Steel - 2 pole  | 1                  | 1         |                                    |
| 26536                             | Freebird - South Cadiz   | 296               | 413              | 375               | 464              | 138   | 3.69           | 100/100                | Steel - 1 pole  | 1                  | 1         |                                    |
| 709                               | Fremont Center - Tiffin Center #1  | 283               | 396              | 357               | 444              | 138   | 12.59          | 100/100                | Steel - 1 pole  | 1                  | 1         | STONE PLANT SWITCH                 |

## **Appendix C      SHPO Correspondence**





In reply, refer to  
2019-LIC-45584

July 16, 2019

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

**RE: Babbitt Station Expansion Project, Jersey Township, Licking County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received on June 18, 2019 regarding the proposed Babbitt Station Expansion Project, Jersey Township, Licking County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to *Phase I Cultural Resource Management Investigations for the 24.1 ha (59.56 ac) Babbitt Station Expansion Project in Jersey Township, Licking County, Ohio* by Weller & Associates, Inc. (2019).

A literature review, visual inspection, surface collection, and shovel test unit excavation were completed as part of the investigations. Two (2) previously identified archaeological sites are located within the project area. Ohio Archaeological Inventory (OAI)#33LI2093 is a historic scatter and OAI#33LI2094 is a prehistoric isolated find, both identified in 2012. OAI#33LI2094 was not reidentified during this survey. OAI#33LI2093 was reidentified during survey but only prehistoric artifacts were found, making it a multicomponent site. Neither previously identified sites are recommended eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with this recommendation. Eight (2) new archaeological sites were identified during survey. OAI#33LI2409, 33LI2410, 33LI2412, 33LI2413, and 33LI2414 are prehistoric isolated finds. OAI#33LI2407, 33LI2408, and 33LI2411 are prehistoric lithic scatters. None of the sites are recommended eligible for listing in the NRHP. Our office agrees with this recommendation and no further archaeological investigations are necessary.

A literature review and field survey were completed as part of the investigations. Two properties fifty years of age or older were identified within the project area and/or 1,000' study area that may have a direct line of sight to the project. It is Weller's recommendation that the identified properties are not eligible for inclusion in the NRHP due to historical and architectural insignificance. Our office agrees with Weller's recommendations of eligibility.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Krista Horrocks", is written over a horizontal line.

Krista Horrocks, Project Reviews Manager  
Resource Protection and Review

cc: Amy Toohey, AEP ([ajtoohey@aep.com](mailto:ajtoohey@aep.com))  
Alicia Cross, AEP ([amcross@aep.com](mailto:amcross@aep.com))

RPR Serial No: 1079670

## **Appendix D      Ecological Resources Inventory Report**

# **BABBITT STATION EXPANSION 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** Imagine it.  
Delivered.  
525 Vine Street, Suite 1800  
Cincinnati, Ohio 45202

Project #: 60605808

September 2019



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**LIST OF ACRONYMS and ABBREVIATIONS**

|                  |   |
|------------------|---|
| AECOM            | AECOM Technical Services, Inc.                    |
| AEP Ohio Transco | American Electric Power Ohio Transmission Company |
| DBH              | Diameter at Breast Height                         |
| DOW              | Division of Wildlife                              |
| DWR              | Division of Water Resources                       |
| F                | Fahrenheit  |
| 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                         |
| 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                      |
| PEM              | Palustrine emergent                               |
| PFO              | Palustrine forested                               |
| PSS              | Palustrine scrub/shrub                            |
| PUB              | Palustrine unconsolidated bottom                  |
| PHWH             | Primary Headwater Habitat                         |
| QHEI             | Qualitative Habitat Evaluation Index              |
| 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 expand the existing Babbitt Station (Project) in Licking County, Ohio. The Project is approximately 70 acres east of the existing Babbitt Station. AEP Ohio Transco requested that AECOM Technical Services, Inc. (AECOM) conduct a wetland delineation and stream assessment within the 70-acre area (Project survey area). The proposed Project location is illustrated on Figure 1.

The purpose of the field survey was to assess whether wetlands and other “waters of the United States (U.S.)” exist within the Project survey area. Secondly, land uses were recorded 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 rare, threatened and endangered species habitat potentially present within the Project survey area to avoid or minimize impacts during construction activities.

## 2.0 METHODOLOGY

Prior to conducting field surveys, digital and published county U.S. Department of Agriculture (USDA) 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 June 2019, AECOM ecologists walked the Project survey area to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter capable Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was then reviewed and edited for accuracy. Land uses observed within the Project survey area 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.

### 2.1 WETLAND DELINEATION

The Project survey area 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 *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 placed 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 soils identification, geomorphologic assessment of hydrology, identification of vegetative 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 an absolute 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 degrees Fahrenheit (°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 percent probability) date of the last and first 28° 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 that in an average year, this period lasts from April 14 to October 25, or 194 days. 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, 2012).

### 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), 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: Midwest Region* (Lichvar et al, 2016), which encompasses the area of the Project survey area. During the dominance test an area is determined to have hydrophytic vegetation when, under normal circumstances, more than 50 percent 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 50 percent or more 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, 2012).

### 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). There are five main classes of wetlands and deepwater habitats. They include: marine, estuarine, riverine, lacustrine, and palustrine. Marine and estuarine wetlands are not found in this area of the U.S. As the Project area did not contain any USGS-mapped lakes, it is unlikely that lacustrine type wetlands would be identified. The identified wetlands within the survey area were classified as freshwater, Palustrine systems, which includes non-tidal wetlands dominated by trees, shrubs, or emergents. The possible 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 of 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.

For some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation is listed.

#### **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 the Clean Water Act Section 401 Certification. Wetlands are scored based on hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under the ORAM 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, 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 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 CROSSINGS**

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 Clean Water Act requires 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 performed using one of two methods: 1) OEPA's Methods for Assessing Habitat in Flowing Waters using OEPA's *Qualitative Habitat Evaluation Index* (Rankin, 2006) or 2) 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 mile<sup>2</sup>, if natural pools are greater than 15.7 in (40 cm), 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 streams (H are those with a watershed area less than or equal to 20 mile<sup>2</sup>) versus larger streams (L are those with a watershed area greater than 20 mile<sup>2</sup>). 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 quadrangles 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 mile<sup>2</sup>, and a maximum depth of water pools equal to or less than 15.75 inches” (OEPA, 2012).

Headwater streams are scored based on 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 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 areas within the Project survey area. The first phase of the review involved a review of online lists of federally and state-listed species. In addition to the review of available lists, 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 technical assistance on the Project. Agency-identified species and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys as part of the second phase of assessing rare, threatened, and endangered species. Land uses observed by the Project survey area 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.

### 3.0 RESULTS

Within the Project survey area, AECOM delineated three wetlands and two streams. No ponds were identified during the field survey. These features are discussed in detail in the following sections.

#### 3.1 WETLAND DELINEATION

##### 3.1.1 Preliminary Soils Evaluation

Soils in the delineated wetland were observed and documented as part of the delineation methodology. According to the USDA NRCS Web Soil Survey of Licking County, Ohio (USDA NRCS, 2017), and the USDA NRCS Hydric Soils Lists of Ohio, five soil series are mapped within the Project survey area (USDA NRCS 2017). Of these five soil series, one soil map unit is listed as hydric. Table 1 provides a detailed overview of all soil series and soil map units within the Project survey area. Soil map units located within the Project survey area are shown on Figure 2.

**TABLE 1**  
**SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE BABBITT STATION EXPANSION PROJECT SURVEY AREA**

| Soil Series | Symbol | Map Unit Description  | Topographic Setting           | Hydric | Hydric Component (%)                         |
|-------------|--------|---|-------------------------------|--------|--|
| Amanda      | AmD2   | Amanda silt loam, 12 to 18 percent slopes                         | Valleys on till plains        | No     | N/A  |
| Bennington  | BeB    | Bennington silt loam, 2 to 6 percent slopes                       | Ground moraines               | No     | Pewamo, low carbonate till (3%), Condit (3%) |
| Centerburg  | Cen1B1 | Centerburg silt loam, 2 to 6 percent slopes                       | End moraines, ground moraines | No     | Condit (4%), Marengo (3%)                    |
|             | Cen1C2 | Centerburg silt loam, 6 to 12 percent slopes, eroded              | Ground moraines, end moraines | No     | Condit (4%)                                  |
| Pewamo      | Pe     | Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes | Depressions, drainageways     | Yes    | Pewamo (85%), Condit (9%)                    |
| Shoals      | Sh     | Shoals silt loam, 0 to 2 percent slopes, occasionally flooded     | Floodplains                   | No     | Sloan (8%)                                   |

[USDA NRCS. 2017. Soil Survey Geographic \(SSURGO\) Database. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm](https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

[USDA NRCS. 2017. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/)

##### 3.1.2 National Wetland Inventory Map Review

National Wetland Inventory 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. Additionally, small wetland are often not identified due to the limitations of aerial photograph interpretation. 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.

According to the NWI maps of the Jersey, Ohio quadrangle, the Project survey area contains one mapped NWI wetland. The NWI wetland was identified as a riverine, unknown perennial, unconsolidated bottom, permanently flooded wetland (R5UBH). The location of the NWI mapped wetland is shown on Figure 2.

### 3.1.3 Delineated Wetlands

During the field survey, AECOM identified a total of three wetlands, ranging in size from 0.13 to 0.28 acres, within the Project survey area. Some wetland boundaries extend beyond the Project survey area, but only what was identified within the Project survey area was assessed. The three wetlands within the Project survey area are of two different wetland habitat types: two PEM wetlands and one PFO wetland. See Table 2 for a summary of the delineated wetlands within the Project survey area.

Additionally, wetlands were split where an obvious break between Cowardin wetland types occurred. This split results in each wetland section being assessed independently; however, the split wetland sections are recognized as components of a larger wetland complex.

The locations and approximate extent of the wetlands identified within the Project survey area are shown on Figure 3. Completed USACE and ORAM wetland delineation forms are provided in Appendix A and B, respectively. Color photographs taken of the wetlands are provided in Appendix D.

**TABLE 2  
DELINEATED WETLANDS WITHIN THE BABBITT STATION EXPANSION PROJECT SURVEY AREA**

| Wetland Name             | Latitude  | Longitude  | Cowardin Wetland Type <sup>a</sup> | ORAM Score | ORAM Category | Acreage within Project Survey Area |
|--------------------------|-----------|------------|------------------------------------|------------|---------------|------------------------------------|
| Wetland 01               | 40.074840 | -82.734812 | PFO                                | 21         | Category 1    | 0.13                               |
| Wetland 02               | 40.075386 | -82.735953 | PEM                                | 20         | Category 1    | 0.28                               |
| Wetland 03               | 40.074552 | -82.735646 | PEM                                | 19         | Category 1    | 0.18                               |
| <b>Total: 3 Wetlands</b> |           |            |                                    |            |               | <b>0.59</b>                        |

Cowardin Wetland Type<sup>a</sup>: PEM = palustrine emergent, PFO = palustrine forested, PSS = palustrine scrub/shrub  
Linear Feet Crossed by Centerline (feet)<sup>b</sup>:

## 3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project survey area, all three wetlands are Category 1 wetlands. No Category 2 or Category 3 wetlands were observed during the field surveys. Wetland 03 received the lowest ORAM score, 19, while Wetland 01 had the highest score, 21. A breakdown of ORAM scores can be found in Table 2 and Table 3. Completed ORAM forms are provided in Appendix B and photographs are provided in Appendix D.

**TABLE 3  
SUMMARY OF DELINEATED WETLANDS WITHIN THE BABBITT STATION EXPANSION PROJECT SURVEY AREA**

| Cowardin Wetland Type <sup>a</sup> | ORAM Category 1 | ORAM Category 2 | ORAM Category 3 | Number of Wetlands | Acreage within Proposed Maintained Right-of-way <sup>c</sup> |
|------------------------------------|-----------------|-----------------|-----------------|--------------------|--|
| PEM                                | 2               | 0               | 0               | 2                  | 0.46   |
| PFO                                | 1               | 0               | 0               | 1                  | 0.13   |
| <b>Total</b>                       | <b>3</b>        | <b>0</b>        | <b>0</b>        | <b>3</b>           | <b>0.59</b>  |

Cowardin Wetland Type<sup>a</sup>: PEM = palustrine emergent, PFO = palustrine forested

### **Category 1 Wetlands**

The three Category 1 wetlands delineated within the Project survey area include two PEM wetlands and one PFO wetland. The lowest scoring Category 1 wetland was Wetland 03 with a score of 19, while Wetlands 01 had the highest score, 21. The wetlands exhibited very narrow to medium upland buffers and a range of very low (2<sup>nd</sup> growth or older forest) to high intensive surrounding land use (agricultural). The wetlands also exhibited poor to fair plant community development with a sparse to extensive percentage of invasive species, and characteristically had habitat and hydrology in the early stages of recovering from previous manipulation due to mowing, clear cutting, nutrient enrichment, and other disturbances.

### **Category 2 Wetlands**

No Category 2 wetlands were identified within the Project survey area.

### **Category 3 Wetlands**

No Category 3 wetlands were identified within the Project survey area.

## 3.2 STREAM CROSSINGS

AECOM identified two streams, totaling 1,798 linear feet, within the Project survey area, as listed in Table 2. The streams were comprised of one intermittent stream and one perennial stream. The locations of streams identified within the survey area are shown on Figure 3.

Stream 01 was evaluated using HHEI methodology while Stream 02 was evaluated using QHEI methodology. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

The OEPA has established water use designation for streams throughout Ohio as outlined in the Ohio Administrative Code (OAC), OAC-3745-1-07. Water use designations within the Muskingum River drainage basin, of which this project survey area falls, are regulated under OAC-3745-1-24. Stream 02 (South Fork Licking River) was identified to have a State of Ohio aquatic use designation of Good Warmwater habitat (WWH). Stream 01 does not have an established use designation but was assigned a narrative rating of Modified Class 2.

AECOM has preliminarily determined that all assessed streams within the Project survey area 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 4**  
**STREAMS IDENTIFIED WITHIN THE BABBITT STATION EXPANSION PROJECT SURVEY AREA**

| Stream Report Name       | Latitude  | Longitude  | Flow Regime  | Bankfull Width (feet) | Maximum Pool Depth (in) | Form <sup>a</sup> | Score | Class/ Narrative Rating | Length (feet) within Project Survey Area |
|--------------------------|-----------|------------|--------------|-----------------------|-------------------------|-------------------|-------|-------------------------|--|
| Stream 01                | 40.07492  | -82.734931 | Intermittent | 3                     | 6                       | HHEI              | 51    | Modified Class 2        | 313                                      |
| Stream 02                | 40.074483 | -82.736840 | Perennial    | 15                    | 24                      | QHEI              | 63.5  | Good Warmwater          | 1,485                                    |
| <b>Totals: 2 Streams</b> |           |            |              |                       |                         |                   |       |                         | <b>1,798</b>                             |

### 3.2.1 Qualitative Habitat Evaluation Index

One stream within the Project survey area, totaling 1,485 linear feet, was assessed using the QHEI methodology. The form for the stream assessed using the QHEI methodology is provided in Appendix A.

**Good Warmwater Habitat Streams** – Stream 02 (South Fork Licking River) was classified as a perennial, Good Warmwater habitat stream. This stream received a QHEI score of 63.5 and had a total length of 1,485 linear feet within the survey area. The substrates of the stream primarily consisted of cobble and gravel with lesser amounts of bedrock, silt, and sand. The stream generally showed evidence of little to moderate bank erosion, good development, low sinuosity, and the presence of in-stream cover such as: overhanging vegetation, rootwads, and logs/woody debris. The maximum pool depth was 24 inches and the average bankfull width was 15 feet.

### 3.2.2 Primary Headwater Habitat Evaluation Index

Stream 01 was classified as an intermittent, Modified Class 2 headwater stream. This stream measures at 313 linear feet within the Project survey area. The completed HHEI form for this stream is provided in Appendix A. Color photographs are provided in Appendix B.

**Modified Class 2 Headwater Streams** – The Modified Class 2 headwater stream, totaling 313 linear feet, with a score of 51, was identified during the field investigation. This intermittent stream had substrates generally consisting of cobble and silt with lesser amounts of gravel, sand, leaf pack/woody debris, and artificial material. The stream showed evidence of stream channel modification (e.g., channelization, vehicle crossings, culverting, etc.) that resulted in all three streams receiving a Modified designation. The maximum pool depth was six inches and the average bankfull width three feet.

## 3.3 PONDS

No ponds were identified within the Project survey area.

## 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 in June 2019. Portions of the Project survey area were identified as agricultural land, young to mature woodland forests, pasture/hay fields, old field areas, stream/wetland areas, and urban areas. A variety of woody and herbaceous lands, as described below in Table 5, are present within the Project survey area. 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 imagery provided on Figure 4.



**TABLE 5  
VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA**

| Vegetative Community  | Description  | Approximate Acreage Within the Project Survey Area | Approximate Percentage within the Project Survey Area |
|-----------------------|--|--|---|
| Agricultural Land     | Agricultural land consisting of soybean and corn fields were present along the Project survey area. The agricultural land contains row crops and is not used for pasture or hay fields.  | 3  | 5%  |
| 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 areas and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.  | 44   | 75%   |
| Pasture/Hay Field     | Pasture for cattle and hay fields were observed in various portions of the study area. Pasture areas within the study areas and adjacent areas are frequently mowed and grazed areas of grasses and forbs.   | 3  | 5%  |
| Streams/Wetlands      | Streams and wetlands were observed both within and beyond the survey area for the Project.   | 4  | 7%  |
| Successional Woodland | Successional mixed hardwood woodlands are present along the Project survey corridor. Woody species dominating these areas included American Beech ( <i>Fagus grandifolia</i> ), red oak ( <i>Quercus rubra</i> ), white oak ( <i>Quercus alba</i> ), sugar maple ( <i>Acer saccharum</i> ), red maple ( <i>Acer rubrum</i> ), box elder ( <i>Acer negundo</i> ), shagbark hickory ( <i>Carya ovata</i> ), and black cherry ( <i>Prunus serotina</i> ). The dominant shrub-layer species included spicebush ( <i>Lindera benzoin</i> ), poison ivy ( <i>Toxicodendron radicans</i> ), honeysuckle ( <i>Lonicera</i> sp.), and blackberry ( <i>Rubus occidentalis</i> ). | 1  | 1%  |
| Urban                 | Urban areas are areas developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.   | 4  | 7%  |
| <b>Totals:</b>        |  | <b>59</b>  | <b>100%</b>   |

## 3.5 RARE, THREATENED AND ENDANGERED SPECIES

### 3.4.2 AGENCY CONSULTATION

AECOM conducted a rare, threatened, and endangered species review for areas within the Project survey area. A summary of the agency coordination is provided below. Correspondence letters from the USFWS and ODNR are included as Appendix E. Table 6 provides a list of these species of concern identified in the Project area during the rare, threatened, and endangered species review.

**TABLE 6**  
**ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA**

| Common Name<br>(Scientific Name)                             | State Status | Federal Status | Habitat Description  | Potential Habitat Observed in the Project Survey Area | Impact Assessment  | Agency Comments   |
|--|--------------|----------------|--|---|--|---|
| <b>Mammals</b>   |              |                |  |   |  |   |
| Indiana bat<br>( <i>Myotis sodalis</i> )                     | Endangered   | Endangered     | Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory ( <i>Carya</i> spp.), oak ( <i>Quercus</i> spp.), ash ( <i>Fraxinus</i> spp.), birch ( <i>Betula</i> spp.), and elm ( <i>Ulmus</i> spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.   | Yes   | Some potentially suitable habitat is present outside the Project area (woodlands). | USFWS commented that due to the project type, size, location, and the proposed implementation of seasonal tree cutting between October 1 and March 31, adverse effects are not anticipated. ODNR requested that suitable Indiana bat habitat should be conserved or cut between October 1 and March 31. |
| Northern long-eared bat<br>( <i>Myotis septentrionalis</i> ) | Threatened   | Threatened     | Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory ( <i>Carya</i> spp.), oak ( <i>Quercus</i> spp.), ash ( <i>Fraxinus</i> spp.), birch ( <i>Betula</i> spp.), and elm ( <i>Ulmus</i> spp.) have been found to be utilized by northern long-eared bats. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Northern long-eared bats have also been found, albeit rarely, roosting in structures like barns and sheds. | Yes   | Some potentially suitable habitat is present outside the Project area (woodlands). | USFWS commented that due to the project type, size, location, and the proposed implementation of seasonal tree cutting between October 1 and March 31, adverse effects are not anticipated to the Indiana bat or the northern long-eared bat. ODNR did not comment on this species                      |

**TABLE 6**  
**ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA**

| Common Name<br>(Scientific Name)                     | State Status | Federal Status | Habitat Description  | Potential Habitat Observed in the Project Survey Area | Impact Assessment   | Agency Comments   |
|--|--------------|----------------|--|---|---|---|
| <b>Fish</b>  |              |                |  |   |   |   |
| Lake chubsucker<br>( <i>Erimyzon sucetta</i> )       | Threatened   | None           | This fish is found in natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters  | Yes   | No in-water work is planned as part of the Project. No impacts to fish species and their habitat are anticipated. | ODNR recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species. |
| <b>Mussel</b>  |              |                |  |   |   |   |
| Fawnsfoot<br>( <i>Truncilla donaciformis</i> )       | Threatened   | None           | This mussel species prefers firm gravel or sand substrates primarily in small to large rivers and lakes  | Yes   | No in-water work is planned as part of the Project. No impacts to this species and their habitat are anticipated. | ODNR stated that due to the location and that there is no in-water work proposed in a perennial stream of sufficient size, the Project is not likely to impact these species.   |
| <b>Reptile</b>                                       |              |                |  |   |   |   |
| Eastern massasauga<br>( <i>Sistrurus catenatus</i> ) | Endangered   | Threatened     | This snake species prefers wet prairies, sedge meadows, and early successional fields. Preferred wetland habitats include marshes and fens. They prefer broad-leaved plants, emergent, and sedges. | No  | No suitable habitat is located within the Project survey area.  | ODNR stated that due to the location, and the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this species.   |

***ODNR Coordination***

On May 6, 2019, the ODNR Office of Real Estate Environmental Review Section provided comments on the Project based on an inter-disciplinary review. The Ohio Natural Heritage Database (ONHD), Division of Wildlife (DOW), and the Division of Water Resources (DWR) provided comments regarding their respective regulatory authorities. ONHD indicated that there are no records at or within a one-mile radius of the Project survey area. There are also no records of endangered or threatened plants or animals within the Project area itself.

The ODNR Division of Wildlife (DOW) recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The DOW noted that the Project is within the range of the Indiana bat, a state endangered species and federally endangered species. If suitable habitat occurs within the Project area and the trees must be cut, the DOW recommends cutting occur between October 1 to March 31. This Project is not likely to impact this species if no tree removal is proposed.

The DOW noted that the Project is within the range of the fawnsfoot, a state-threatened mussel; and the lake chubsucker, a state-threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. The DOW states that if no in-water work is proposed a perennial stream, this project is not likely to impact these or other aquatic species.

The DOW noted that the Project is within the range of the eastern massasauga, a state-endangered and federally threatened snake species. This species uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, and the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this species.

**USFWS Coordination –**

Coordination with the USFWS was initiated during the planning stages of the Project to obtain technical assistance in regard to federally listed species that may occur within the project vicinity. In a letter dated April 5, 2019, the USFWS indicated that there are no Federal wildlife refuges, wilderness areas, or critical habitat within the vicinity of the Project.

The USFWS noted that the Project lies within the range of the federally endangered Indiana bat, and the federally threatened northern long-eared bat. USFWS commented that due to the project type, size, location, and the proposed implementation of seasonal tree cutting between October 1 and March 31,

adverse effects are not anticipated to the Indiana bat or the northern long-eared bat. No other species were identified by the USFWS.

#### 4.0 SUMMARY

The ecological survey of the Project survey area identified a total of three wetlands and two streams. The wetlands within the Project survey area are of two different wetland habitat types: one PEM wetland and one PFO wetland. Both wetlands were identified as Category 1 wetlands. No Category 2 or Category 3 wetlands were identified within the Project survey area.

The two streams identified within the Project survey area include one intermittent stream and one perennial stream. One stream was assessed using the HHEI methodology (drainage area less than 1 mile<sup>2</sup>) and one stream using the QHEI methodology (drainage area greater than 1 mile<sup>2</sup>). This QHEI-assessed stream was also identified as having a water use designation by the OEPA as a "Warmwater Habitat" stream.

A total of five state and/or federally protected species were listed by the ODNR and USFWS including the following: Indiana bat, northern long-eared bat, fawnsfoot, lake chubsucker, and the eastern massasauga. Based on agency responses and no in-water work is proposed a perennial stream, this project is not likely to impact the fawnsfoot or lake chubsucker. No habitat was found suitable for the eastern Massasauga, thus no impacts are expected.

Based on general observations during the ecology survey, the Project survey area contains potential summer habitat for the Indiana bat and the northern long-eared bat. The agencies, however, do not anticipate impacts to the species due to the project type, size, location, and proposed implementation of seasonal tree cutting (between October 1st and March 31st) to avoid impacts to these bat species.

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 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.

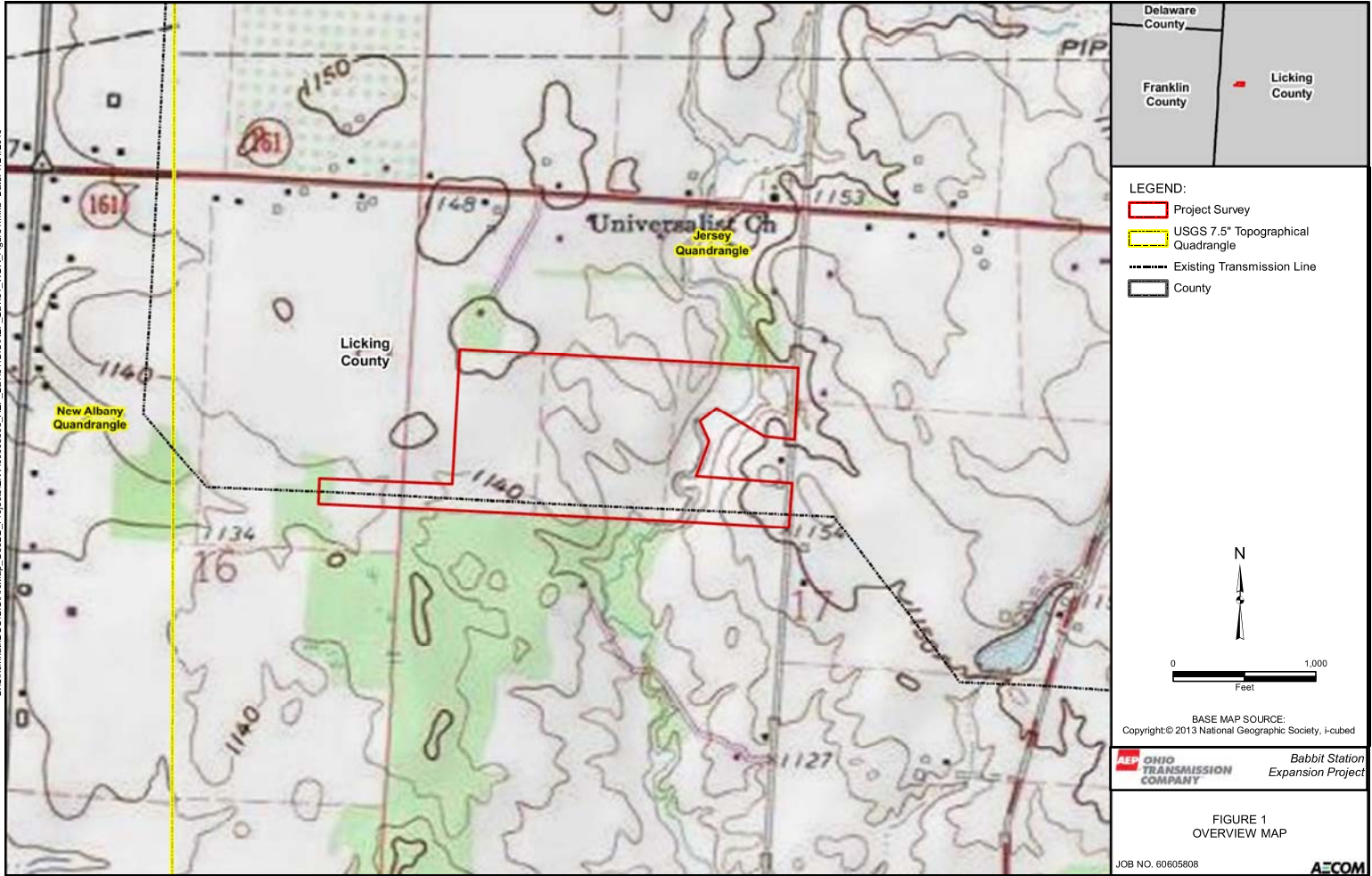
The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due 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. Final jurisdictional determination of Waters of the U.S. lies with the USACE.

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Summary: Notice Letter of Notification Application for the Kirk-Jug Street 345 kV Extension Project PART 1 electronically filed by Tanner Wolfram on behalf of AEP Ohio Transmission Company, Inc.