

Letter of Notification for the Hillsboro- Millbrook Park 138 kV Line Rebuild Project



An **AEP** Company

BOUNDLESS ENERGY™

PUCO Case No. 21-0268-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.

May 11, 2021

Letter of Notification

AEP Ohio Transmission Company, Inc. Hillsboro-Millbrook Park 138 kV Line Rebuild Project

4906-6-05

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

4906-6-05(B) General Information

B(1) Project Description

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

The Company proposes to construct the Hillsboro-Millbrook Park 138 kilovolt (kV) Line Rebuild Project in Highland, Adams, Pike and Scioto counties, Ohio. The Project consists of rebuilding approximately 52 miles of the existing wood H-frame 138 kV line within existing right-of-way (ROW), using mainly steel H-frame structures, and involves the following components starting at Hillsboro Station:

- Rebuilding approximately 4.3 miles of the existing Portsmouth-Trenton No. 2 138 kV transmission line between the Hillsboro Station and the Seaman-Highland 138 kV line crossing.
- After the transmission line crosses over the Seaman-Highland 138 kV line, a 6-wire configuration exists; specifically, the Portsmouth-Trenton No. 1 and No. 2 lines run parallel to a point just outside the South Lucasville Station and are operating as a single circuit (approximately 39 miles). The Company is proposing to rebuild the two existing 6-wired (electrically tied together) lines onto the southern alignment as one single circuit 138 kV line utilizing larger conductor.
- Heading south out of South Lucasville Station, the Portsmouth Trenton No. 1 and No 2. 138 kV lines operate as 2 single circuit parallel lines to the Millbrook Park Station (approximately 8.6 miles). The Company is proposing to rebuild the two existing single circuit lines onto the western line as one double circuit line to the Millbrook Park Station. One circuit will enter the North Portsmouth Station, approximately 5 miles southeast of South Lucasville Station, and then continue south to the Millbrook Park Station.

In addition, the Project involves replacing the Sinking Springs Switch structure in Sinking Springs, OH, located approximately 13 miles southwest of the Hillsboro Station.

All of the rebuilt transmission line assets will be owned by the Company with the exception of seven existing towers or pole structures, which will not be replaced, and are owned by Ohio Power Company.

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The Project will be constructed within the existing 100-foot wide transmission line ROW. The location of the Project is shown on a USGS topographic map as Exhibit 1 in Appendix A.

The Project meets the requirements for a LON because it is within the types of projects defined by Item (2)(b) of 4906-1-01 **Appendix A Application Requirement Matrix For Electric Power Transmission Lines** as it is replacing structures with a different type of structure for less than two miles. Item (2)(b) of 4906-1-01 **Appendix A** states:

(2) *Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure, for a distance of:*

(b) *More than two miles.*

The Project has been assigned PUCO Case No. 21-0268-EL-BLN.

B(2) Statement of Need

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

The Project involves rebuilding approximately 52 miles of 138 kV line between Ohio Power Company's Hillsboro and Millbrook Park stations, as a single circuit line. Currently, the Hillsboro-Millbrook Park 138 kV circuit is configured as two separate wood pole lines, six wired together. Fifty percent of the structures are original vintage from 1943 and the remaining structures were replaced between 1960-1980. The majority (93%) of the original conductor built in 1944 and 1948 is still in service. This line has significant asset renewal concerns, which includes 1342 open conditions on the line. These conditions include numerous pole, shielding, and grounding issues throughout the line.

South Central Power's Sinking Springs delivery point is served from this line and has experienced over 3.5 million Customer Minutes of Interruption over the past five years. Sinking Springs serves approximately 1,500 customers with 4.6 MVA of peak load. Retiring the existing line is not viable as this line serves as an interconnection to Dayton Power & Light ("DPL") zone and provides service to DP&L and Duke Energy Ohio ("Duke"). In addition, there have also been numerous IPP requests to interconnect in the area. Without the Project, customer minutes of interruptions will continue to get worse as the line asset deteriorates.

The need and solution for this project was presented to PJM on 5/20/2019 and 2/21/2020, then subsequently assigned a PJM # of s2201. This Project was included in the Company's most recent Long-Term Forecast Report on page 75 of 87.

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 Project is located in Highland, Adams, Pike and Scioto counties, Ohio. The Project begins at the Hillsboro Station located just northwest of County Road 7 in Highland County (near 39.173413 latitude, -83.677805 longitude) and extends 52 miles southeast terminating at the Millbrook Park Station located south of County Route 52 in Scioto County (near 38.753218 latitude, -82.928937 longitude). Exhibit 1 in Appendix A shows the proposed Project relative to existing transmission facilities on a USGS topographic quadrangle map. Exhibit 2 in Appendix A identifies the Project components on aerial imagery.

B(4) Alternatives Considered

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

The Project is proposing to rebuild on or near the centerline of the existing transmission line and within existing ROW. Abandoning the existing ROW for a new greenfield route is neither practical nor necessary for this Project. As such, no other alternatives were considered for the Project. Any other alternative would likely add additional length to the Project, and likely more (or new) land use and environmental impacts for a greenfield-based route alternative without any commensurate benefit. Slight line shifts will be necessary where residences or commercial buildings currently exist in close proximity to the existing line. However, these shifts are minor and do not impact any additional wetlands, streams, or known cultural resources and are located within existing ROW. Therefore, this Project represents the most suitable location and is the most appropriate solution for meeting the Project needs.

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 Ohio Revised Code ("OAC") Section 4906-6-08(A)(1-6). Further, the Company 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 ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project.

B(6) Construction Schedule

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

Construction of the Project is planned to commence in the Fall of 2021 with a proposed in-service of October 2025.

B(7) Area Map

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

Exhibit 1 in Appendix A identifies the location of the Project area on a USGS 1:24,000 quadrangle map. Exhibit 2 in Appendix A consists of an aerial imagery map from October 2019 of the Project area.

To visit the Project starting point from Columbus, take I-70 W/I-71 S. Follow I-71 S to OH-72 S in Jefferson Township. Take exit 58 from I-71 S. Continue on OH-72 S. Take OH-729 to Mad River Road in New Market Township. Turn left onto OH-72 S, then continue for 10.1 miles. Turn right onto OH-729 S, then continue for 7.6 miles. Turn left onto OH-73 E, then continue for 3.1 miles. Turn right onto Mad River Road, then continue for 5.0 miles. Continue onto OH-124 E for 0.4 miles then turn right onto Mad River Road. You will arrive at the start of the Project at Hillsboro Station in 4.7 miles.

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 Project will be constructed within the Company's existing ROW, however, additional supplemental easements will be necessary for minor line shifts from the existing centerline. Appendix C provides a table of property parcel numbers with an indication as to whether the easement/option necessary to construct and operate the facility has been obtained.

B(9) Technical Features

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

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

The Project is estimated to include the following:

Voltage: 138kV
Conductors: 1033.5 kcmil 54/7 Strands CURLEW ACSR
Static Wire: 7#8 Alumoweld & AFL OPGW 0.646" with up to 48 Fibers
Insulators: Polymer
ROW Width: 100 feet, some locations will require additional ROW ranging from 110-230 feet due to long span blowout
Structure Type: Ten (10) double circuit, steel monopole dead ends
Thirty-five (35), double circuit, steel monopole suspension
Fourteen (14), single circuit, steel monopole delta dead-end
One (1), single circuit, steel monopole switch
Two (2), single circuit, steel monopole vertical dead-end
Four (4), single circuit, steel monopole braced post
Three (3), double circuit, steel 2-pole dead-end
One (1), single circuit, steel 3-pole dead-end
Nine (9), single circuit, steel 3-pole horizontal dead-end with guys
One (1), single circuit, steel 3-pole, horizontal suspension with guys
One (1), single circuit, steel H-frame heavy suspension with guys
240, single circuit, steel H-frame suspension
Seven (7), single circuit, steel H-frame light suspension with guys
Two (2), single circuit, steel H-frame medium suspension

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.

Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB requirements. Normal Maximum Loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future.

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EMF levels were computed one meter above ground under the line and at the ROW edges (50/50 feet, left/right, of centerline).

Results calculated below use EPRI's EMF Workstation 2015 software.

Hillsboro-Millbrook Park 138 kV Line				
Condition	Hillsboro-Millbrook Park line Load (A)	Ground Clearance (feet)	Electric Field (kV/m)*	Magnetic Field (mG)*
(1) Normal Max. Loading [^]	154.28	30.28	0.64/1.35/0.64	8.67/28.84/8.67
(2) Emergency Line Loading ^{^^}	167.37	24.58	0.66/1.840/0.66	10.51/44.76/10.51
(3) Winter Conductor Rating ^{^^^}	1568.89	30.28	0.64/1.349/0.64	88.12/293.3/88.12

*EMF levels (left ROW edge/maximum/right ROW edge) computed one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and 1.0 P.U. Voltages. ROW width is 50 feet (left) and 50 feet (right) of centerline, respectively.

[^]Peak line flow expected with all system facilities in service.

^{^^}Maximum flow during a critical system contingency

^{^^^}Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions.

For power-frequency EMF, IEEE Standard C95.6TM-2002 recommends the following limits:

	General Public	Controlled Environment
	-----	-----
Electric Field Limit (kV/m)	5.0	20.0
Magnetic Field Limit (mG)	9040.0	27,100.0

The above EMF levels are well within the limits specified in IEEE Standard C95.6TM-2002. Those limits have been established to "prevent harmful effects in human beings exposed to electromagnetic fields in the frequency range of 0-3 kHz."

B(9)(c) Project Costs

The estimated capital cost of the project.

The capital cost estimate for the Project, which is comprised of applicable tangible and capital costs, is approximately \$153,000,000, using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company's FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

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.

The Project is located in Highland, Adams, Pike and Scioto counties, Ohio. The cities crossed include New Boston and Portsmouth. The townships crossed include Franklin, Brush Creek, Jackson, Liberty, Marshall, New Market, Washington, Camp Creek, Mifflin, Sunfish, Clay, Jefferson, Morgan, Porter, Rarden, Rush, and Valley. Land use and natural communities observed within the Project area include agricultural land, industrial, residential, old field, upland forest, existing roadways, upland scrub shrub, palustrine emergent (PEM) wetlands, palustrine scrub-shrub (PSS) wetlands, and palustrine forested wetlands (PFO).

No places of worship or airports were identified within 1,000 feet of the project alignment. There are four (4) schools and one (1) cemetery located within 1,000 feet of the Project alignment. In addition, there are 10 residences identified within 100 feet of the Project's centerline alignment.

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 Adams, Highland and Scioto County Auditor's Office provided a list of parcels registered as Agricultural District Land in March 2021. The proposed Project intersects with four (4) parcels identified as Agricultural District Land parcels. These four parcels account for approximately 15.3 acres within the Project area. The Pike County Auditor's Office was also contacted to obtain information on Agricultural District Lands. To date, the Pike County Auditor's Office has not responded to the request for information, however, the Company will provide information once it has been received.

A total of approximately 204 acres of agricultural land is located within the 100-foot ROW corridor where construction activities are planned. This general agricultural land includes a mix of cropland, fallow fields, and pastures.

B(10)(c) Archaeological and Cultural Resources

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

A Phase I Archaeological Investigation was conducted for the Project and the report was provided to the Ohio State Historic Preservation Office (SHPO) for consultation. SHPO correspondence was provided in October 2020, see Appendix D. The SHPO concurred with the report's conclusions

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including avoidance or additional investigations of two archaeological sites, Site 33HI0219 and Site 33SC0658.

The Company's consultant conducted additional investigations at the sites and provide a report, *Phase II Archaeological Assessment at Site 33HI0219 within the Proposed Hillsboro-Millbrook Park 138kV Rebuild Project in Highland County, Ohio*, to the SHPO for review. SHPO responded in November 25, 2020 and concurred that Site 33HI0219 is recommended not eligible for listing in the National Register of Historic Places (NRHP). The second site, Site 33SC0658, is planned to be avoided by the Project.

Additionally, the Company's consultant conducted a review and field survey of historic structure resources along the Project. The report, *History/Architecture Investigations for the 83.7 km (52 mi) Hillsboro-Millbrook 138kV Rebuild Project in Highland, Adams, Pike, and Scioto Counties, Ohio*, was reviewed by the SHPO and their comment letter was received on October 22, 2020. The SHPO concurred that the Project as proposed will have no adverse effect on the identified historic properties.

A copy of the SHPO's correspondence letters is provided in Appendix D.

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.

Three (3) separate Notice of Intent's will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000004, and the Company will implement and maintain best management practices (BMPs), as outlined in the project-specific Storm Water Pollution Prevention Plan (SWPPP), to minimize erosion and control sediment to protect surface water quality during storm events.

The Company's consultant completed a wetland delineation and stream identification field review of the existing and planned ROW for the Project (Appendix E). A total of 72 wetlands, 219 streams, and 14 ponds were delineated within the environmental survey corridor. The identified wetlands and streams are located within or adjacent to the planned transmission line ROW and are proposed to be aerially spanned by the Project. However, temporary impacts to wetlands will be necessary for the Project, which will require a Section 404 permit and a Pre-Construction Notification will be filed with the U.S. Army Corps of Engineers (USACE) Huntington District. The Project will also require a Section 10 permit from the USACE for the Scioto River crossing.

The Project crosses the Federal Emergency Management Agency (FEMA) 100-year floodplains of seven (7) waterbodies including: Elm Run, Elk Run, Middle Fork Ohio Brush Creek, Baker Fork, Scioto River, Candy Run, and Munn Run. In addition, the Project crosses one (1) mapped FEMA floodway along the Scioto River. These resources are shown on Figure 2-1 to 2-110 in Appendix E. The Company will obtain floodplain permits from the Counties for the construction of any structures within these areas.

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

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

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

Coordination with Ohio Department of Natural Resources-Division of Wildlife (ODNR-DOW) was initiated on September 9, 2019 to obtain Environmental Review and Ohio Natural Heritage Database records within a 1-mile buffer area around the project. ODNR-DOW's response was received on January 22, 2020, see Appendix D. In addition, a consultation request was submitted to the U.S. Fish and Wildlife Service (USFWS) on September 9, 2019 with a response received on December 18, 2019. A copy of the Agency Correspondence letters are provided in Appendix D.

Based on consultation from the USFWS, portions of the southern Scioto County are in Indiana bat hibernaculum buffers and roost tree buffers. The northern section of the line in Highland County is within many capture buffers of male and female Indiana bats (*Myotis sodalis*) and roost trees. Portions of the project are also within capture buffers of northern long-eared bats (*Myotis septentrionalis*). The Company anticipates completing tree clearing during the recommended timeframe (October 1 through March 31), but should implementation of the seasonal tree clearing recommendation not be feasible, proper agency coordination will be conducted. The Company is currently coordinating with the USFWS to provide the requested tree clearing acreages in Scioto and Highland counties.

The endangered rayed bean is a freshwater mussel known to occur in Scioto Brush Creek and the Scioto River, both of which are spanned by the proposed transmission line. The rayed bean (*Villosa fabalis*) prefers substrates of gravel and sand, and they are often associated with, and buried under the roots of, vegetation, including water willow (*Justicia americana*) and water milfoil (*Myriophyllum* sp.). The endangered clubshell (*Pleurobema clava*) and northern riffleshell (*Epioblasma torulosa rangiana*) mussels are also known to occur in the Scioto River. USFWS states that if the project directly or indirectly impacts any of the mussel streams above, they recommend a presence/absence mussel survey. Additionally, if any impact to native riparian vegetation is proposed they recommend further coordination with USFWS. No impacts to the identified mussel species are anticipated as no in-water work is proposed for the Project.

Known populations of Virginia spiraea (*Spiraea virginiana*) occur in Ohio along long-established gravel bars in Scioto Brush Creek in Scioto County. The current alignment occurs in a township where this species is known to occur but does not cross the Scioto Brush Creek in this township. USFWS states that the current transmission line alignment does not impact this species; however, if the project proposes any re-alignments in this area then further coordination with USFWS will be required.

Lastly, the proposed Project also lies within the range of running buffalo clover (*Trifolium stoloniferum*). This species was recently proposed for delisting due to recovery. This species can potentially be found in partially shaded woodlots, mowed areas, and along streams, trails, and ROWs. During coordination with USFWS, no surveys were identified as necessary for the Project.

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Consultation with USFWS is currently ongoing and recommendations for protection or minimization measures for federally listed species potentially present within the Project area have not been provided. The Company will follow up with the USFWS to further define the Project impact area and any minimization or avoidance efforts that are planned to be implemented.

Based on the consultation response from the ODNR, the western 15,000 feet of the Project route, and the portion of the Project route between the Ohio River and the Scioto River, are within the vicinity of Indiana bat records. ODNR stated that if suitable Indiana bat habitat occurs within these project areas, it is recommended that trees be conserved. If trees must be cut or removed, the ODNR recommended cutting to occur between October 1 and March 31. The remainder of the Project route may not have records of Indiana bat, however, is still within the range of Indiana bat. If suitable habitat occurs within the rest of the Project area and trees must be cut, ODNR recommended mist net surveys be conducted for the Indiana bat between June 1 and August 15, prior to any tree cutting. The Project anticipates tree clearing will take place between October 1 and March 31, to adhere to recommendations from USFWS and ODNR.

According to ODNR, the Project must not have an impact on freshwater native mussels within the Project area and per the Ohio Mussel Survey Protocol; all Group 2, 3, and 4 streams require mussel surveys. The ODNR-DOW recommends no in-water work in any perennial stream from April 15 through June 30 to reduce impacts to indigenous species and their habitat. No in-stream work is currently proposed during construction activities and will not directly impact streams crossed by the Project area. Therefore, mussel surveys are not anticipated. Because no in-water work is proposed in any perennial stream within the Project area, the Project is not likely to impact threatened or endangered aquatic species.

The Project is within the range of timber rattlesnake, eastern spadefoot, and mud salamander. ODNR recommends that a DOW approved herpetologist conduct a habitat suitability survey along the Project route to determine if suitable habitat exists for these species. If suitable habitat is determined to be present, ODNR recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by an approved herpetologist. Habitat surveys were conducted for the timber rattlesnake, eastern spadefoot toad, and mud salamander in January 2021. No suitable habitat was identified for the eastern spadefoot toad. However, suitable habitat was identified for the timber rattlesnake and mud salamander. The Project anticipates avoidance of the mud salamander habitat. A minimization and avoidance plan are currently being developed for the timber rattlesnake and coordination with ODNR is ongoing. Once coordination is complete, the Company will provide the results to OPSB.

Two bird species including the lark sparrow and loggerhead shrike are within the range of the Project. If lark sparrow habitat will be impacted, ODNR recommends that construction be avoided in their nesting habitat during the period of May 1 to June 30. If loggerhead shrike habitat is present, construction should be avoided in their nesting habitat during April 1 to August 1. The Company plans to conduct presence/absence surveys for the lark sparrow and loggerhead shrike as needed throughout Project construction in order to avoid impacts to these species. ODNR coordination is ongoing and the results will be provided to OPSB upon completion.

Based on the nature of the proposed project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated. As stated previously, tree

clearing is currently proposed between October 1 and March 31 for the Project in order to reduce impacts to bat species and their habitat. The Company will coordinate with USFWS and ODNR regarding additional construction requirements, if required by these agencies.

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 coordination letter received from the USFWS did not indicate any federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project. The ODNR's response letter also indicated no known unique ecological sites, geologic features, scenic rivers, state wildlife areas, state natural preserves, state or national parks, national forests, or national wildlife refuges within the Project area. The Project alignment does cross Strait Creek Prairie Bluffs Conservation Area and Brush Creek State Forest. However, impacts to these areas are expected to be minimal as the Project will remain in the existing ROW.

The Company's consultant prepared an Ecological Resource Inventory Report which outlines the presence or absence of areas of ecological concern, including but not limited to floodplains, wetlands, waterbodies and wildlife habitats. The Ecological Resource Inventory Report is provided in Appendix E. Wetland delineation, stream identification and general habitat field surveys were completed within the existing ROW from September through October 2019, with follow-up surveys conducted in January 2020 and December 2020. Land use and natural communities that were encountered within the ROW consisted of maintained transmission line ROW, agricultural land, existing roadway, substations, industrial, residential, fallow-fields, upland forest, upland scrub shrub, PEM wetland, PSS wetland, and waterbodies. A total of 72 wetlands, 219 streams, and 14 ponds were delineated within the environmental survey corridor. The Company will utilize erosion and sediment control best management practices to avoid or minimize impacts to natural resources where possible.

Based on the FEMA Flood Insurance Rate Maps (FIRM), the Project crosses FEMA-mapped 100-year floodplains of seven (7) waterbodies including: Elm Run, Elk Run, Middle Fork Ohio Brush Creek, Baker Fork, Scioto River, Candy Run, and Munn Run. In addition, the Project crosses one (1) mapped FEMA Floodway, the Scioto River. These resources are shown on Figure 2-1 to 2-110 in Appendix E.

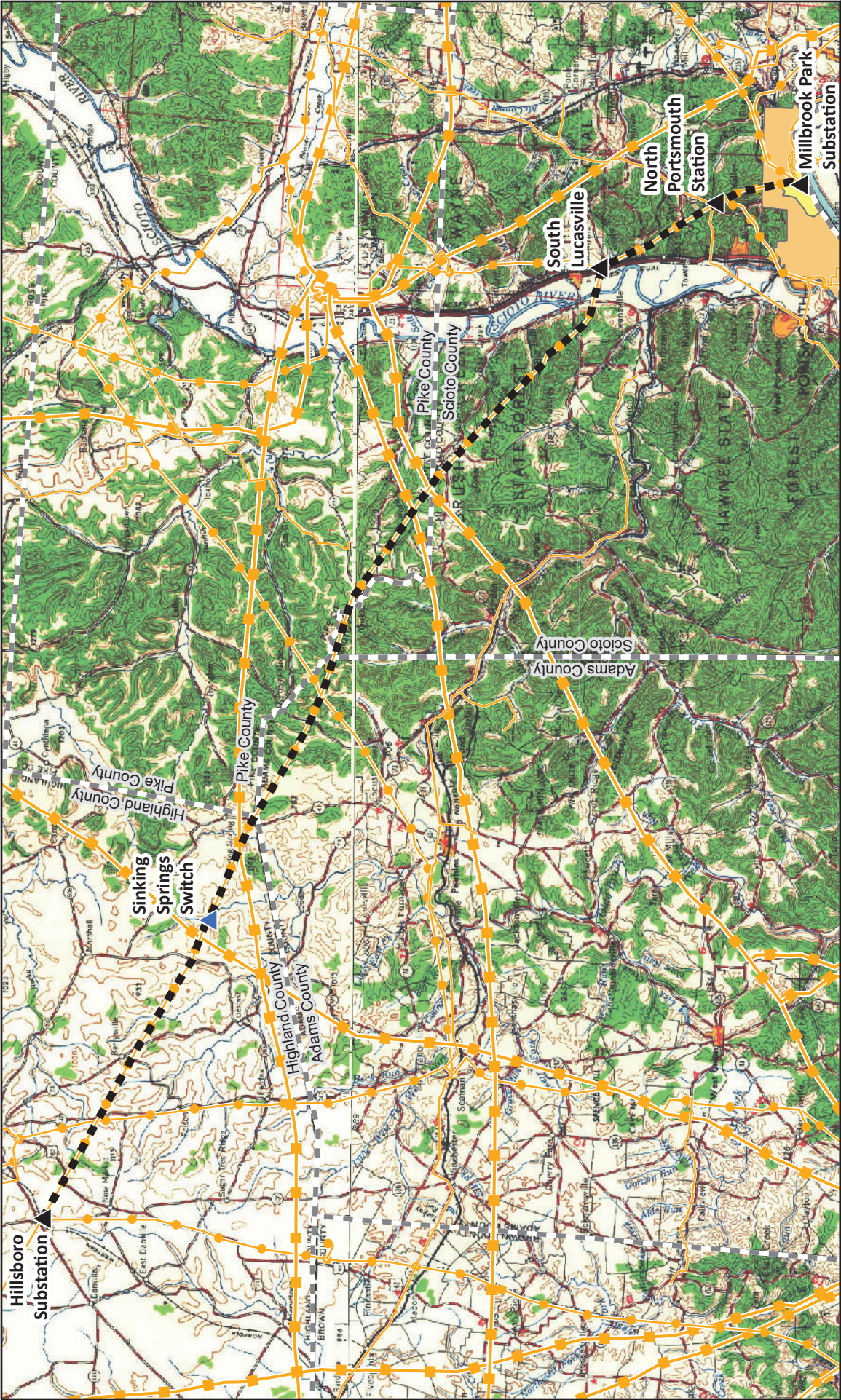
B(10)(g) Unusual Conditions

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.

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138 KV LINE REBUILD PROJECT**

Appendix A Project Maps



Legend

- Existing Substation
- Proposed Switch
- Proposed Route
- Existing Transmission Line
 - Below 69kV
 - 138kV
 - 345kV+

BASEMAP SOURCE

USGS 1:250,000 Topographic Maps

NAD 1983 State Plane Ohio
South FIPS 3402
Scale: 1:340,000

April 14, 2021

LOCATOR MAP

**Exhibit 1
Location Map**

AMERICAN ELECTRIC POWER

Hillsboro to Millbrook Park
138 kV Transmission Line
Rebuild Project

0 2 4 6 8
Miles



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.1 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet	



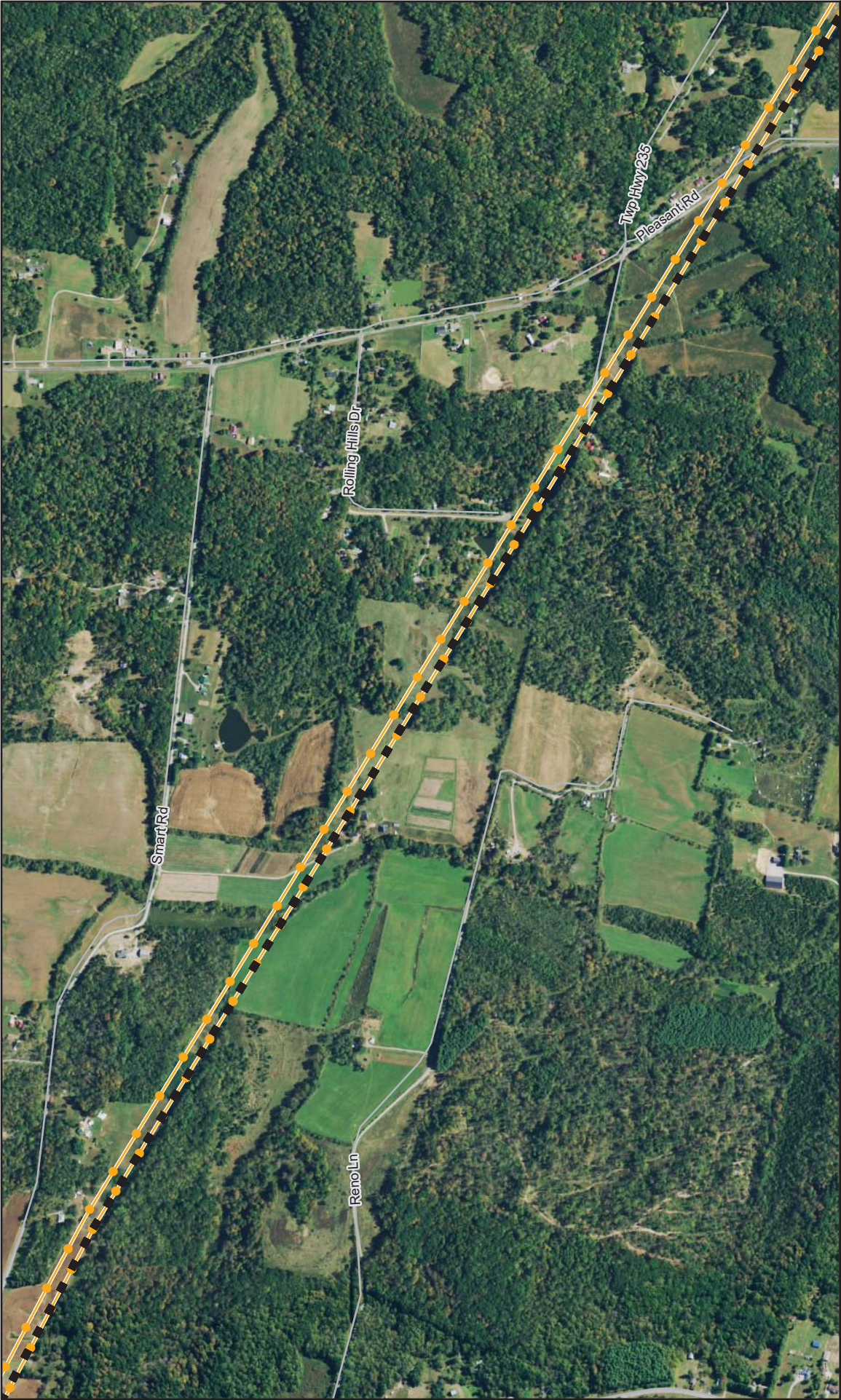
Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021	 N	 Exhibit 2.2 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.3 Existing and Proposed Transmission Line Map	
		 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	
BASEMAP SOURCE Esri, USDA Farm Service Agency		 NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000	
		 April 21, 2021	



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.4 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet
BASEMAP SOURCE Esri, USDA Farm Service Agency				
NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000				
April 21, 2021				



Legend

- ▲ Existing Substation
- ▲ Proposed Switch
- Proposed Route

Existing Transmission Line

- Below 69kV
- 138kV
- 345kV+

- County Boundary
- City Boundary

BASEMAP SOURCE
Esri, USDA Farm Service Agency

NAD 1983 State Plane Ohio
South FIPS 3402
Scale: 1:12,000



April 21, 2021

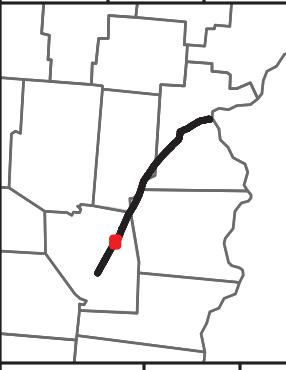
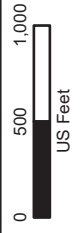


Exhibit 2.5
Existing and Proposed
Transmission Line Map



Hillsboro to Millbrook Park
138 kV Transmission Line
Rebuild Project

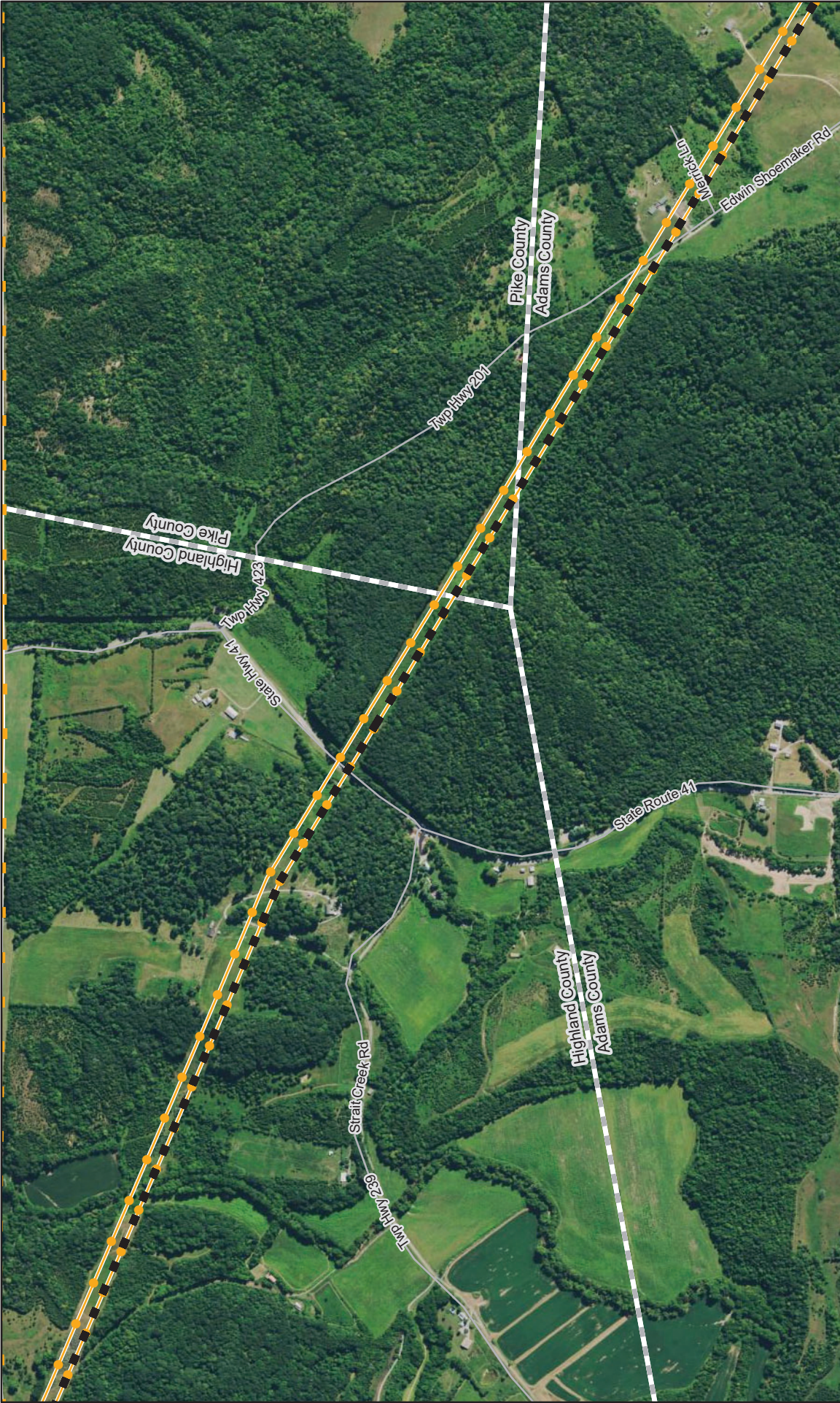




Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021	 N		Exhibit 2.7 Existing and Proposed Transmission Line Map
					 AMERICAN ELECTRIC POWER Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	Exhibit 2.8 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet
BASEMAP SOURCE Esri, USDA Farm Service Agency				
NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000				
April 21, 2021				



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.9 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	

0 500 1,000
US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021			Exhibit 2.10 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021	 N		Exhibit 2.11 Existing and Proposed Transmission Line Map
					 AMERICAN ELECTRIC POWER <small>BOUNDLESS ENERGY</small> Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	Exhibit 2.12 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet
BASEMAP SOURCE Esri, USDA Farm Service Agency				April 21, 2021
NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000				



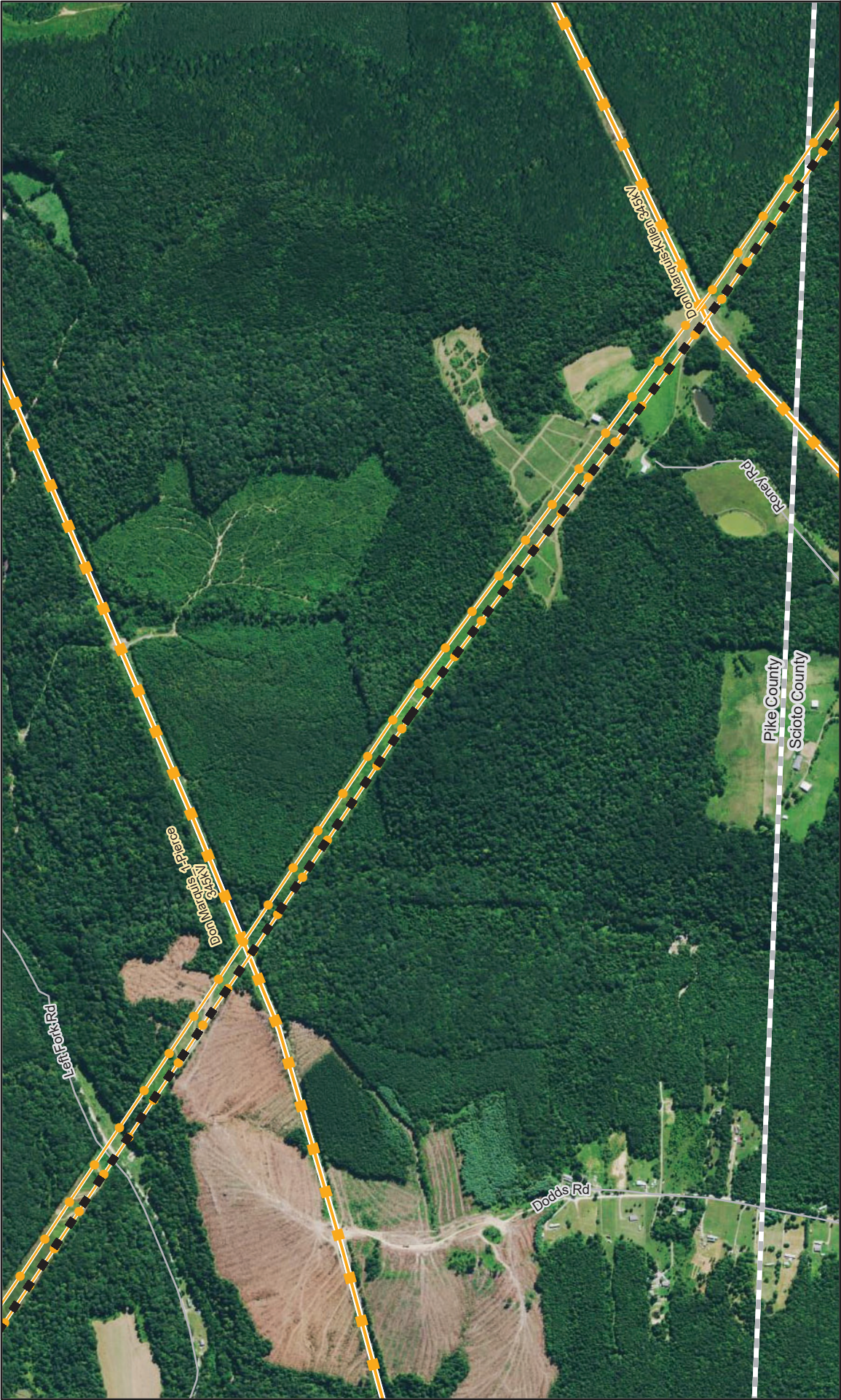
Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021		Exhibit 2.13 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.14 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet	



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+ County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021		Exhibit 2.15 Existing and Proposed Transmission Line Map
			 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	Exhibit 2.16 Existing and Proposed Transmission Line Map		 AMERICAN ELECTRIC POWER <small>BOUNDLESS ENERGY</small>	Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet
BASEMAP SOURCE Esri, USDA Farm Service Agency		NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000		April 21, 2021		



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021		Exhibit 2.17 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency	 NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000	 April 21, 2021	Exhibit 2.18 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021			Exhibit 2.19 Existing and Proposed Transmission Line Map
					 AMERICAN ELECTRIC POWER <small>BOUNDLESS ENERGY</small> Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021	 N		Exhibit 2.20 Existing and Proposed Transmission Line Map	 AMERICAN ELECTRIC POWER BOUNDLESS ENERGY	Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+ County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021		Exhibit 2.21 Existing and Proposed Transmission Line Map
			 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021	 N		Exhibit 2.22 Existing and Proposed Transmission Line Map
					 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency	 NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000	April 21, 2021	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	AMERICAN ELECTRIC POWER SOUNDLESS ENERGY	Exhibit 2.23 Existing and Proposed Transmission Line Map	0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	Exhibit 2.24 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet
BASEMAP SOURCE Esri, USDA Farm Service Agency				 N
NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000		April 21, 2021		



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line — Below 69kV — 138kV — 345kV+	 County Boundary City Boundary	Exhibit 2.25 Existing and Proposed Transmission Line Map	 AMERICAN ELECTRIC POWER FOUNDLESS ENERGY	Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet

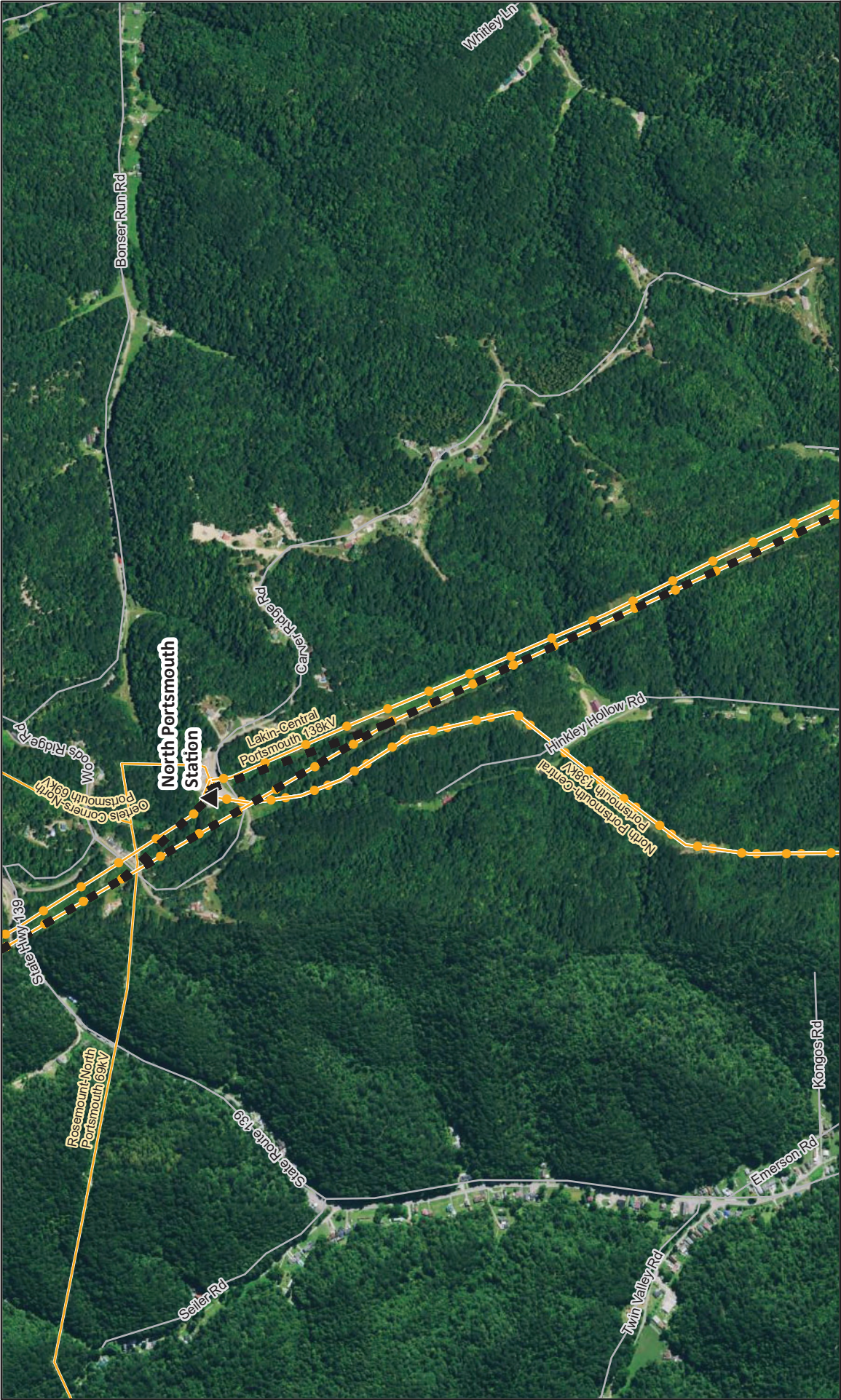
BASEMAP SOURCE
Esri, USDA Farm Service Agency

NAD 1983 State Plane Ohio
South FIPS 3402
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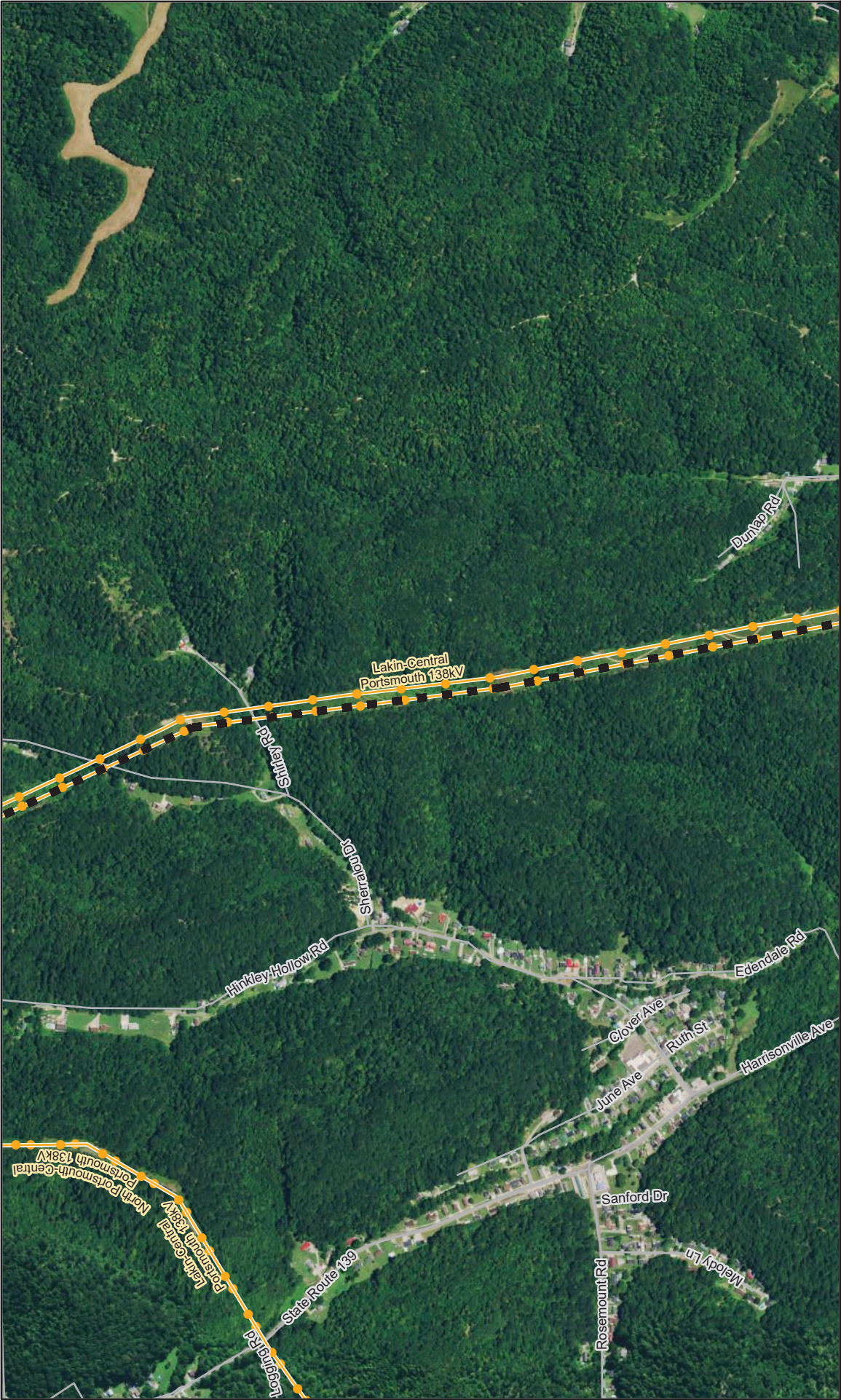
April 21, 2021



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.26 Existing and Proposed Transmission Line Map	
		 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	
BASEMAP SOURCE Esri, USDA Farm Service Agency			
NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000		April 21, 2021	

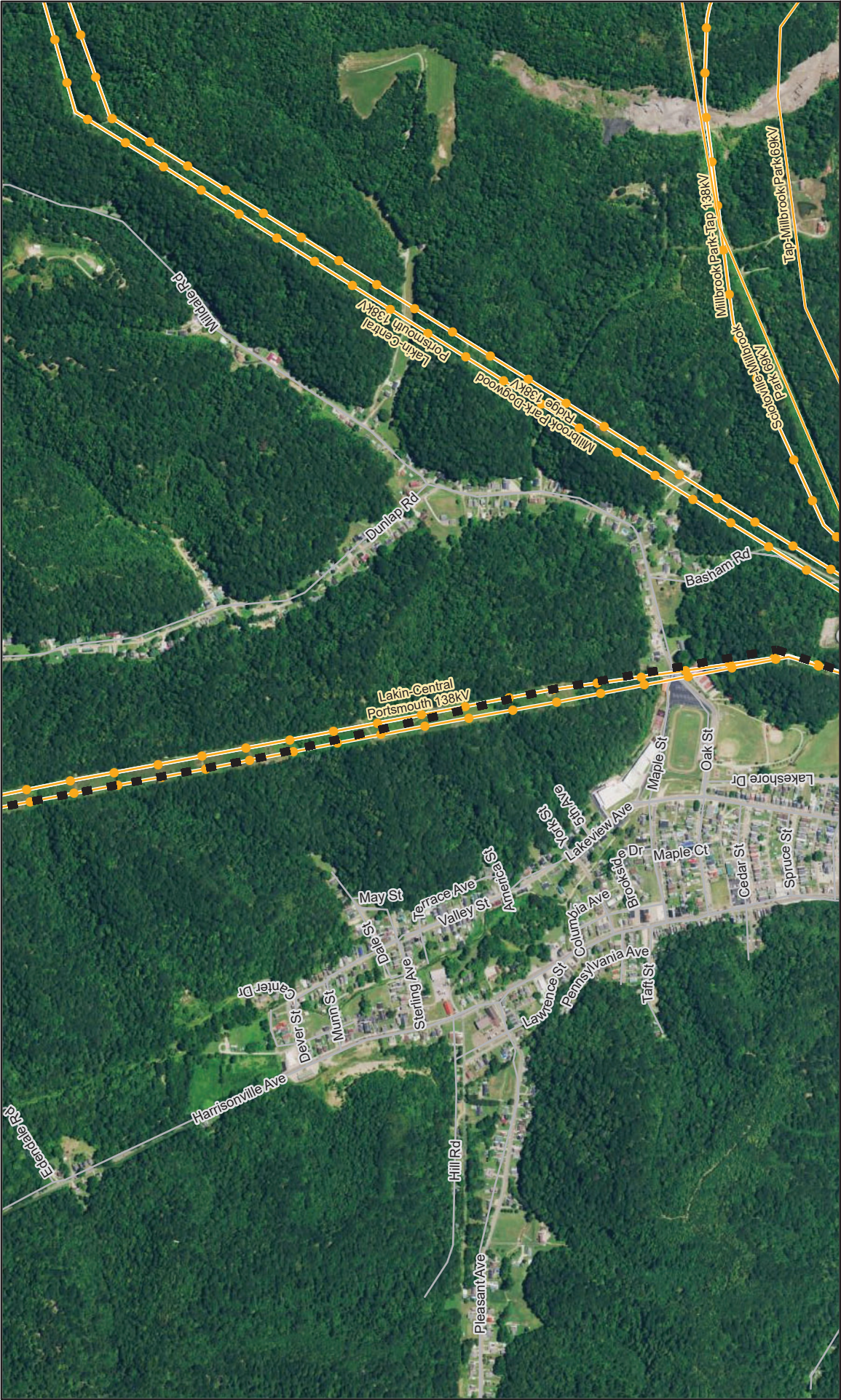


Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency	 NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021		Exhibit 2.27 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.28 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	

N
0 500 1,000
US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	BASEMAP SOURCE Esri, USDA Farm Service Agency	 NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000	 April 21, 2021	Exhibit 2.29 Existing and Proposed Transmission Line Map	 Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project	 0 500 1,000 US Feet



Legend ▲ Existing Substation ▲ Proposed Switch ■ Proposed Route Existing Transmission Line Below 69kV 138kV 345kV+	 County Boundary City Boundary	Exhibit 2.30 Existing and Proposed Transmission Line Map Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project 0 500 1,000 US Feet		BASEMAP SOURCE Esri, USDA Farm Service Agency NAD 1983 State Plane Ohio South FIPS 3402 Scale: 1:12,000 April 21, 2021

Appendix B

PJM Interconnection Submittal

PUCO Form FE-T9
AEP Ohio Transmission Company
Specifications of Planned Transmission Lines

LINE NAME AND NUMBER:	Hillsboro - Millbrook Park 138 kV / Millbrook Park - South Lucasville 138 kV (s2251)
POINTS OF ORIGIN AND TERMINATION	Hillsboro, Millbrook Park; INTERMEDIATE STATION - Sinking Springs Sw., Millbrook Park, South Lucasville; INTERMEDIATE STATION - North Portsmouth
RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	43.4 miles / 100ft / 1 circuit (of new construction), 8.5 miles / 100ft / 2 circuit (of new construction)
VOLTAGE: DESIGN / OPERATE	138V / 138kV
APPLICATION FOR CERTIFICATE:	LON, 2020/21
CONSTRUCTION:	2022-2024
CAPITAL INVESTMENT:	\$126.1M
PLANNED SUBSTATION:	NAME - N/A; TRANSMISSION VOLTAGE - N/A; ACREAGE - N/A; LOCATION - N/A
SUPPORTING STRUCTURES:	Overhead, Steel, Pole
PARTICIPATION WITH OTHER UTILITIES	N/A
PURPOSE OF THE PLANNED TRANSMISSION LINE	Rebuild of existing 138kV line, to address condition, performance, and risk issues
CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of further deterioration and performance issues
MISCELLANEOUS:	N/A

AEP Transmission Zone M-3 Process

Hillsboro – Millbrook Park 138 kV Line Rebuild

Need Number: AEP-2019-OH024

Process Stage: Solutions Meeting 02/21/2020

Previously Presented: Needs Meeting 05/20/2019

Supplemental Project Driver:

Equipment Condition/Performance/Risk

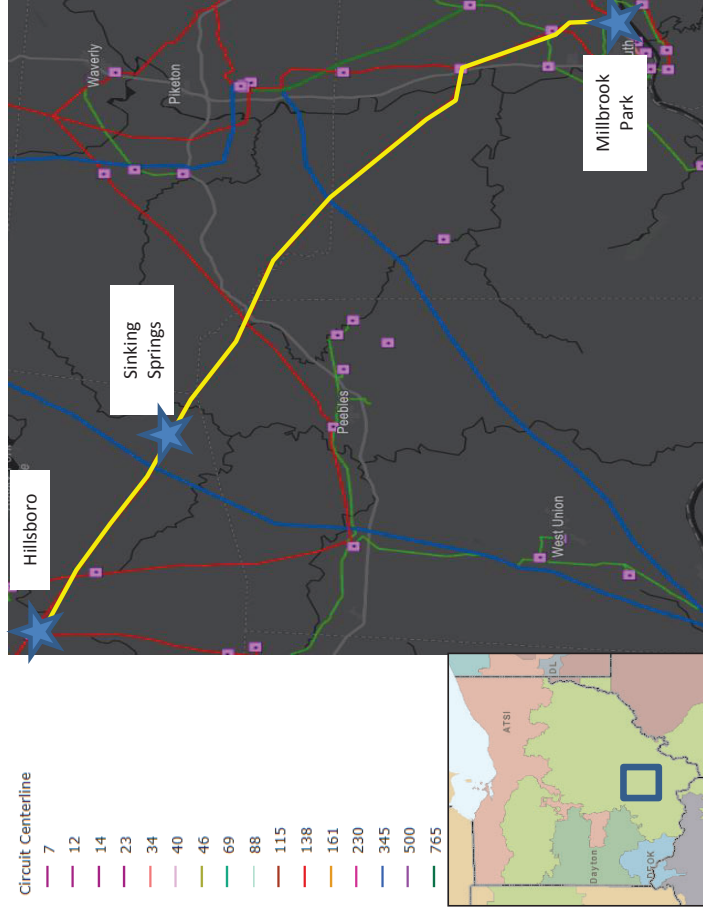
Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 8)

Problem Statement:

- The 1943 Hillsboro – Millbrook Park 138 kV circuit (~52 miles) is wood pole construction and has 1,342 open conditions.
- The majority (93%) of the original conductor (vintage 1944 & 1948) is 477 MCM (26/7) ACSR and is still in-service.
- Half of the wood pole structures from the 1940's are still in-service; the remaining are a mixture from 1960's – 1980's.
- There are additional concerns with the shielding, grounding, and hardware along this 52 mile long line.
- Sinking Springs is in a remote part of AEP's service territory making manual switching difficult.
- Originally installed in 1942-1943 timeframe. 98% of the line is on wood structures.
- Age Profile: 53% from 1940's; 4.4% from 1960's; 13% from 1970's; 27% from 1980's; 2.6% from 2000's

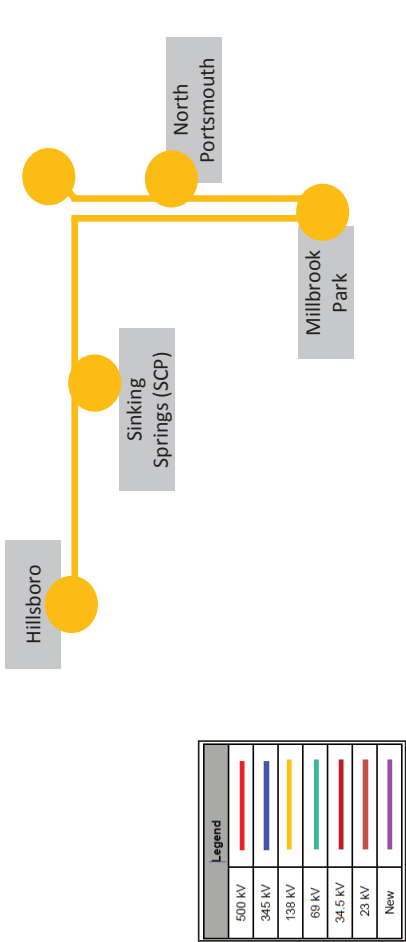
Model: N/A



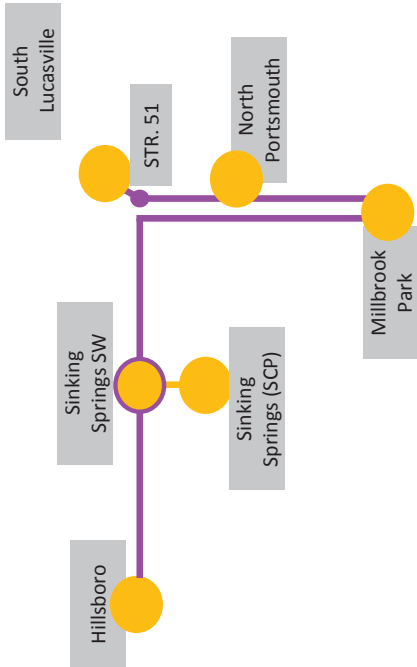
AEP Transmission Zone M-3 Process

Hillsboro – Millbrook Park 138 kV Line Rebuild

Existing:



Proposed:



Need Number: AEP-2019-OH024

Process Stage: Solutions Meeting 02/21/2020

Proposed Solution:

Portsmouth – Trenton #1 & #2 138kV Cost: \$126.1M

Rebuild 43.4 miles single circuit line between Hillsboro – South Lucasville with 1033 ACSR. **Estimated Cost:\$92.5M**

Rebuild 8.5 miles double circuit between Millbrook Park – South Lucasville with 1033 ACSR. **Estimated Cost: \$33.6M**

Install a new 3-way 2000A 138kV, phase over phase switch at Sinking Springs. **Estimated Cost: \$0.7M**

Total Estimated Transmission Cost: \$126.8M

Alternatives Considered:

No viable cost-effective transmission alternative was identified.

Projected In-Service: 09/30/2022

Project Status: Scoping

**LETTER OF NOTIFICATION FOR THE HILLSBORO-MILLBROOK PARK
138 KV LINE REBUILD PROJECT**

Appendix C Easement/Options List

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
02-27-000-142.01	Yes
02-26-000-026.00	Yes
28-26-000-081.00	Yes
28-26-000-082.01	Yes
28-26-000-082.00	Yes
28-26-000-083.00	Yes
21-26-000-179.00	Yes
21-26-000-178.00	Yes
21-26-000-176.00	Yes
21-21-000-001.00	Yes
21-21-000-004.00	Yes
21-21-000-005.02	Yes
21-21-000-003.00	Yes
21-21-000-008.00	Yes
21-21-000-023.00	Yes
21-21-000-027.00	Yes
21-21-000-026.00	Yes
21-21-000-026.01	Yes
21-21-000-032.02	Yes
21-21-000-032.01	Yes
21-21-000-037.00	Yes
21-21-000-036.00	Yes
21-21-000-043.02	Yes
21-21-000-043.00	Yes
21-21-000-043.01	Yes
21-21-000-043.00	Yes
21-21-000-042.00	Yes
21-21-100-009.00	Yes
21-21-100-008.00	Yes
43-21-100-010.00	Yes
43-21-100-012.00	Yes
43-21-000-422.00	Yes
43-21-000-422.03	Yes
43-21-000-437.00	Yes
43-21-000-423.00	Yes
43-21-000-435.00	Yes
43-21-000-426.00	Yes
43-21-000-427.00	Yes
43-21-000-428.00	Yes
43-21-000-429.00	Yes
43-21-000-429.01	Yes
43-21-000-409.00	Yes
43-21-000-430.00	Yes
43-21-000-288.01	Yes
43-21-000-403.00	Yes
43-21-000-289.00	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
44-21-000-291.00	Yes
44-21-000-291.02	Yes
44-21-000-316.00	Yes
44-21-000-318.00	Yes
44-20-000-111.00	Yes
44-20-000-325.01	Yes
44-20-000-109.00	Yes
43-20-000-106.01	Yes
43-20-000-106.05	Yes
44-20-000-104.00	Yes
44-20-000-104.02	Yes
44-20-000-104.03	Yes
44-20-000-104.01	Yes
44-20-000-094.00	Yes
44-20-001-005.00	Yes
44-20-000-089.05	Yes
44-20-000-088.00	Yes
44-20-000-085.02	Yes
44-20-000-278.02	Yes
23-20-000-082.01	Yes
44-20-000-281.00	Yes
23-20-000-082.00	Yes
23-20-000-081.00	Yes
23-20-000-079.00	Yes
23-15-000-125.00	Yes
23-15-000-124.00	Yes
23-15-000-004.00	Yes
30-15-000-312.00	Yes
30-15-000-323.00	Yes
30-15-000-325.00	Yes
30-15-000-325.02	Yes
30-15-000-325.01	Yes
30-15-000-329.00	Yes
30-15-000-327.00	Yes
30-15-000-328.00	Yes
30-15-000-334.00	Yes
30-15-000-335.01	Yes
30-15-000-335.00	Yes
30-15-000-336.00	Yes
30-15-000-387.00	Yes
30-15-000-385.00	Yes
30-15-600-001.00	Yes
30-15-000-366.01	Yes
30-15-000-365.00	Yes
30-15-000-364.00	Yes
30-15-000-422.00	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
30-14-000-328.05	Yes
30-14-000-328.04	Yes
30-14-000-326.00	Yes
30-14-000-377.00	Yes
05-2492.000	Yes
05-0498.001	Yes
050498002	Yes
05-2402.000	Yes
05-0547.000	Yes
05-0580.000	Yes
05-0315.000	Yes
05-0100.000	Yes
05-2357.001	Yes
05-0313.000	Yes
05-0313.001	Yes
05-0308.001	Yes
05-0308.000	Yes
05-0984.000	Yes
05-0352.000	Yes
05-0355.000	Yes
08-0896.000	Yes
24-0125.000	Yes
24-0458.000	Yes
24-0153.000	Yes
24-0454.000	Yes
24-0478.000	Yes
24-0460.000	Yes
24-0053.000	Yes
24-1648.000	Yes
24-0123.000	Yes
24-1646.000	Yes
24-1672.000	Yes
24-1661.000	Yes
21-0296.000	Yes
22-1628.000	Yes
22-1547.001	Yes
22-1545.006	Yes
22-1547.000	Yes
22-1545.000	Yes
22-1625.000	Yes
22-1580.000	Yes
22-1798.000	Yes
22-1579.000	Yes
22-1580.001	Yes
22-1581.000	Yes
22-1526.000	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
22-1583.000	Yes
22-1612.000	Yes
21-1710.000	Yes
22-1582.000	Yes
13-0432.000	Yes
13-0434.000	Yes
13-0214.000	Yes
13-0213.000	Yes
13-0022.000, 13-0967.000	Yes
13-0967.000	Yes
13-0020.000	Yes
13-0021.000	Yes
13-0968.000	Yes
13-0352.000	Yes
13-0555.000	Yes
13-0345.000	Yes
13-0460.000	Yes
13-0465.000	Yes
13-0463.000	Yes
13-0988.000	Yes
13-0330.000	Yes
13-0331.000	Yes
13-0332.000	Yes
13-0431.000	Yes
13-0207.000	Yes
13-0208.000	Yes
13-0164.000	Yes
13-0210.000	Yes
13-0358.000	Yes
13-0573.000	Yes
13-0415.001	Yes
13-0370.000	Yes
13-0392.005	Yes
13-0392.006	Yes
13-0392.000	Yes
13-0392.016	Yes
13-0392.015	Yes
13-0392.011	Yes
13-0392.013	Yes
13-0392.008	Yes
13-0726.000	Yes
13-0567.008	Yes
13-0291.000	Yes
13-0567.006	Yes
13-0663.000	Yes
13-0267.000	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
13-0264.000	Yes
13-0265.000	Yes
13-0263.000	Yes
13-0287.000	Yes
13-0289.000	Yes
13-0063.000	Yes
13-0120.004	Yes
13-0120.003	Yes
13-0268.000	Yes
13-0978.003	Yes
13-0250.000	Yes
13-0354.000	Yes
20-0863.000	Yes
18-0028.000	Yes
20-0874.000	Yes
20-0869.000	Yes
20-0851.000	Yes
20-0871.000	Yes
20-0864.000	Yes
20-0872.000	Yes
18-0122.000	Yes
18-0481.000	Yes
18-0504.004	Yes
18-0503.002	Yes
02-27-000-142.00	Yes
03-27-000-001.00	Yes
03-27-000-018.00	Yes
03-27-000-015.01	Yes
03-27-000-015.02	Yes
03-27-000-012.00	Yes
03-27-000-038.00	Yes
03-27-000-063.00	Yes
03-27-000-057.00	Yes
03-27-000-062.00	Yes
03-27-000-061.04	Yes
03-27-000-152.00	Yes
03-27-000-152.01	Yes
03-27-000-150.00	Yes
03-27-000-150.01	Yes
03-22-000-074.04	Yes
03-22-000-074.00	Yes
03-22-000-074.02	Yes
01-27-000-147.00	Yes
01-27-000-147.04	Yes
01-27-000-147.01	Yes
01-27-000-147.03	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
01-27-000-147.00	Yes
02-27-000-145.00	Yes
019-00-00-016.000	Yes
019-00-00-015.000	Yes
019-00-00-017.000	Yes
019-00-00-014.001	Yes
019-00-00-011.000	Yes
019-00-00-009.000	Yes
019-00-00-005.000	Yes
019-00-00-010.001	Yes
018-00-00-008.000	Yes
018-00-00-006.000	Yes
018-00-00-004.000	Yes
018-00-00-007.000	Yes
045-00-00-900.000	Yes
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018-00-00-023.000	Yes
017-00-00-001.000	Yes
017-00-00-002.000	Yes
005-00-00-010.000	Yes
005-00-00-009.000	Yes
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005-00-00-004.011	Yes
005-00-00-004.000	Yes
005-00-00-004.009	Yes
005-00-00-004.007	Yes
005-00-00-004.008	Yes
005-00-00-006.010	Yes
005-00-00-006.011	Yes
005-00-00-006.006	Yes
005-00-00-006.012	Yes
005-00-00-006.004	Yes
005-00-00-006.002	Yes
005-00-00-006.000	Yes
005-00-00-006.013	Yes
005-00-00-006.003	Yes
005-00-00-008.000	Yes
005-00-00-007.000	Yes
004-00-00-010.000	Yes
40210000000	Yes
40213000000	Yes
40178000000	Yes
40078000000	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
40294000000	Yes
40446000000	Yes
40446010000	Yes
40425000000	Yes
40189000000	Yes
40004000000	Yes
40516000000	Yes
40352020000	Yes
40390000000	Yes
40105000000	Yes
40106000000	Yes
40107000000	Yes
40042010100	Yes
40042010000	Yes
40042020000	Yes
40044010000	Yes
40044000000	Yes
40510000000	Yes
40520000000	Yes
40586000000	Yes
40128000000	Yes
40012000000	Yes
40578000000	Yes
40129010000	Yes
40129080000	Yes
40129070000	Yes
40643000000	Yes
230098000000	Yes
40159000000	Yes
230242000000	Yes
120303000000	Yes
121015000000	Yes
120336000000	Yes
28-1494.000	Yes
28-1490.000	Yes
28-1224.000	Yes
28-1353.000	Yes
28-0296.000	Yes
34-2645.000	Yes
34-2671.000	Yes
34-2000.000	Yes
34-1693.000	Yes
34-2642.000	Yes
34-2612.000	Yes
34-1767.000	Yes
28-0850.000	Yes

Tax Parcel Number	Easement Agreement/Option Obtained* (Yes/No)
34-1134.000	Yes
34-2478.000	Yes
34-2477.000	Yes
34-2476.000	Yes
34-0915.000	Yes
34-0914.000	Yes
34-0851.000	Yes
34-0852.000	Yes
34-0633.000	Yes
34-0592.000	Yes
05-0328.000	Yes
05-1369.000	Yes
05-0331.000	Yes
05-1368.000	Yes
05-1029.000	Yes
05-0242.000	Yes
05-0816.000	Yes
05-2401.000	Yes
05-0142.000	Yes
05-0277.001	Yes
05-0277.000	Yes
05-0546.001	Yes
05-0546.000	Yes
05-0813.000	Yes
05-1242.000	Yes
05-1241.000	Yes
05-1242.001	Yes
05-0521.000	Yes
05-0818.000	Yes

*The Company may supplement existing rights under all blanket and defined easements identified above.

Appendix D

Agency Correspondence



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

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

January 22, 2020

Suzann Collins
Jacobs
400 E. Business Way, Suite 400
Cincinnati, Ohio 45241

Re: 19-775; AEP Hillsboro to Millbrook Park Transmission Line Rebuild Project

Project: The proposed project involves the rebuild of approximately 52 miles of existing 138 kV transmission line.

Location: The proposed project is located in Highland, Adams, Pike, and Scioto Counties, Ohio.

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

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

Chaffweed (*Anagallis minima*), T
Long tail moss (*Anomodon viticulosus*), E
Southern hairy rock cress (*Arabis pycnocarpa* var. *adpressipilis*), P
Wall-rue (*Asplenium ruta-muraria*), T
Canada milk vetch (*Astragalus canadensis*), T
Prairie brome (*Bromus kalmii*), P
Bluehearts (*Buchnera americana*), T
Villous panic grass (*Dichanthelium villosissimum*), P
Wedge-leaved whitlow-grass (*Draba cuneifolia*), T
Glade spurge (*Euphorbia purpurea*), E, FSC
Sullivant's bark moss (*Forsstroemia producta*), E
Milk-pea (*Galactia regularis*), P
Ashy sunflower (*Helianthus mollis*), T
Crested coral-root (*Hexalectris spicata*), P
Michaux's glade-cress (*Leavenworthia uniflora*), T
Narrow-leaved pinweed (*Lechea tenuifolia*), P

Slender blazing-star (*Liatris cylindracea*), T
 Three-flowered melic (*Melica nitens*), T
 Rock sandwort (*Minuartia michauxii*), P
 Common prickly pear (*Opuntia cespitosa*), P
 Mountain-rice (*Piptatherum racemosum*), P
 Wolf's blue grass (*Poa wolfii*), E
 Wherry's catchfly (*Silene caroliniana* ssp. *wherryi*), T
 Shining ladies'-tresses (*Spiranthes lucida*), P
 Mixed mesophytic forest plant community
 Oak pine forest plant community
 Blue sucker (*Cycleptus elongatus*), T, FSC
 Tippecanoe darter (*Etheostoma tippecanoe*), T
 Channel darter (*Percina copelandi*), T
 River darter (*Percina shumardi*), T
 Shovelnose sturgeon (*Scaphirhynchus platyrhynchus*), E
 Henslow's sparrow (*Ammodramus henslowii*), SC, FSC
 Chuck-will's-widow (*Caprimulgus carolinensis*), SI
 Bewick's wren (*Thryomanes bewickii*), X, FSC
 Brush Creek State Forest – ODNR Division of Forestry
 Strait Creek Prairie Bluff State Nature Preserve – The Nature Conservancy

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

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

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

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

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

The western 15,000 feet of the project route, and the portion of the project route between the Ohio River and the Scioto River are within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer*

saccharinum), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31.

The remainder of the project route is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior any to cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the purple cat's paw (*Epioblasma o. obliquata*), a state endangered and federally endangered mussel, the sheepnose (*Plethobasus cyphus*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the little spectaclecase (*Villosa lienosa*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the elephant-ear (*Elliptio crassidens crassidens*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the ebonyshell (*Fusconaia ebena*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovate*), a state endangered mussel, the washboard (*Megaloniaias nervosa*), a state endangered mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the pyramid pigtoe (*Pleurobema rubrum*), a state endangered mussel, the yellow sandshell (*Lampsilis teres*), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, the wartyback (*Quadrula nodulata*), a state endangered mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, and the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel.

This project must not have an impact on freshwater native mussels along the project route. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2018), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any

subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2018) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The project is within the range of the popeye shiner (*Notropis ariommus*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the shovelnose sturgeon (*Scaphirhynchus platyrhynchus*), a state endangered fish, the mountain madtom (*Noturus eleutherus*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the goldeye (*Hiodon alosoides*), a state endangered fish, the blue sucker (*Cycleptus elongatus*), a state threatened fish, the American eel (*Anguilla rostrata*), a state threatened fish, the channel darter (*Percina copelandi*), a state threatened fish, the bigeye shiner (*Notropis boops*), a state threatened fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the paddlefish (*Polyodon spathula*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 to 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 these or other aquatic species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, this project is not likely to impact this species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. The DOW recommends that a DOW approved herpetologist conducts a habitat suitability survey along the project route to determine if suitable habitat exists for the timber rattlesnake. If suitable habitat is determined to be present, the DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is also within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. The DOW recommends that a DOW approved herpetologist conducts a habitat suitability survey along the project route to determine if suitable habitat exists for the eastern spadefoot toad. If suitable habitat is determined to be present, the DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the mud salamander (*Pseudotriton montanus*), a state threatened species. The DOW recommends that a DOW approved herpetologist conducts a habitat suitability survey along the project route to determine if suitable habitat exists for the mud salamander. If suitable habitat is determined to be present, the DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. Due to the location, this project is not likely to impact this species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Due to the location, this project is not likely to impact this species.

The project is within the range of the Allegheny woodrat (*Neotoma magister*), a state endangered species. The Allegheny woodrat utilizes rocky outcrops such as cliffs and caves in forested areas. Due to the location, this project is not likely to impact this species.

The project is within the range of the lark sparrow (*Chondestes grammacus*), a state endangered bird. This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and shrubby fields along sandy beach ridges. These summer residents normally migrate out of Ohio shortly after their young fledge or leave the nest. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to June 30. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the loggerhead shrike (*Lanius ludovicianus*), a state endangered bird. The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. If thickets or other types of dense shrubbery habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

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

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

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

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

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)



Ohio Division of Wildlife

APPROVED HERPETOLOGISTS

The following individuals are approved to conduct habitat suitability surveys and presence/absence surveys for the state listed reptiles and amphibians specified below.

Ramsey Langford

3023 Colon Dr.
Copley, Ohio 44321
ramseylangford@gmail.com
330-447-4840

Approved for:

- Spotted turtle (*Clemmys guttata*)
- Blanding's turtle (*Emydoidea blandingii*)
- Smooth greensnake (*Opheodrys vernalis*)

Teal Dimitrie

3054 Kensington Rd.
Cleveland Heights, Ohio 44118
trichards-dimitrie@enviromscienceinc.com
586-846-0087

Approved for:

- Spotted turtle (*Clemmys guttata*)
- Blanding's turtle (*Emydoidea blandingii*)

Michael Hoggarth

Department of Biology and Earth Science
Otterbein University
Westerville, Ohio 43081
mhoggarth@otterbein.edu
614-823-1667

Approved for:

- Green salamander (*Aneides aeneus*)
- Lake Erie watersnake (*Nerodia sipedon insularum*)
- Eastern hellbender (*Cryptobranchus alleganiensis*)

Matthew Cross

1736 C Dublin Ct.
Bowling Green, Ohio 43402
eobsoleta01@gmail.com
616-240-6486

Approved for:

- Blanding's turtle (*Emydoidea blandingii*)
- Kirtland's snake (*Clonophis kirtlandii*)

Thomas Pauley

4525 Este Ave.
Cincinnati, Ohio 45232
tpauley@envsi.com
513-451-1777

Approved for:

- Green salamander (*Aneides aeneus*)
- Timber rattlesnake (*Crotalus horridus*)

Bruce Kingsbury

2224 Springfield Ave.
Fort Wayne, Indiana 46805
bruce.kingsbury@ipfw.edu
260-341-2013

Approved for:

- Eastern massasauga (*Sistrurus catenatus catenatus*)
- Kirtland's snake (*Clonophis kirtlandii*)
- Blanding's turtle (*Emydoidea blandingii*)
- Spotted turtle (*Clemmys guttata*)
- Copper-bellied watersnake (*Nerodia erythrogaster neglecta*)

Please direct questions concerning this list to: wildlife.permits@dnr.state.oh.us

April 2019

Nicholas Smeenk
2158 Northern Rd.
Columbus, Ohio 43221
614-354-7890

Approved for: - Eastern massasauga (*Sistrurus catenatus catenatus*)
- Eastern hellbender (*Cryptobranchus alleganiensis*)

The following individuals are approved to conduct habitat suitability surveys and presence/absence surveys for all state listed reptiles and amphibians.

Kent Bekker
542 Centerfield Drive
Maumee, Ohio 43537
kbekker@gmail.com
419-376-4384

Ralph Pfingsten
347 Pineview Circle
Berea, Ohio 44017
rap347@wideopenwest.com
440-243-7568

Tim O. Matson
5696 Matson Rd
Geneva, OH 44041
tmatson@cmnh.org
440-417-8196

Jeff Davis
625 Crescent Road
Hamilton, Ohio 45013
ohiofrogs@gmail.com
513-868-3154

Gregory Lipps, LLC
1473 County Road 5-2
Delta, Ohio 43515-9657
greglipps@gmail.com
419-376-3441

Doug Wynn
241 Chase Street, Apt. A1
Russell's Point, Ohio 43348
Sistrurus@aol.com
614-306-0313

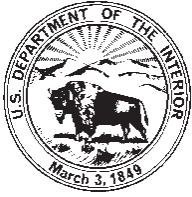
Kristin Stanford
OSU Stone Laboratory
P.O. Box 119
Put-in-Bay, OH 43456
theislandsnakelady@yahoo.com
419-285-1847

Please direct questions concerning this list to: wildlife.permits@dnr.state.oh.us

April 2019

United States Department of the Interior

FISH AND WILDLIFE SERVICE



Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

March 4, 2021

Suzann Collins
Jacobs

TAILS# 03E15000-2019-TA-2039

Re: AEP Hillsboro to Millbrook Park Transmission Line Rebuild Project, Highland, Adams, Pike and Scioto Counties, OH

Dear Ms. Collins,

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

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

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

forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats.

Portions of the line in southern Scioto County are in Indiana bat hibernaculum buffers and roost tree buffers; the northern section of the line in Highland County is within many capture buffers of male and female Indiana bats and roost trees of these bats; portions of the project are also within capture buffers of Northern long-eared bats. We understand that the majority of the transmission line rebuild is occurring on existing right-of way that is already cleared. However due to the numerous bat records in these portions of the project area, additional information is needed to evaluate this project. **The Service requests additional information on the extent of tree clearing proposed along portions of the line in Scioto and Highland Counties so that we may evaluate the potential for the project to effect the Indiana and northern long-eared bat and recommend appropriate minimization measures. Please provide estimated acreages of forest clearing as well as maps indicating areas to be cleared.**

The endangered rayed bean (*Villosa fabalis*), a freshwater mussel, is known to occur in Scioto Brush Creek and the Scioto River, both of which will be spanned by the transmission line. The rayed bean is usually found in or near shoal or riffle areas, and in the shallow, wave-washed areas of lakes. Substrates typically include gravel and sand, and they are often associated with, and buried under the roots of, vegetation, including water willow (*Justicia americana*) and water milfoil (*Myriophyllum* sp.). Additionally, the endangered clubshell (*Pleurobema clava*) and northern riffleshell (*Epioblasma torulosa rangiana*) mussels are also known to occur in the Scioto River. The clubshell and northern riffleshell inhabit areas with sand or gravel substrate and also prefer areas with riffles and runs.

Should the proposed project directly or indirectly impact any of the mussel streams listed above, we recommend that a survey be conducted to determine the presence or probable absence of rayed bean mussels in the vicinity of the proposed site. Any survey should be designed and conducted in coordination with the Ohio Field Office. Surveyors must have valid Federal and State permits to survey for federally listed mussels in Ohio. If any impact to native riparian vegetation is proposed we recommend further coordination with our office to determine if impacts to these mussel species may occur. Best management practices that minimize stormwater runoff and erosion should be diligently implemented in these areas.

The proposed project lies within the range of Virginia spiraea (*Spiraea virginiana*), a federally listed threatened species. This plant is generally found in riparian habitats along rocky streambanks or sandbars. This species requires a habitat characteristic of flooding and subsequent deposition for successful colonization. Known populations of Virginia spiraea in Ohio occur on large, long-established gravel bars in Scioto County, along Scioto Brush Creek. The current alignment occurs in a township where the species is known to occur, but does not cross the creek in this township. At this time it does not appear that the project will impact this species, however if the alignment were to be modified, further coordination with this office is requested.

The proposed project lies within the range of running buffalo clover (*Trifolium stoloniferum*), a federally listed endangered species that was recently proposed for delisting due to recovery. This species can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails and in right-of-ways. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance.

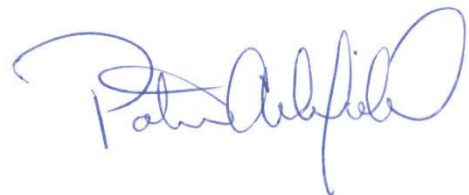
If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend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

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

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

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

Sincerely,



Patrice M. Ashfield
Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW



In reply, refer to
2020-MLT-49570

October 22, 2020

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

RE: Hillsboro-Millbrook 138kV Rebuild Project, Adams, Highland, Pike, and Scioto Counties, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on September 23, 2020 regarding the proposed Hillsboro-Millbrook 138kV Rebuild Project, Adams, Highland, Pike, and Scioto Counties, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the 83.7 km (52 mi) Hillsboro-Millbrook 138kV Rebuild Project in Highland, Adams, Pike, and Scioto Counties, Ohio* by Ryan J. Weller (Weller & Associates, Inc., 2020).

A literature review, visual inspection, surface collection, shovel probe and shovel test unit excavation was completed as part of the investigations. Five (5) previously identified archaeological sites are located within the project area, Ohio Archaeological Inventory (OAI) #33SC0523, 33HI0219, and 33HI0395-33HI0397. OAI#33HI0219 is recommended for avoidance or additional investigations. The four (4) other previously identified archaeological sites are recommended not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with this recommendation.

Twenty (20) new archaeological sites were identified during survey. OAI#33SC0653-33SC0657, 33PK0442-33PK0443, and 33HI0478-33HI0489 are recommended not eligible for listing in the NRHP. OAI#33SC0658 is recommended for avoidance or additional investigations. Our office agrees with these recommendations.

The following comments pertain to the *History/Architecture Investigations for the 83.7 km (52 mi) Hillsboro-Millbrook 138kV Rebuild Project in Highland, Adams, Pike, and Scioto Counties, Ohio* by Austin White and Scott McIntosh (Weller & Associates, Inc., 2020).

A literature review and field survey were completed as part of the investigations. A total of 282 resources fifty years of age or older were newly identified and four extant Ohio Historic Inventory (OHI) properties were identified within the Area of Potential Effects during the field survey.

It is Weller's recommendation that four of the properties identified are eligible for listing in the National Register of Historic Places: SCI0073513 (Criterion C); HIG0000317 (Criteria A and C); HIG0001417 (Criteria A and B); and HIG0001517 (Criterion B). Our office agrees with Weller's recommendations regarding eligibility. Due to the nature of the project as a rebuild and replacement of the existing transmission line, we agree that the project as proposed will have no adverse effect on these historic properties.

RPR Serial No: 1085659, 1085660

In summary, two (2) archaeological sites, OAI#33HI0219 and 33SC0658, are recommended for avoidance or additional investigations. It is our understanding that a portion of the project area was inaccessible for archaeology survey do to landowner restrictions. Testing is scheduled in February 2021. Our office looks forward to additional coordination after this testing can take place.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Krista Horricks", is positioned above the typed name.

Krista Horricks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1085659, 1085660

OHIO HISTORY CONNECTION

800 E. 17th Ave., Columbus, OH 43211-2474 • 614.297.2300 • ohiohistory.org



In reply, refer to
2020-MLT-49570

November 25, 2020

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

RE: Hillsboro-Millbrook 138kV Rebuild Project, Highland County, Ohio – Phase II Archaeological Assessment at Site 33HI0219

Dear Mr. Weller:

This letter is in response to the correspondence received on November 20, 2020 regarding the proposed Hillsboro-Millbrook 138kV Rebuild Project, Highland County, Ohio, specifically the Phase II Archaeological Assessment at Site 33HI0219. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase II Archaeological Assessment at Site 33HI0219 within the Proposed Hillsboro-Millbrook 138kV Rebuild Project in Highland County, Ohio* by Joshua Engle (Weller & Associates, Inc., 2020).

Our office reviewed and accepted the proposed Phase II scope of work on November 2, 2020. Geophysical investigation, close-interval shovel testing, and 1x1 meter test unit excavations was completed as part of the investigations. After additional investigations, Ohio Archaeological Inventory (OAI) #33HI0219 is recommended not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with this recommendation. Please ensure the OAI form for 33HI0219 has been updated for SHPO review.

One (1) archaeological site, OAI#33SC0658, is still recommended for avoidance or additional investigations. It is our understanding that a portion of the project area was inaccessible for archaeology survey due to landowner restrictions. Testing is scheduled in February 2021. Our office looks forward to additional coordination after this testing can take place.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Krista Horrocks".

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1086349

Appendix E

Ecological Resources Inventory Report

Wetland and Waterbody Delineation Report

Hillsboro to Millbrook Park 138 kV Transmission Line
Rebuild Project
Highland, Adams, Pike and Scioto Counties, Ohio

Prepared for



April 2021

Jacobs

2 Crowne Point Court, Suite 100 Cincinnati, OH 45241

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- A U.S. Army Corps of Engineers (USACE) Wetland Determination Forms – Midwest and Eastern Mountains & Piedmont Regions
- B Ohio Rapid Assessment Method for Wetlands (ORAM) Forms
- C Qualitative Habitat Evaluation Index (QHEI) Stream Data Forms
- D Primary Headwater Habitat Evaluation Index (HHEI) Stream Data Forms
- E OAC Chapter 3745-1 Stream Representative Photographs
- F Jacobs Open Water/Pond Data Forms

1 Introduction

This wetland and waterbody delineation report (Report) summarizes the results of the wetland and waterbody delineation surveys conducted in Highland, Adams, Pike and Scioto counties by Jacobs Engineering Group, Inc. (Jacobs) for AEP Ohio Transmission Company, Inc.'s (AEP) Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project (Project). AEP is proposing to rebuild approximately 52 miles of existing 138 kV transmission line within existing AEP right-of-way (ROW) with few exceptions (minor shifts to meet AEP's reliability standards for the transmission line). In addition, a new switch structure is proposed near Sinking Springs, OH. The 138 kV overhead electric transmission line starts at the Hillsboro Station and extends generally southeast, ending at the Millbrook Park Station. The overall Project alignment is depicted on the Figure 1 Overview Map. Jacobs conducted environmental surveys in September through October 2019 and follow-up surveys in January 2020 and December 2020 to collect supplemental data. The environmental survey corridor (ESC), which included AEP's existing right-of-way (ROW), was 100 feet wide in the northwesternmost 4.8 miles, and 200 feet wide throughout the remaining extent of ROW.

This wetland and waterbody delineation report contains the following components:

- Figure 1 provides an overview map of the ESC overlain on U.S. Geological Survey (USGS) topographic maps.
- Figures 2-1 through 2-110 show U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) mapped soil units, National Wetland Inventory (NWI) information, National Hydrology Dataset (NHD) information, and Federal Emergency Management Agency (FEMA) floodplain information. Table 3-1 (in Table Appendix) lists the soils types identified within the ESC.
- Figures 3-1 through 3-110 provide the location of all features mapped during the delineation by Jacobs' biologists within the ESC. This includes all wetlands, data points, waterbodies, and ponds. Tables 4-1, 4-2, 4-3, 4-4, and 4-5 provide feature summary information for all wetlands, streams, and ponds delineated within the ESC.
- U.S. Army Corps of Engineers (USACE) wetland determination field data forms are in Appendix A.
- Ohio Rapid Assessment Method for Wetlands (ORAM) two-page forms are in Appendix B.
- Qualitative Habitat Evaluation Index (QHEI) stream data forms for each stream identified with a drainage area of 1 square mile or greater are in Appendix C.
- Primary Headwater Habitat Evaluation Index (HHEI) stream data forms for each stream identified with a drainage area less than 1 square mile are in Appendix D.
- Representative photographs of OAC Chapter 3745-1 streams are in Appendix E.
- Jacobs' Open Water/Pond data forms for each open water feature identified are in Appendix F.

2 Background Information

This section provides a general description of the Project environmental survey corridor and methodologies used during the wetland and waterbody delineation field surveys.

2.1 Project Area

The Project is located in Highland, Adams, Pike and Scioto Counties, Ohio. The ESC begins at Hillsboro Station, approximately 370 feet northwest of County Road 7 in Highland County (near 39.17341 latitude, -83.67781 longitude), and extends southeast terminating at Millbrook Park Station, located south of County Route 52 in Scioto County (near 38.75322 latitude, -82.92894 longitude; Figure 1). The ESC is approximately 52 miles long, 100 feet wide in the northwestern most 4.8 miles, and 200 feet wide throughout the remaining extent of the ROW. The survey corridor totaled approximately 1,193 acres.

Review of the USGS 7.5 minute topographic maps of the area indicated that multiple ditches, streams, and rivers drain the ESC, including Elm Run, Elk Run, Middle Fork Ohio Brush Creek, Baker Fork, Scioto River, Candy Run, Munn Run, and multiple unnamed tributaries of these waterways. The Project area has a rolling topography, with elevations ranging between 600 feet and 1,200 feet above mean sea level throughout the ESC (Figure 1).

Land use and natural communities observed within the ESC includes agricultural land, roadways, industrial (including electrical substations), residential, old field, upland forest, upland scrub shrub, palustrine emergent (PEM) wetland, and palustrine scrub-shrub (PSS) wetland, in addition to the previously identified waterbodies.

2.1.1 Annual Precipitation

Rainfall data for weather stations in the Agricultural Applied Climate Information System (AgACIS) was reviewed prior to completing the environmental survey to determine if climatic conditions were normal at the time of the survey. Hillsboro, West Union 6 ENE, Piketon, and Portsmouth were the nearest weather stations with both historical and recent precipitation records. Precipitation recorded in the Project area indicated above normal annual precipitation totals for all weather stations in 2019 and 2020. Table 2-1 presents the climatic conditions for Highland, Adams, Pike and Scioto Counties. These were taken into consideration when conducting the wetland delineation.

TABLE 2-1: Recent Precipitation Data

Hillsboro to Millbrook Park 138kV Transmission Line Rebuild Project

Precipitation Data ¹	September 2019	October 2019	Annual Totals 2019	January 2020	December 2020	Annual Totals 2020
Highland County						
Hillsboro, OH Monthly Total Precipitation	0.49	4.09	57.14	2.35	3.06	50.85
Hillsboro, OH Monthly Total Precipitation Normal	3.13	3.05	42.56	3.13	3.25	42.56
Hillsboro, OH Monthly climatic condition	below normal	above normal	above normal	below normal	below normal	above normal
Adams County						
West Union 6 ENE, OH Monthly Total Precipitation	0.54	5.16	57.36	2.89	2.27	48.11
West Union 6 ENE, OH Total Precipitation Normal	3.01	3.17	44.39	3.33	3.42	44.39
West Union 6 ENE, OH Monthly climatic condition	below normal	above normal	above normal	below normal	below normal	above normal

Pike County						
Piketon, OH Monthly Total Precipitation	0.91	3.79	51.28	2.60	2.23	48.63
Piketon, OH Total Precipitation Normal	2.77	2.90	40.43	3.17	3.31	40.43
Piketon, OH Monthly climatic condition	below normal	above normal	above normal	below normal	below normal	above normal
Scioto County						
Portsmouth, OH Monthly Total Precipitation	0.77	6.36	54.72	3.47	3.15	46.30
Portsmouth, OH Total Precipitation Normal	2.67	2.64	40.88	3.05	3.23	40.88
Portsmouth, OH Monthly climatic condition	below normal	above normal	above normal	above normal	below normal	above normal

Source: AgACIS, 2021

¹Displayed in inches

2.1.2 Drainage Basins

The ESC crosses four 8-digit Hydrologic Unit Code (HUC) watersheds, including Little Scioto-Tygarts (05090103), Lower Scioto (05060002), Ohio Brush-Whiteoak (05090201), and Paint (05060003). The ESC crosses fifteen 12-digit HUCs, as outlined in Table 2-2 (USGS, 2020).

TABLE 2-2: HUCs Crossed by the Project

Hillsboro – Millbrook Park 138 kV Transmission Line Rebuild Project

HUC 12-Digit Code	HUC 12-Digit Name
Baker Fork	050902010303
Big Run-Scioto River	050600021602
Camp Creek	050600021601
Chenoweth Fork	050600021205
Elk Run	050902010302
Headwaters Ohio Brush Creek	050902010301
Headwaters Rocky Fork	050600030503
Little East Fork Ohio Brush Creek-Ohio Brush Creek	050902010501
Long Run	050901030602
Middle Fork Ohio Brush Creek	050902010304
Miller Run-Scioto River	050600021603
Munn Run-Ohio River	050901030606
Rarden Creek	050600021502
South Fork Rocky Fork	050600030501
Wards Run-Little Scioto River	050901030605

Source: USGS 2020

2.1.3 Navigable Waters Protection Rule

The United States Environmental Protection Agency (USEPA) and the Department of the Army published the Navigable Waters Protection Rule on April 21, 2020 (33 CFR Part 328, effective June 22, 2020). In this final rule, the agencies interpret the term “waters of the United States” to encompass: “the territorial seas and traditional navigable waters (TNWs); perennial and intermittent tributaries that contribute surface water flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters” (USEPA and USACE, 2020). The final rule has not modified the definition of TNWs. One TNW, the Scioto River, crosses the Project ESC.

2.1.4 Nationwide Permits – Ohio 401 Water Quality Certification

The USACE issued its final rule on January 13, 2021, modifying and reissuing 12 existing nationwide permits (NWP) and issuing four entirely new NWPs, which went into effect on March 15, 2021 (Schirra, 2021). The USACE determined that the Ohio Environmental Protection Agency waived its certification for the 2021 NWPs, and therefore there is no corresponding 401 WQC permitting obligation for the 16 NWPs, including NWP 57 – Overhead Utilities. The status of Ohio’s 401 WQC requirements for specific NWPs may be subject to change and should be reviewed for permitting purposes as needed.

3 Wetland and Waterbody Delineation

3.1 Desktop Review

Prior to conducting the field investigations, Jacobs reviewed the following resources to identify the potential for wetlands and streams within the ESC:

- Aerial photo-based maps (ArcGIS Online “World Imagery” Basemap (AGOL, 2019a))
- USGS topographic maps (ArcGIS Online “USA Topo” Basemap (AGOL, 2019b))
- NRCS Web Soil Survey (NRCS, 2019)
- NWI maps (USFWS, 2019a)
- National Hydrography Dataset (NHD) (USGS, 2019)

According to the NRCS soil surveys of Highland, Adams, Pike and Scioto Counties (NRCS, 2019), 139 soil map units are crossed by the ESC. Of the 139 soil map units, 121 are listed as non-hydric, 16 are listed as predominately non-hydric, and two are listed as predominantly hydric (Figure 2-1 to 2-110; Table 3-1 in Table Appendix). NRCS data indicated that non hydric soils comprised 1,105 acres, which is 93 percent of the ESC. Seventy-eight acres or 7 percent is comprised of predominantly non-hydric soils, while 10 acres or 1 percent is comprised of predominantly hydric soils.

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

NWI data was obtained from the USFWS for review of potential wetlands that may occur within the ESC. The NWI data (USFWS, 2019) identifies the type of wetland or open water present at a location using the USFWS classification system (Cowardin et al., 1979). The NWI data indicates that there are mapped freshwater wetlands, freshwater ponds, and riverine systems present within the ESC including PEM1A, PEM1F, PFO1A, PSS1A, PUBGh, PUBGx, R2UBH, R2UBHh, R2UBHx, R4SBC, R4SBCx, and R5UBH (Figure 2-1 to 2-110) (USFWS 2019). The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. The information on NWI maps is obtained largely from aerial interpretation, may be outdated, and is only sporadically field-checked. Additional details regarding the mapped NWI wetlands within the ESC are provided in Table 3-2 (Table Appendix).

As shown on the FEMA floodplain panels (Figures 2-1 to 2-110), the ESC crosses the FEMA-mapped 100-year floodplain of seven waterbodies including: Elm Run, Elk Run, Middle Fork Ohio Brush Creek, Baker Fork, Scioto River, Candy Run, and Munn Run. In addition, the ESC crosses one mapped FEMA floodway, the Scioto River (FEMA, 2020).

3.2 Field Survey Methodology

From September through October 2019, Jacobs’ biologists surveyed the majority of the ESC by walking the corridor and evaluating for wetlands and other waterbodies. The remaining portions of the ESC were surveyed in January 2020 and December 2020.

The boundaries of each wetland and waterbody within the ESC were delineated and recorded using handheld global positioning system (GPS) units. For streams identified within the Project area, the ordinary high-water mark (OHWM) was used as the jurisdictional boundary.

Wetland, stream, and pond data were recorded on USACE Regional Supplement wetland determination data forms, Headwater Habitat Evaluation Index (HHEI) forms and Qualitative Habitat Evaluation Index (QHEI)

forms, and Jacobs' standard open water/pond data forms, respectively. All other land use, habitat, and other supplemental data was collected in a field notebook during the environmental survey.

3.2.1 Wetland Delineation

Wetland boundaries were field-delineated according to Section 404 of the Clean Water Act (CWA) and the routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers' Wetlands Delineation Manual* and subsequent guidance documents (USACE, 1987) and according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (USACE, 2012). Representative wetland and upland data points were recorded during the wetland delineation to determine the presence/absence of wetlands and/or document upland conditions within the Project area. Upland data points were determined not to be within wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils.

Wetland quality was evaluated using the OEPA Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA, 2000). Jacobs commonly assesses each Cowardin component of a wetland complex with a separate USACE wetland determination form. However, the ORAM evaluates the larger wetland complex as a unit and as a result each wetland component within a complex will receive the same ORAM score.

3.2.2 Stream Assessment

Jurisdictional streams were identified as those waters that possessed a continuously defined bed and bank, OHWM indicators, and lacked a dominance of upland vegetation in the channel. Per USACE guidance, the OHWM is defined as the "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). Channels that parallel a roadway or railroad were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

During the field survey, functional stream assessments were conducted using the methods described in the OEPA's *Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index* (OEPA, 2006) and in the OEPA's *Field Methods for Evaluating Primary Headwater Streams* (OEPA, 2018). The Qualitative Habitat Evaluation Index (QHEI), is used to characterize larger streams (drainage areas greater than 1 square mile), while the Primary Headwater Habitat Evaluation Index (HHEI) is appropriate for first-order and second-order headwater streams (drainage areas less than 1 square mile).

4 Field Survey Results

Jacobs' biologists surveyed the ESC in September through October 2019 as well as follow-up surveys in January 2020 and December 2020 by walking the corridor and evaluating for wetlands and other waters of the U.S. A total of 72 wetlands, 219 streams, and 14 ponds were delineated within the ESC. The features identified within the ESC are displayed and identified on the Delineated Features Map (Figure 3-1 through Figure 3-110).

Detailed information for wetland, stream, and pond features within the ESC is provided in Tables 4-1, 4-2, and 4-3 respectively. Jacobs defaults to the USACE and OEPA for the final determination of hydrologic connectivity and jurisdiction.

4.1 Wetlands

Seventy-two wetlands totaling 6.32 acres, ranging in size from less than 0.01 to 0.85 acre, were delineated within the ESC. The reported wetland acreage only corresponds to areas delineated within the ESC as some wetlands extended beyond the survey boundary. Of the 72 wetlands, 66 wetlands were identified as PEM wetlands, four were PSS wetlands, and two were PEM/PSS complexes. Summary information for each delineated wetland within the ESC is provided in Table 4-1 (in Table Appendix). Completed USACE wetland and upland forms are provided in Appendix A. Representative photographs (four cardinal directions and soil) were taken of each wetland during the field survey and are provided with the forms in Appendix A.

4.1.1 Wetland ORAM Results

A total of 49 Category 1 wetlands, 14 Category 2 wetlands, and nine Modified Category 2 wetlands were identified within the ESC. No Category 3 wetlands were identified within the ESC. Table 4-4 provides summary information regarding wetlands identified within the ESC, and the ORAM forms are included in Appendix B.

Of the 49 Category 1 wetlands, 46 were classified as PEM wetlands, two were classified as PSS wetlands, and one was classified as a PEM/PSS complex. These wetlands were classified as Category 1 wetlands based on ORAM scores ranging from 6 to 29.5. Generally, these wetlands scored low due to a variety of factors such as small size, intensity of surrounding land use, narrow buffer areas, disturbance to soils and hydrology, the lack of secondary growth vegetation, and the presence of invasive species.

Fourteen Category 2 wetlands and nine Modified Category 2 wetlands were identified within the ESC. Of the 14 Category 2 wetlands, 12 were classified as PEM wetlands, one was classified as a PSS wetland, and one was classified as a PEM/PSS wetland complex. Of the nine Modified Category 2 wetlands, eight were classified as PEM wetlands and one was classified as a PSS wetland. Category 2 wetlands were based on ORAM scores ranging from 30 to 44. Generally, the Category 2 wetlands exhibited medium upland buffers, very low to moderately high intensive surrounding land use (e.g. second growth forest, residential, fenced pasture), sparse to moderate percentage of invasive species, and had habitat and hydrology generally recovered or recovering from previous manipulation due to clear-cutting, shrub/sapling removal, and other disturbances, or with no disturbance at all.

No Category 3 wetlands were identified within the ESC.

TABLE 4-4: Wetland Summary Table

Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Wetland Type	ORAM Category				Number of Wetlands	Acreage within ESC
	Category 1	Category 2	Modified 2	Category 3		
PEM	46	12	8	0	66	5.20
PSS	2	1	1	0	4	0.21
PEM/PSS	1	1	0	0	2	0.91
Totals	49	14	9	0	72	6.32

4.2 Streams

A total of 219 streams, totaling 51,228 linear feet, were identified within the ESC. Of the 219 streams, 108 streams were identified as ephemeral streams, 86 were intermittent streams, and 25 were perennial streams. A total of 185 streams were assessed using the HHEI methodology (drainage area less than 1 mi²), nine streams were assessed using the QHEI methodology (drainage area greater than 1 mi²), and 25 streams have been identified with an existing designated use as outlined in the Ohio Administrative Code (OAC), OAC-3745-1-07. Table 4-2 (in Table Appendix) provides detailed information on the delineated streams.

4.2.1 QHEI Results

Nine streams, totaling 2,375 linear feet within the ESC, were evaluated using the QHEI methodology. One stream was classified as Poor Warmwater, four streams were classified as Fair Warmwater, and four were classified as Good Warmwater. Table 4-5 provides a summary of the QHEI results for streams identified within the ESC, and completed QHEI forms and representative photographs are provided in Appendix C.

TABLE 4-5: QHEI Stream Summary Table

Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Flow Regime	QHEI Narrative Category					Number of Streams	Length (feet) within ESC
	Very Poor Warmwater	Poor Warmwater	Fair Warmwater	Good Warmwater	Excellent Warmwater		
Intermittent	0	0	1	2	0	3	651
Perennial	0	1	3	2	0	6	1,724
Totals	0	1	4	4	0	9	2,375

4.2.2 HHEI Results

A total of 185 headwater streams, totaling 42,080 linear feet within the ESC, were evaluated using the HHEI methodology. Table 4-6 provides a summary of the HHEI results for streams identified within the ESC, and completed HHEI forms and representative photographs are provided in Appendix D. Note that one stream, Stream HM-143, was not assessed due to concerns of safely accessing the site (e.g., steep ravine/drop-off).

TABLE 4-6: HHEI Stream Summary Table

Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Flow Regime	HHEI Category ¹							Number of Streams	Length (feet) within ESC ²
	Modified Ephemeral	Ephemeral	Modified Small Drainage Warmwater	Small Drainage Warmwater	Spring Water	Conduct Biological Assessment	Not Assessed		
Ephemeral	46	24	16	21	0	1	0	108	21,520
Intermittent	10	8	25	25	2	1	1	72	19,125
Perennial	0	0	4	1	0	0	0	5	1,435
Totals	56	32	45	47	2	2	1	185	42,080

¹See Table 18 in *Field Methods for Evaluating Primary Headwater Streams in Ohio* (OEPA 2018).

²Numbers in this table have been rounded for presentation purposes. Thus, the totals may not reflect the exact sum of the addends in all cases.

4.2.3 Ohio Administrative Code Chapter 3745-1 Designated Use

The OEPA has established water use designation for streams throughout Ohio as outlined in the Ohio Administrative Code (OAC) Chapter 3745-1-07. There were 25 delineated stream segments that had a designated use as regulated under OAC Chapter 3745-1. These waterbodies were not assessed as Jacobs defaults to the assigned OAC designations. Table 4-7 provides a summary of waterbodies that cross the proposed alignment that have an assigned OAC designation and representative photographs are provided in Appendix E.

TABLE 4-7: OAC Chapter 3745-1 Stream Designations***Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project***

Stream Name	OAC Designation
<i>Scioto River Drainage Basin</i>	
Bear Creek	WWH
Bettys Creek	WWH
Bull Run	WWH
Big Run	WWH
Camp Creek	WWH
Candy Run	WWH
Drake Run	WWH
Devers Run	WWH
Left Fork Camp Creek	CWH
Rock Run	WWH
Rocky Fork	EWH
Scioto Brush Creek	WWH
Scioto River	WWH
Slate Run	WWH
South Fork Rocky Fork	EWH
Straight Fork	WWH
<i>Southeast Ohio Tributaries Drainage Basin</i>	
Bonser Run	WWH
Long Run	WWH
Munn Run	WWH
<i>Southwest Ohio Tributaries Drainage Basin</i>	
Baker Fork	EWH
Elk Run	WWH
Elm Run	WWH
Middle Fork Ohio Brush Creek	WWH
Straight Creek	WWH

Source: OEPA, 2017

WWH = warmwater habitat

CWH = cold water habitat

EWH = exceptional water habitat

4.3 Ponds/Open Water

Fourteen ponds totaling 2.07 acres were identified within the ESC. Table 4-3 (in Table Appendix) provides detailed information on the delineated ponds. Jacobs' Pond/Open Water forms with representative photographs are provided in Appendix F.

5 Protected Species

Jacobs reviewed the USFWS Ohio Ecological Services Office website (USFWS, 2017b) for information concerning which federally listed species were known to occur, or to potentially occur, in Highland, Adams, Pike, and Scioto Counties, Ohio. In addition, Jacobs was provided with Ohio Natural Heritage Database data from the Ohio Department of Natural Resources (ODNR) Division of Wildlife (DOW), on known occurrences of federally listed and state-listed species within a one-mile radius of the Project area.

5.1 Federal and State Agency Coordination Summary

Table 5-1, in the Table Appendix, includes the federally-listed species identified by the USFWS (USFWS, 2017b) as occurring, or potentially occurring, in Highland, Adams, Pike, and Scioto Counties, Ohio along with other habitat observations and information on recorded locations, if applicable. Table 5-1 also outlines state-listed species identified by the ODNR Division of Wildlife (DOW) (ODNR, 2020b) as being located within a one-mile radius of the Project area.

5.2 Protected Species Summary

Coordination with ODNR-DOW was initiated to obtain Environmental Review and Ohio Natural Heritage Database records within a 1-mile buffer area around the Project (ODNR-DOW, 2020a). Current information on the species provided through USFWS (USFWS, 2020) and the ODNR-DOW Ohio Natural Heritage Database is provided in Table 5-1 (Table Appendix).

A consultation request was submitted to the USFWS on September 9, 2019 and their response was received on December 18, 2019. USFWS stated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the project area. The USFWS also confirmed that the project area lies within the range of two federally-listed bat species (Indiana bat and northern long-eared bat), one mussel species (rayed bean), and two vascular plants (Virginia spiraea and running buffalo clover) (Table 5-1).

Portions of southern Scioto County are in Indiana bat hibernaculum buffers and roost tree buffers. The northern section of the line in Highland County is within many capture buffers of male and female Indiana bats and roost trees. Portions of the project are also within capture buffers of northern long-eared bats. The USFWS requested that AEP provide additional information regarding the extent of tree clearing within the proposed portions of the Project in Scioto and Highland Counties.

The endangered rayed bean is a freshwater mussel known to occur in Scioto Brush Creek and the Scioto River, both of which are spanned by the transmission line. The rayed bean prefers substrates of gravel and sand, and they are often associated with, and buried under the roots of, vegetation, including water willow (*Justicia americana*) and water milfoil (*Myriophyllum sp.*). The endangered clubshell (*Pleurobema clava*) and northern riffleshell (*Epioblasma torulosa rangiana*) mussels are also known to occur in the Scioto River. USFWS states that if the project directly or indirectly impacts any of the mussel streams above, they recommend a presence/absence mussel survey. Additionally, if any impact to native riparian vegetation is proposed they recommend further coordination with USFWS.

Known populations of *Virginia spiraea* occur in Ohio along long-established gravel bars in Scioto Brush Creek in Scioto County. The current alignment occurs in a township where this species is known to occur but does not cross the Scioto Brush Creek in this township. USFWS states that the current alignment does not impact this species; however, if the project proposes any re-alignments in this area then further coordination with USFWS will be required.

Lastly, the proposed Project also lies within the range of running buffalo clover. This species was recently proposed for delisting due to recovery. This species can potentially be found in partially shaded woodlots, mowed areas, and along streams, trails, and ROWs.

Consultation with USFWS is currently ongoing and recommendations for protection or minimization measures for federally listed species potentially present within the Project area will be provided.

A consultation request was submitted to the ODNR on September 9, 2019 and their e-mail response was received on January 22, 2020. The western 15,000 feet of the Project route, and the portion of the Project route between the Ohio River and the Scioto River, are within the vicinity of Indiana bat records. ODNR stated that if suitable Indiana bat habitat occurs within these project areas, it is recommended that trees be conserved. If trees must be cut or removed, the ODNR recommended cutting to occur between October 1 and March 31. The remainder of the Project route may not have records of Indiana bat, however, is still within the range of Indiana bat. If suitable habitat occur within the rest of the Project area and trees must be cut, ODNR recommended mist net surveys be conducted for the Indiana bat between June 1 and August 15, prior to any tree cutting.

According to ODNR, the Project must not have an impact on freshwater native mussels within the Project area and per the Ohio Mussel Survey Protocol (ODNR-DOW, 2016a), all Group 2, 3, and 4 streams require mussel surveys. No in-stream work is currently proposed during construction activities and will not directly impact streams crossed by the Project area. Therefore, mussel surveys will not likely be required. The ODNR-DOW recommends no in-water work in any perennial stream from April 15 through June 30 to reduce impacts to indigenous species and their habitat. Because no in-water work is proposed in any perennial stream within the Project area, the Project is not likely to impact threatened or endangered aquatic species.

The Project is within the range of timber rattlesnake, eastern spadefoot, and mud salamander. ODNR recommended that a DOW-approved herpetologist conduct a habitat suitability survey along the Project route to determine if suitable habitat exists for these species. Habitat surveys were completed in January 2021 and potentially suitable habitat was identified for the timber rattlesnake and mud salamander. No potentially suitable habitat was identified for the eastern spadefoot. Results have been submitted to ODNR and an avoidance/minimization plan will be developed and implemented.

Two bird species, including the lark sparrow and loggerhead shrike, are within the range of the Project. Habitat surveys were completed in January 2021 with suitable habitat identified for both species. If lark sparrow habitat will be impacted, ODNR recommends that construction be avoided in their nesting habitat during the period of May 1 to June 30. If loggerhead shrike habitat is present, construction should be avoided in their nesting habitat during April 1 to August 1. If suitable habitat cannot be avoided during nesting season, then presence/absence surveys will be conducted.

6 Conclusion

Jacobs conducted environmental surveys of the Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project from September through October 2019 and conducted subsequent surveys January 2020 and December 2020. A total of 72 wetlands, 219 streams, and 14 ponds were delineated within the ESC. The 72 wetlands, totaling 6.32 acres within the ESC, included 66 PEM wetlands, four PSS wetlands, and two PEM/PSS wetland complexes. Of the 72 wetlands, 49 were identified as Category 1 wetlands, 14 were identified as Category 2 wetlands, and nine were identified as Modified Category 2 wetlands. None were identified as Category 3 wetlands.

The 219 streams, totaling 51,228 linear feet, identified within the ESC include 108 ephemeral streams, 86 intermittent streams, and 25 perennial streams. A total of 185 streams were assessed using the HHEI methodology (drainage area less than 1 mi²) and nine streams were assessed using the QHEI methodology (drainage area greater than 1 mi²). There were 25 streams that had a designated use as regulated under OAC 3745-1. These waterbodies were not assessed as Jacobs defaults to the assigned OAC designations. While the jurisdictional status of these identified features is provided with tables of this report, the USACE and OEPA will provide the final determination of hydrologic connectivity and jurisdiction. Coordination with the USACE and OEPA is recommended prior to the submittal of any permit or construction activities, dependent on the planned impacts to wetlands and waterbodies.

The results of the environmental resource survey described in this report and conducted by Jacobs are limited to what was identified within the ESC, as depicted in Figure 3-1 through Figure 3-110. 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 for construction; therefore, lengths and acreages listed in this report may likely not constitute the actual impacts of the Project at the time of construction. If permits are determined to be necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

The wetland and waterbodies delineation field survey results presented within this report apply to the site conditions at the time of our assessment. Changes within the environmental survey corridor that may occur with time due to natural processes or human impacts at the Project site or on adjacent properties, could invalidate the findings of this report, especially if Jacobs is unaware and has not had the opportunity to revisit the Project survey area. Additionally, changes in applicable standards and regulations may also occur as a result of legislation or the expansion of knowledge over time. Therefore, the findings of this wetland and waterbodies delineation report may be invalidated, wholly or in part, by changes that are beyond the control of Jacobs.

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Table Appendix

TABLE 3-1: Mapped Soil Units

Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Symbol	Description	Hydric Classification	Acres
Adams County			
BkD	Berks silt loam, 15 to 25 percent slopes	Non-Hydric	5.36
BrC2	Bratton-Opequon complex, 8 to 15 percent slopes, eroded	Non-Hydric	17.24
CrB	Crider silt loam, 1 to 6 percent slopes	Non-Hydric	0.07
Ge	Gessie loam, frequently flooded	Non-Hydric	0.74
LbC	Latham silt loam, 8 to 15 percent slopes	Non-Hydric	4.86
LbD2	Latham silt loam, 15 to 25 percent slopes, eroded	Non-Hydric	2.81
No	Nolin silt loam, 0 to 3 percent slopes, occasionally flooded	Predominantly Non-Hydric	4.67
OmB	Omurga silt loam, 1 to 6 percent slopes	Non-Hydric	2.42
OpD2	Opequon silty clay loam, 15 to 25 percent slopes, eroded	Non-Hydric	9.30
OwB	Otwell silt loam, 1 to 6 percent slopes	Non-Hydric	0.67
ScF	Shelocta-Brownsville association, very steep	Non-Hydric	0.17
ShE	Shelocta-Berks association, steep	Non-Hydric	10.73
ShF	Shelocta-Berks association, very steep	Non-Hydric	24.38
SkF	Shelocta-Brownsville association, very steep	Non-Hydric	2.30
SmD	Shelocta-Muse association, hilly	Non-Hydric	8.62
SoE	Shelocta-Muse-Colyer association, steep	Non-Hydric	43.49
Sp	Skidmore gravelly loam, occasionally flooded	Predominantly Non-Hydric	2.69
TkA	Tilsit silt loam, 0 to 3 percent slopes	Non-Hydric	15.17
TrC	Trappist silt loam, 8 to 15 percent slopes	Non-Hydric	1.69
TsF	Trappist-Shelocta association, steep	Non-Hydric	1.99
WgC	Wernock silt loam, 8 to 15 percent slopes	Non-Hydric	2.79
Highland County			
Ag	Algiers silt loam	Predominantly Non-Hydric	5.90
BeC2	Beasley silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	1.60
BeD2	Beasley silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	1.79
BgF	Berks-Muskingum channery silt loams, 18 to 35 percent slopes	Non-Hydric	6.60
BhD	Berks-Muskingum-Neotoma channery silt loams, 6 to 18 percent slopes	Non-Hydric	0.63
BhF	Berks-Muskingum-Neotoma channery silt loams, 18 to 35 percent slopes	Non-Hydric	0.74
BhG	Berks-Muskingum-Neotoma channery silt loams, 35 to 50 percent slopes	Non-Hydric	0.70
BmC2	Boston-Bratton complex, 6 to 12 percent slopes, moderately eroded	Non-Hydric	36.46
BmC3	Boston-Bratton complex, 6 to 12 percent slopes, severely eroded	Non-Hydric	2.12
BmD2	Boston-Bratton complex, 12 to 18 percent slopes, moderately eroded	Non-Hydric	19.88
BmE2	Boston-Bratton complex, 18 to 25 percent slopes, moderately eroded	Non-Hydric	0.69
BnB	Boston-Grayford silt loams, 2 to 6 percent slopes	Non-Hydric	2.36
BnB2	Boston-Grayford silt loams, 2 to 6 percent slopes, moderately eroded	Non-Hydric	4.12
BpB	Bratton silt loam, 2 to 6 percent slopes	Non-Hydric	6.45
BpB2	Bratton silt loam, 2 to 6 percent slopes, moderately eroded	Non-Hydric	14.57
BpC2	Bratton silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	21.05
BpD2	Bratton silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	1.74
ChB	Cincinnati silt loam, 2 to 6 percent slopes	Non-Hydric	6.50
ChC2	Cincinnati silt loam, 6 to 12 percent slopes, eroded	Non-Hydric	0.08
CoF	Colyer-Trappist complex, 18 to 35 percent slopes	Non-Hydric	1.63

TABLE 3-1: Mapped Soil Units**Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project**

Symbol	Description	Hydric Classification	Acres
CoG	Colyer-Trappist complex, 35 to 50 percent slopes	Non-Hydric	1.40
DuA	Dubois silt loam, 0 to 2 percent slopes	Predominantly Non-Hydric	2.52
Ee	Eel silt loam, 0 to 2 percent slopes, occasionally flooded	Predominantly Non-Hydric	3.95
GbG	Gasconade flaggy silty clay loam, 35 to 50 percent slopes	Non-Hydric	4.09
Gn	Genesee silt loam, 0 to 2 percent slopes, occasionally flooded	Predominantly Non-Hydric	11.89
HbB	Haubstadt silt loam, 2 to 6 percent slopes	Non-Hydric	12.37
HbC2	Haubstadt silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	5.58
HbD2	Haubstadt silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	0.86
HkC2	Hickory silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	1.26
HkD2	Hickory silt loam, Illinoian Till Plain, 12 to 18 percent slopes, eroded	Non-Hydric	7.78
HkE2	Hickory silt loam, 18 to 25 percent slopes, moderately eroded	Non-Hydric	5.98
HkF2	Hickory silt loam, 25 to 35 percent slopes, moderately eroded	Non-Hydric	0.64
HyD3	Hickory clay loam, 12 to 18 percent slopes, severely eroded	Non-Hydric	6.39
HyE3	Hickory clay loam, 18 to 25 percent slopes, severely eroded	Non-Hydric	0.66
JeD	Jessup silt loam, 12 to 18 percent slopes	Non-Hydric	2.12
JoR1A1	Jonesboro-Rossmoyne silt loams, 0 to 2 percent slopes	Predominantly Non-Hydric	0.48
JoR1B1	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes	Non-Hydric	34.04
JoR1B2	Jonesboro-Rossmoyne silt loams, 2 to 6 percent slopes, eroded	Non-Hydric	6.90
LhB	Lawshe silty clay loam, 2 to 6 percent slopes	Non-Hydric	3.07
LhC2	Lawshe silty clay loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	1.09
LhD2	Lawshe silty clay loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	1.80
LID3	Lawshe silty clay, 12 to 18 percent slopes, severely eroded	Non-Hydric	1.38
LoC2	Loudon silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	4.54
LoD2	Loudon silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	0.04
NdC	Negley loam, 6 to 12 percent slopes	Non-Hydric	2.19
NdD	Negley loam, 12 to 18 percent slopes	Non-Hydric	1.36
NdE	Negley loam, 18 to 25 percent slopes	Non-Hydric	4.07
NfD3	Negley clay loam, 12 to 18 percent slopes, severely eroded	Non-Hydric	1.95
NnB	Nicholson silt loam, 2 to 6 percent slopes	Non-Hydric	4.76
No	Nolin silt loam, 0 to 3 percent slopes, occasionally flooded	Predominantly Non-Hydric	1.00
OpD2	Opequon silt loam, 6 to 18 percent slopes, moderately eroded	Non-Hydric	11.82
OpE2	Opequon silt loam, 18 to 25 percent slopes, moderately eroded	Non-Hydric	11.42
OsF2	Opequon stony silt loam, 18 to 35 percent slopes, moderately eroded	Non-Hydric	9.33
OsG	Opequon stony silt loam, 35 to 50 percent slopes	Non-Hydric	7.77
OtD3	Opequon clay, 6 to 18 percent slopes, severely eroded	Non-Hydric	11.06
OwC2	Otwell silt loam, 6 to 12 percent slopes, moderately eroded	Non-Hydric	2.72
OwD2	Otwell silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	0.47
OwE2	Otwell silt loam, 18 to 25 percent slopes, moderately eroded	Non-Hydric	1.52
OwF	Otwell silt loam, 25 to 35 percent slopes	Non-Hydric	1.54
Rn	Ross silt loam, 0 to 2 percent slopes, occasionally flooded	Predominantly Non-Hydric	0.91
RpC2	Rossmoyne silt loam, 6 to 12 percent slopes, eroded	Predominantly Non-Hydric	25.97
RpD2	Rossmoyne silt loam, 12 to 18 percent slopes, moderately eroded	Non-Hydric	0.31
SaB	Sardinia silt loam, 2 to 6 percent slopes	Predominantly Non-Hydric	0.16

TABLE 3-1: Mapped Soil Units

Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Symbol	Description	Hydric Classification	Acres
SeF	Shelocta-Berks association, very steep	Non-Hydric	1.39
Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	Predominantly Non-Hydric	3.38
Sn	Sloan silt loam	Predominantly Hydric	4.13
TrE	Trappist silt loam, 18 to 25 percent slopes	Non-Hydric	1.64
TsC2	Trappist-Muse silt loams, 6 to 12 percent slopes, moderately eroded	Non-Hydric	0.43
TsD2	Trappist-Muse silt loams, 12 to 18 percent slopes, moderately eroded	Non-Hydric	1.73
TsF	Trappist-Shelocta association, steep	Non-Hydric	0.39
TwE	Trappist-Shelocta association, steep	Non-Hydric	0.90
WID	Wellston silt loam, 12 to 18 percent slopes	Non-Hydric	1.87
WsS1B1	Westboro-Schaffer silt loams, 2 to 4 percent slopes	Predominantly Non-Hydric	0.08
Pike County			
Cf	Clifty silt loam, occasionally flooded	Non-Hydric	1.88
CoB	Coolville silt loam, 1 to 8 percent slopes	Non-Hydric	13.76
CoC	Coolville silt loam, 8 to 15 percent slopes	Non-Hydric	1.95
CpC	Coolville-Blairton association, rolling	Non-Hydric	5.43
CtC	Coolville-Rarden silt loams, 8 to 15 percent slopes	Non-Hydric	3.88
GpC	Gilpin silt loam, 8 to 15 percent slopes	Non-Hydric	7.69
GpD	Gilpin silt loam, 15 to 25 percent slopes	Non-Hydric	11.87
LhW1D1	Latham-Wharton silt loams, 15 to 25 percent slopes	Non-Hydric	42.69
RdC	Rarden silt loam, 8 to 15 percent slopes	Non-Hydric	3.97
SnF	Shelocta-Brownsville association, steep	Non-Hydric	4.29
SpF	Shelocta-Latham association, steep	Non-Hydric	30.90
TkA	Tilsit silt loam, 0 to 3 percent slopes	Non-Hydric	2.56
TsF	Trappist-Shelocta association, steep	Non-Hydric	4.75
WeB	Wernock Variant silt loam, 3 to 8 percent slopes	Non-Hydric	13.73
Scioto County			
AfD	Alford silt loam, 10 to 25 percent slopes	Non-Hydric	10.01
BeC	Berks channery silt loam, 8 to 15 percent slopes	Non-Hydric	29.92
BrF	Brownsville-Rock outcrop association, very steep	Non-Hydric	3.83
CoB	Coolville silt loam, 1 to 8 percent slopes	Non-Hydric	5.08
CpC	Coolville-Rarden silt loams, 8 to 15 percent slopes	Non-Hydric	19.83
FcA	Fitchville silt loam, 0 to 3 percent slopes	Predominantly Non-Hydric	5.11
Ge	Genesee silt loam, occasionally flooded	Non-Hydric	5.48
Ha	Haymond silt loam, occasionally flooded	Predominantly Non-Hydric	2.62
La	Landes fine sandy loam, occasionally flooded	Non-Hydric	0.83
LaGZD1	Latham-Gilpin association, hilly	Non-Hydric	28.37
Lah1C1	Latham silt loam, 8 to 15 percent slopes	Non-Hydric	1.80
Lah1D1	Latham silt loam, 15 to 25 percent slopes	Non-Hydric	17.30
LhW1D1	Latham-Wharton silt loams, 15 to 25 percent slopes	Non-Hydric	11.40
MoC2	Monongahela silt loam, 8 to 15 percent slopes, eroded	Non-Hydric	4.96
No	Nolin silt loam, 0 to 3 percent slopes, occasionally flooded	Predominantly Non-Hydric	7.04
OcB	Ockley loam, 1 to 8 percent slopes	Non-Hydric	7.92
Omu1B1	Omulga silt loam, 2 to 6 percent slopes	Non-Hydric	9.66

TABLE 3-1: Mapped Soil Units***Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project***

Symbol	Description	Hydric Classification	Acres
Omu1C1	Omulga silt loam, 6 to 12 percent slopes	Non-Hydric	6.59
Pe	Peoga silt loam, rarely flooded	Predominantly Hydric	5.64
Ro	Rossburg silty clay loam, occasionally flooded	Non-Hydric	10.01
SbB	Shelocta silt loam, 3 to 8 percent slopes	Non-Hydric	12.50
SbC	Shelocta silt loam, 8 to 15 percent slopes	Non-Hydric	1.12
SbD	Shelocta silt loam, 15 to 25 percent slopes	Non-Hydric	1.30
ScE	Shelocta-Brownsville association, steep	Non-Hydric	48.98
ScF	Shelocta-Brownsville association, very steep	Non-Hydric	208.06
Sk	Skidmore silt loam, occasionally flooded	Non-Hydric	7.11
SWLZE1	Shelocta-Wharton-Latham association, steep	Non-Hydric	20.41
TcB	Tilsit-Coolville association, undulating	Non-Hydric	8.89
W	Water	Non-Hydric	1.44
WfD	Wharton silt loam, 15 to 25 percent slopes	Non-Hydric	4.13
WpB	Wheeling-Urban land complex, 1 to 8 percent slopes	Non-Hydric	1.51
Total:			1,193

TABLE 3-2: Mapped National Wetland Inventory Features
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

NWI Code	Description	Figure 3	Related Field Inventoried Resource	Comments
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-1, 3-2	Stream HM-001	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-2, 3-3	Stream HM-002	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-4	Stream HM-003	
PSS1A	Palustrine scrub-shrub, broad-leaved deciduous, temporary flooded	3-4	Upland HM-087	Upland riparian gently sloping away from Stream HM-004
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-4	Stream HM-004	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-4	Stream HM-005	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-4	Stream HM-007a	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-4	Stream HM-007a	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-4, 3-5	Stream HM-007b	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-6	Pond HM-001	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-6	Stream HM-011	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-7	Stream HM-014	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-8	Stream HM-018	Pond located outside of ESC
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-8	Stream HM-019	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-8, 3-9	Stream HM-020	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-9	Stream HM-021	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-10	Pond HM-002	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-10	Stream HM-025	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-11	Stream HM-028	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-11, 3-12	Stream HM-029	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-12	Stream HM-030	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-12	Stream HM-031	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-12, 3-13	Stream HM-032	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-13	Stream HM-034	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-14	Stream HM-035	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-17	Stream HM-041	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-18	Pond HM-003	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-18	Stream HM-043	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-20	none	NWI is associated with a stream just outside of the ESC
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-21	Stream HM-047	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-23, 3-24	Stream HM-052	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-24	Stream HM-054	
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	3-25	Stream HM-056	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-26	Stream HM-058	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-28	Upland HM-090	Upland pasture, no sign of wetland
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-29	Stream HM-064	

TABLE 3-2: Mapped National Wetland Inventory Features
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

NWI Code	Description	Figure 3	Related Field Inventoried Resource	Comments
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-30	Stream HM-070	
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	3-30	Stream HM-072	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-31, 3-32	Stream HM-073	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-33	Stream HM-074	
PEM1A	Palustrine emergent, persistent, temporary flooded	3-33, 3-34	Upland HM-091	Upland steep hillslope, no sign of wetland
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-34	Stream HM-075	
PEM1A	Palustrine emergent, persistent, temporary flooded	3-34, 3-35	Upland HM-092	Upland hillside, no sign of wetland
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-34, 3-35	Stream HM-076	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-35	Wetland HM-032	
PEM1A	Palustrine emergent, persistent, temporary flooded	3-35	Wetland HM-033	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-37, 3-38	Stream HM-083	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-38, 3-39	Stream HM-087	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-39	Stream HM-088	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-40	Wetland HM-037	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-41, 3-42	Stream HM-092	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-42	Stream HM-093	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-42, 3-43	Stream HM-096	
PEM1A	Palustrine emergent, persistent, temporary flooded	3-43	Wetland HM-042	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-44	Stream HM-100	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-44	Stream HM-103	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-45	Stream HM-106	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-46	Stream HM-110	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-46, 3-47	Stream HM-113	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-47	Stream HM-115	
PUBGx	Palustrine unconsolidated bottom, intermittently exposed, excavated	3-47, 3-48	Wetland HM-046	
PUBGx	Palustrine unconsolidated bottom, intermittently exposed, excavated	3-49	Pond HM-007	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-49	Stream HM-117	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-50	Stream HM-118	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-50, 3-51	Stream HM-119	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-51, 3-52	Stream HM-120	
PEM1F	Palustrine emergent, persistent, semipermanently flooded	3-52	Pond HM-008	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-53	Stream HM-122	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-54, 3-55	Stream HM-126	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-56	Stream HM-127	
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	3-56	Stream HM-128	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-57	Stream HM-129	

TABLE 3-2: Mapped National Wetland Inventory Features
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

NWI Code	Description	Figure 3	Related Field Inventoried Resource	Comments
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-59	Pond HM-009	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-59, 3-60	Stream HM-131	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-61	Stream HM-132	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-63	Stream HM-134	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-64	Stream HM-230	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-64, 3-65	Stream HM-232	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-65	Stream HM-234	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-67	Stream HM-135	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-69	Stream HM-140	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-69, 3-70	Stream HM-142	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-72	Stream HM-144	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-73	Stream HM-148	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-73	Stream HM-152	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-74	Stream HM-154	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-75, 3-76	Stream HM-159	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-76, 3-77	Stream HM-163	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-78	Stream HM-166	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-79	Stream HM-167	
PUBGx	Palustrine unconsolidated bottom, intermittently exposed, excavated	3-81	Pond HM-011	
PUBGx	Palustrine unconsolidated bottom, intermittently exposed, excavated	3-81	Wetland HM-061	
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	3-82	Stream HM-170	
PFO1A	Palustrine forested, broad-leaved deciduous, temporary flooded	3-84	Stream HM-171	
R4SBCx	Riverine intermittent, streambed, seasonally flooded, excavated	3-84	Stream HM-171	
R2UBHh	Riverine lower perennial, unconsolidated bottom, permanently flooded, diked/impounded	3-85	Stream HM-174	
R5UBH	Riverine unknown perennial, unconsolidated bottom, permanently flooded	3-85	Stream HM-174	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-86, 3-87	Stream HM-175	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-89	Stream HM-178	
R2UBH	Riverine lower perennial, unconsolidated bottom, permanently flooded	3-89, 3-90	Stream HM-179	
PUBGh	Palustrine unconsolidated bottom, intermittently exposed, diked/impounded	3-94, 3-95	Pond HM-013	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-95	Stream HM-187	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-96, 3-97	Stream HM-190	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-100, 3-101	Stream HM-200	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-102	Stream HM-205	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-103	Stream HM-206	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-104	Stream HM-207	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-109	Stream HM-213	

TABLE 3-2: Mapped National Wetland Inventory Features***Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project***

NWI Code	Description	Figure 3	Related Field Inventoried Resource	Comments
R2UBHx	Riverine lower perennial, unconsolidated bottom, permanently flooded, excavated	3-109, 3-110	Stream HM-216	
R4SBC	Riverine intermittent, streambed, seasonally flooded	3-109, 3-110	Stream HM-216	

TABLE 4-1: Delineated Wetland Table
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Wetland ID	Location		Preliminary Jurisdictional Status ¹	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing/Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland HM-001	39.17224	-83.67508	Jurisdictional	PEM	0.05	33	2	344 / 2	None	None	TBD	TBD	0
Wetland HM-002	39.16555	-83.65917	Non-Jurisdictional	PEM	0.01	29	1	336 / 10	None	None	TBD	TBD	0
Wetland HM-003	39.16044	-83.64723	Jurisdictional	PSS	0.01	34.5	2	331 / 15	None	None	TBD	TBD	0
Wetland HM-004	39.15957	-83.64548	Jurisdictional	PEM	0.02	36.5	Modified 2	330 / 16	None	None	TBD	TBD	0
Wetland HM-005	39.15648	-83.63841	Jurisdictional	PEM	0.03	37	Modified 2	325 / 20	None	None	TBD	TBD	0
Wetland HM-006	39.15135	-83.62632	Jurisdictional	PEM	0.04	21	1	320 / 25	None	None	TBD	TBD	0
Wetland HM-007	39.15066	-83.62468	Jurisdictional	PEM	0.05	15	1	320 / 25	None	None	TBD	TBD	0
Wetland HM-008	39.15021	-83.62345	Jurisdictional	PEM	0.29	31	2	319 / 26	None	None	TBD	TBD	0
Wetland HM-009	39.14776	-83.61753	Jurisdictional	PEM	0.11	34	2	317 / 28	None	None	TBD	TBD	0
Wetland HM-010	39.14729	-83.61650	Jurisdictional	PEM	0.19	41	Modified 2	316 / 29	None	None	TBD	TBD	0
Wetland HM-011	39.14676	-83.61499	Jurisdictional	PEM	0.06	38	Modified 2	315 / 30	None	None	TBD	TBD	0
Wetland HM-012	39.12822	-83.57010	Jurisdictional	PEM	0.08	17	1	295 / 48	None	None	TBD	TBD	0
Wetland HM-013	39.12141	-83.55365	Non-Jurisdictional	PEM	0.10	13	1	281 / 55	None	None	TBD	TBD	0
Wetland HM-014	39.11523	-83.54212	Jurisdictional	PEM	0.17	15	1	282 / 61	None	None	TBD	TBD	0
Wetland HM-015	39.11525	-83.54141	Jurisdictional	PEM	0.03	16	1	274 / 62	None	None	TBD	TBD	0
Wetland HM-016	39.11152	-83.53282	Jurisdictional	PEM	0.03	18	1	277 / 66	None	None	TBD	TBD	0
Wetland HM-017	39.10963	-83.52909	Jurisdictional	PEM	0.04	14.5	1	269 / 68	None	None	TBD	TBD	0

TABLE 4-1: Delineated Wetland Table
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Wetland ID	Location		Preliminary Jurisdictional Status ¹	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing/Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland HM-018	39.10600	-83.52147	Jurisdictional	PEM	0.07	22	1	266 / 71	None	None	TBD	TBD	0
Wetland HM-019	39.10202	-83.51306	Jurisdictional	PEM	0.01	21	1	267 / 76	None	None	TBD	TBD	0
Wetland HM-020	39.10059	-83.50993	Jurisdictional	PEM	<0.01	18	1	266 / 77	None	None	TBD	TBD	0
Wetland HM-021	39.09420	-83.49624	Jurisdictional	PSS	0.14	24.5	1	254 / 84	None	None	TBD	TBD	0
Wetland HM-022	39.08469	-83.46692	Jurisdictional	PEM	0.02	34.5	2	241 / 97	None	None	TBD	TBD	0
Wetland HM-023	39.08300	-83.46182	Jurisdictional	PEM	0.19	10.5	1	243A / 99	None	None	TBD	TBD	0
Wetland HM-024	39.07260	-83.43225	Jurisdictional	PEM	0.11	18.5	1	231 / 112	None	None	TBD	TBD	0
Wetland HM-025	39.06910	-83.42036	Jurisdictional	PEM	0.05	6	1	225 / 117	None	None	TBD	TBD	0
Wetland HM-026	39.06799	-83.41774	Jurisdictional	PEM	0.10	17	1	224 / 118	None	None	TBD	TBD	0
Wetland HM-027	39.06420	-83.40628	Jurisdictional	PEM	0.03	29.5	1	215 / 123	None	None	TBD	TBD	0
Wetland HM-028	39.06188	-83.39957	Jurisdictional	PEM	0.11	35	Modified 2	213 / 125	None	None	TBD	TBD	0
Wetland HM-029	39.06014	-83.39377	Jurisdictional	PEM	0.04	27	1	215 / 127	None	None	TBD	TBD	0
Wetland HM-030	39.04798	-83.36685	Non-Jurisdictional	PSS	0.03	15.5	1	203 / 136	None	None	TBD	TBD	0
Wetland HM-031	39.04675	-83.36477	Jurisdictional	PEM	0.08	23.5	1	205 / 137	None	None	TBD	TBD	0
Wetland HM-032	39.04520	-83.36115	Jurisdictional	PEM	0.69	29.5	1	203 / 139	None	None	TBD	TBD	0
Wetland HM-033	39.04352	-83.35743	Jurisdictional	PEM	0.22	18	1	199 / 140	None	None	TBD	TBD	0
Wetland HM-034	39.04135	-83.35277	Jurisdictional	PEM	0.15	40	Modified 2	200 / 142	None	None	TBD	TBD	0

TABLE 4-1: Delineated Wetland Table
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Wetland ID	Location		Preliminary Jurisdictional Status ¹	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing/Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland HM-035	39.03788	-83.34537	Jurisdictional	PEM	<0.01	31	2	197 / 144	None	None	TBD	TBD	0
Wetland HM-036	39.03045	-83.32728	Non-Jurisdictional	PEM	0.01	25	1	190 / 151	None	None	TBD	TBD	0
Wetland HM-037	39.02620	-83.31634	Non-Jurisdictional	PSS	0.03	35.5	Modified 2	185 / 155	None	None	TBD	TBD	0
Wetland HM-038	39.02372	-83.30984	Non-Jurisdictional	PEM	0.01	26	1	181 / 158	None	None	TBD	TBD	0
Wetland HM-039*	39.02354	-83.30931	Non-Jurisdictional	PEM	0.05	32	2	181 / 159	None	None	TBD	TBD	0
Wetland HM-040*	39.02355	-83.30933		PSS	0.02			181 / 159	None	None	TBD	TBD	0
Wetland HM-041	39.01966	-83.29745	Jurisdictional	PEM	0.01	27	1	176 / 163	None	None	TBD	TBD	0
Wetland HM-042	39.01655	-83.28457	Jurisdictional	PEM	0.01	24	1	172 / 167	None	None	TBD	TBD	0
Wetland HM-043	39.01454	-83.27781	Jurisdictional	PEM	0.03	31	2	169 / 169	None	None	TBD	TBD	0
Wetland HM-044	39.01330	-83.27204	Jurisdictional	PEM	0.04	18.5	1	167 / 170	None	None	TBD	TBD	0
Wetland HM-045	39.01319	-83.27130	Jurisdictional	PEM	0.02	44	Modified 2	167 / 171	None	None	TBD	TBD	0
Wetland HM-046	39.00601	-83.23953	Non-Jurisdictional	PEM	0.20	33	2	157 / 181	None	None	TBD	TBD	0
Wetland HM-047	39.00056	-83.22334	Jurisdictional	PEM	0.02	25	1	151 / 188	None	None	TBD	TBD	0
Wetland HM-048	38.99766	-83.21803	Jurisdictional	PEM	0.19	34.5	2	149 / 190	None	None	TBD	TBD	0
Wetland HM-049	38.98852	-83.20120	Jurisdictional	PEM	0.14	20.5	1	141 / 196	None	None	TBD	TBD	0
Wetland HM-050	38.97864	-83.18322	Jurisdictional	PEM	0.09	27	1	135 / 203	None	None	TBD	TBD	0
Wetland HM-051	38.95896	-83.14585	Jurisdictional	PEM	0.02	13	1	118 / 219	None	None	TBD	TBD	0

TABLE 4-1: Delineated Wetland Table
Hillsboro to Millbrook Park 138 kV Transmission Line Rebuild Project

Wetland ID	Location		Preliminary Jurisdictional Status ¹	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing/Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland HM-052	38.92631	-83.09737	Jurisdictional	PEM	0.02	27	1	94 / 243	None	None	TBD	TBD	0
Wetland HM-053	38.92480	-83.09518	Jurisdictional	PEM	0.21	30	2	93 / 244	None	None	TBD	TBD	0
Wetland HM-054	38.92187	-83.09169	Jurisdictional	PEM	<0.01	21	1	91 / 246	None	None	TBD	TBD	0
Wetland HM-055	38.91677	-83.08398	Jurisdictional	PEM	0.01	20	1	88 / 249	None	None	TBD	TBD	0
Wetland HM-056	38.90211	-83.06508	Jurisdictional	PEM	0.02	16	1	79 / 258	None	None	TBD	TBD	0
Wetland HM-057	38.90017	-83.06333	Jurisdictional	PEM	<0.01	19	1	78 / 259	None	None	TBD	TBD	0
Wetland HM-058	38.89997	-83.06255	Non-Jurisdictional	PEM	<0.01	19	1	78 / 259	None	None	TBD	TBD	0
Wetland HM-059	38.88342	-83.04056	Non-Jurisdictional	PEM	0.02	24	1	71 / 265	None	None	TBD	TBD	0
Wetland HM-060	38.87603	-83.03188	Non-Jurisdictional	PEM	0.03	20	1	66 / 269	None	None	TBD	TBD	0
Wetland HM-061	38.86959	-83.01835	Jurisdictional	PEM	0.15	16	1	60 / 276	None	None	TBD	TBD	0
Wetland HM-062*	38.86478	-82.99228	Jurisdictional	PEM	0.41	29	1	54 / 285	None	None	TBD	TBD	0
Wetland HM-063*	38.86480	-82.99232		PSS	0.44			50 / 285	None	None	TBD	TBD	0
Wetland HM-064	38.85868	-82.98541	Jurisdictional	PEM	0.16	27	1	50 / 288	None	None	TBD	TBD	0
Wetland HM-065	38.85780	-82.98476	Jurisdictional	PEM	0.11	24	1	49 / 289	None	None	TBD	TBD	0
Wetland HM-066	38.85359	-82.98199	Jurisdictional	PEM	0.11	33	2	46 / 292	None	None	TBD	TBD	0
Wetland HM-067	38.83857	-82.97338	Non-Jurisdictional	PEM	0.03	32	2	38 / 297	None	None	TBD	TBD	0
Wetland HM-068	38.82262	-82.95930	Non-Jurisdictional	PEM	0.12	34	2	30 / 305	None	None	TBD	TBD	0

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Summary: Notice Hillsboro-Millbrook 138 kV Line Rebuild Project Part 1 electronically filed by Tanner Wolfram on behalf of AEP Ohio Transmission Company, Inc.