Construction Notice for the South Point – Portsmouth 138-kV Transmission Line Cut-In Project

PUCO Case No. 23-0576-EL-BNR

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

Submitted by:
AEP Ohio Transmission Company, Inc.

May 23, 2023

Construction Notice

South Point – Portsmouth 138-kV Transmission Line Cut-In Project

4906-6-05

AEP Ohio Transmission Company, Inc. ("'AEP Ohio Transco" or 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 the South Point – Portsmouth 138-kV Transmission Line Cut-In Project ("Project"), in Porter Township, Scioto County, Ohio. The Project involves installing a three pole 138-kV structure along the existing South Point – Portsmouth 138-kV Transmission Line in order to cut-in to the new Cottrell North and South 138-kV Transmission Line Extension (approved in Case Number 22-0950-El-BLN). Two poles are to electrically connect the Cottrell North and South 138-kV Transmission Line to the South Point – Portsmouth 138-kV Transmission Line, and one pole is to prevent conductor blowout between the transmission circuits of the South Point-Portsmouth 138-kV Transmission Line.

The location of the proposed transmission lines ("Project Area") is shown in **Exhibit 1** and **Exhibit 2** in **Appendix A**.

The Project meets the requirements for a Construction Notice (CN) because it is within the types of projects defined by item 2(a) of Ohio Administrative Code Section 4906-1-01 Appendix A of the *Application Requirement Matrix for Electric Power Transmission Lines*:

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

    a) Two miles or less.

The Project has been assigned PUCO Case No. 23-0576-EL-BNR**.**

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 is part of a larger area improvements project to address a baseline thermal criteria issue associated with the Millbrook Park-Franklin Furnace 69-kV Transmission Line in Scioto County. The Franklin-Wheelersburg 69-kV line is overloaded to 101% for the loss of the Fuller-Argentum (EKPC) 138 kV Line.

To address this, the larger area improvements project will require the following work:

- Install the new non-jurisdictional distribution stepdown Cottrell 138-12 kV Station.
- Construct Cottrell North and South 138-kV Transmission Line Extensions.
- Install structures to connect the South Point-Portsmouth 138-kV Transmission Line to the Cottrell North and South 138-kV Transmission Line Extensions, and one structure on the South Point-Portsmouth 138-kV Transmission line to prevent conductor blowout to the Cottrell North and South 138-kV Transmission Line Extensions (Project).
- Installation of the new 3-way MOAB switch referred to as Sadiq Switch.
- Replace Wheelersburg 69-kV Station with a new non-jurisdictional distribution stepdown Sweetgum 138-12 kV Station.
- Install the new non-jurisdictional stepdown Althea 138-69 kV Station.
- Rebuild ~1.9 mile of 138-kV transmission line from East Wheelersburg Substation to Sadiq Switch.
- Build ~0.2 miles of 138-kV transmission line from Sadiq Switch to Texas Eastern.
- Build ~1.4 miles of 138-kV transmission line from Sadiq Switch to Sweetgum Station, and
- Build ~3.0 miles of new 138-kV line from Sweetgum Station to Althea Station to address baseline thermal overload issues.

The subject and need of this filing involve the construction of a 3-pole 138-kV custom structure for the purposes of connecting the new Cottrell North and South 138-kV Transmission Line Extension (filed as PUCO Case Number 22-0950-EL-BLN) to the existing South Point – Portsmouth 138-kV Transmission Line.

In conjunction with the larger area improvements, the associated 11.3 miles of 69-kV transmission line between Millbrook Park Station and Franklin Furnace Switch will be removed, along with Sciotoville 69-kV Station and Wheelersburg Station, which are currently served from the 69-kV transmission line.

Failure to implement the proposed project in the specified period of time will likely result in PJM implementing operational controls which may include preemptive shedding of a significant amount of load served from the area transmission and distribution network in order to alleviate the thermal issues associated with the scenario identified above. Although load shedding is an approved PJM operational procedure to control thermal overloads, load shedding is not acceptable from AEP Ohio Transco's perspective and directly impacts both large commercial and residential customers in the area. The proposed solution for this baseline identified need is necessary for AEP Ohio Transco to continue to provide safe, reliable service to its customers.

The Project was presented at the PJM SRRTEP on January 7, 2015 and January 28, 2021 meetings, and subsequently assigned a PJM # of b2604. This Project was included in a supplement to the Company's

2023 Long Term Forecast Report, and is located on page 59, 60 and 61 (Table FE-T9, Specifications of Planned Transmission Lines), see **Appendix B**.

B(3) Project Location

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

The location of the Project in relation to the existing South Point-Portsmouth 138 kV Transmission Line and proposed, non-jurisdictional Cottrell Station is shown in **Exhibit 1** of **Appendix A**.

B(4) Alternatives Considered

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

The proposed Project includes the construction of a three pole 138-kV structure to connect the existing South Point – Portsmouth 138-kV Transmission Line to the new Cottrell North and South 138-kV Transmission Line Extension to service the proposed, non-jurisdictional Cottrell Substation. The structure location is within the Company's existing ROW along the existing South Point – Portsmouth 138-kV Transmission Line. The proposed design minimizes disturbances to environmental features as it is located within an area of existing transmission line right-of-way. Therefore, the proposed Project would result in minimal disturbances relative to other design alternatives and represents the most suitable location and most appropriate solution.

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 maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project. The Company also retains land agents who will discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

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

Construction of the Project is planned to start in October 2023, with a proposed in-service date of January 2024.

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** provides the proposed Project area on a map of 1:24,000-scale (1-inch equals 2,000 feet) on the Minford United States Geological Survey (USGS) 7.5-minute topographic map of the Project area. **Exhibit 2** in **Appendix A** shows the Project area on ESRI World Imagery at a scale of 1:3,000-scale (1-inch equals 250 feet). The ESRI World Imagery is dated September 2022.

Exhibit 2 in **Appendix A** shows the structure location in relation to the new Cottrell North and South 138-kV Transmission Line Extension and the existing South Point – Portsmouth 138-kV Transmission Line on an aerial image with clearly marked streets, roads, and highways. To visit the Project from Columbus, take US-23 south for approximately 75 miles then head east on State Route 823 in Valley Township. Continue on State Route 823 for 15 miles and take the exit towards OH-140 E/Webster Street. Turn left onto OH-140 and continue for approximately one mile. The Project area will be on the right.

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 is within the existing South Point – Portsmouth 138-kV Transmission Line ROW on Parcel ID 160148000. The Company has obtained an easement for the parcel. No other property easements, options, or land use agreements are necessary to construct the Project or operate the station.

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: 138 kV
Conductors: (6) 795 KCM ACSR (26/7)
Static Wire: (1) 7#8 Alumoweld, (1) OPGW
Insulators: Polymer
ROW Width: 100 Feet
Structure Type: 3-pole custom dead end on pier foundation

B(9)(b) Electric and Magnetic Fields
No occupied residences or institutions are located within 100 feet of the Project.

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 $2.5 million using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in 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) 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 in Porter Township, Scioto County, Ohio. Land use observed within the Project area includes undeveloped land and is located within existing ROW.

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 Scioto County Auditor's office was contacted in May 2023 to obtain information about Agricultural District Lands. No Agricultural District Lands are present within Scioto County or are within the potential disturbance area of the Project.

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.

Due to the proximity to the Cottrell North and South 138-kV Transmission Line Extension Project, the cultural resource survey for this Project area was completed as part of the Cottrell North and South 138-kV Transmission Line Extension Project. Phase I Cultural Resource Management Investigations Reports were conducted in September 2022 and provided to the Ohio State Historic Preservation Office (SHPO) for consultation. These investigations did not result in the identification of any archaeological deposits or significant architectural resources identified in the project's area of potential effect. Therefore, SHPO responded on October 11, 2022 and concurred that the Project as proposed would have no effect on historic properties. No further coordination with SHPO is necessary. SHPO coordination letters are provided in **Appendix C.**

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

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

Due to the proximity to the Cottrell North and South 138-kV Transmission Line Extension Project, the local, state, and federal agency correspondence for this Project area was completed as part of the Cottrell North and South 138-kV Transmission Line Extension Project. A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000006. The Company will implement and maintain best management practices as outlined in the project-specific Stormwater Pollution Prevention Plan to minimize erosion and sediment to protect surface water quality during storm events.

The Company's consultant conducted a stream and wetland delineation within the Cottrell North and South 138-kV Transmission Line Extension Project area. One wetland was identified within the area. No fill is intended for the wetland; therefore, coordination with the U.S. Army Corps of Engineering is not anticipated for this Project. The Ecological Survey Report is provided in **Appendix D.**

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), a portion of the South Point – Portsmouth 138-kV Transmission Line Cut-In Project is located in a 100-year floodplain. As such, the Company will obtain a floodplain permit from the Scioto County Floodplain Manager for the construction of all 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)(e) Threatened, Endangered, and Rare Species

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

Due to the proximity to the Cottrell North and South 138-kV Transmission Line Extension Project, the evaluation for threatened, endangered, and rare species for this Project area was completed as part of the Cottrell North and South 138-kV Transmission Line Extension Project. Coordination letters were sent to U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources-Division of Wildlife (ODNR-DOW). USFWS responses were received on December 20, 2021 and ODNR-DOW's response was received on January 14, 2022. Copies of the agencies' correspondence letters are provided in **Appendix C.**

Based on consultation from the USFWS, the Project area lies within range of two federally listed species including Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). The USFWS recommended avoiding tree removal, wherever possible. However, if clearing of trees ≥3 inches diameter breast height (dbh) cannot be avoided, the USFWS recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Minimal tree clearing may be required and is expected to be no

more than 0.1 total acre. Tree clearing is anticipated to occur between October 1 and March 31; however, if seasonal tree cutting cannot be implemented, the Company will coordinate with USFWS.

ODNR stated that the entire state of Ohio is within the range of the Indiana bat, northern long-eared bat, little brown bat, and the tricolored bat. If trees are present within the Project area, and trees must be cut, the Division of Wildlife (DOW) recommends cutting only occur from October 1 – March 31, conserving trees with loose, shaggy bark and/or crevices holes, or cavities as well as trees with diameter at breast height (dbh) ≥ 20 inches if possible. If trees are present within the Project area and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting.

ODNR also recommends that a desktop habitat assessment, followed by a field assessment if needed, be conducted to determine if there are potential hibernaculum(a) present within 0.25 miles of the Project area. The Company's consultant completed a desktop habitat assessment in accordance with the 2022 Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines. No active or abandoned mines, areas with karst geology or karst features were identified within 0.25-mile buffer of the Project area. In addition, no potential bat hibernacula were observed within the Project area during the field surveys. Tree clearing is anticipated to occur between October 1 – March 31; however, if this is not feasible then the Company will coordinate with the agencies.

According to the ODNR response letter, the Project is within the range of the federally-listed endangered clubshell, fanshell, northern riffleshell, pink mucket, purple cat's paw, rayed bean, sheepnose, and snuffbox, state-listed endangered butterfly, ebonyshell, elephant-ear, little spectaclecase, long-solid, monkeyface, Ohio pigtoe, pyramid pigtoe, sharp-ridged pocketbook, wartyback, washboard, and yellow sandshell, state-listed threatened black sandshell, fawnsfoot, and threehorn wartyback. DOW stated that due to the location and absence of proposed in-water work in a perennial stream of sufficient size, this Project is not likely to impact these species.

According to the ODNR response letter, the Project is within the range of the state-listed endangered bigeye shiner, gilt darter, goldeye, mountain madtom, northern brook lamprey, shovelnose sturgeon, northern madtom, popeye shiner, shoal chub, and shortnose gar, and the state-listed threatened American eel, blue sucker, channel darter, paddlefish, river darter and Tippecanoe darter. ODNR recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to indigenous aquatic species and their habitat. However, due to the location and absence of perennial stream within the Project area, this Project is not likely to impact these species.

According to the ODNR response letter, the eastern hellbender, a state-listed endangered species and a federal species of concern, is within range of the Project site. However, DOW stated that due to the location and absence of proposed in-water work in a perennial stream of sufficient size to provide suitable habitat, this Project is not likely to impact this species.

The ODNR response also stated that the Project is within the range of the state-listed endangered and federal species of concern timber rattlesnake, the state-listed endangered eastern spadefoot toad, the state-listed endangered green salamander, the state-listed threatened midland mud salamander, and the state-listed endangered Alleghany woodrat. However, DOW stated that due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.

The ODNR response letter also included species from the Natural Heritage Database located at or within a one-mile radius of the Project area. The Natural Heritage Database list included the following species: two records of state-listed plant species and three records of state-listed freshwater mussels. One of the plant species, the riverbank paspalum, has potentially suitable habitat within the Project area, however, the plant species was not observed during the wetland and waterbody delineation field surveys. Therefore, impacts are not anticipated to the riverbank paspalum.

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.

Due to the proximity to the Cottrell North and South 138-kV Transmission Line Extension Project, the areas of ecological concern for this Project area was evaluated as part of the Cottrell North and South 138-kV Transmission Line Extension Project. As stated in Section B(10)(e), a copy of the correspondence letters received from the USFWS and ODNR-DOW are provided in **Appendix C**. USFWS indicated no impacts to proposed or designated critical habitats. The ODNR indicated no known unique ecological sites, geologic features, scenic rivers, state wildlife areas, state natural preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the Project area.

The Company's consultant prepared an Ecological Survey Report, which is provided in **Appendix D**. The survey of the Project area identified one palustrine scrub-shrub wetland. However, no fill is anticipated within the delineated wetland.

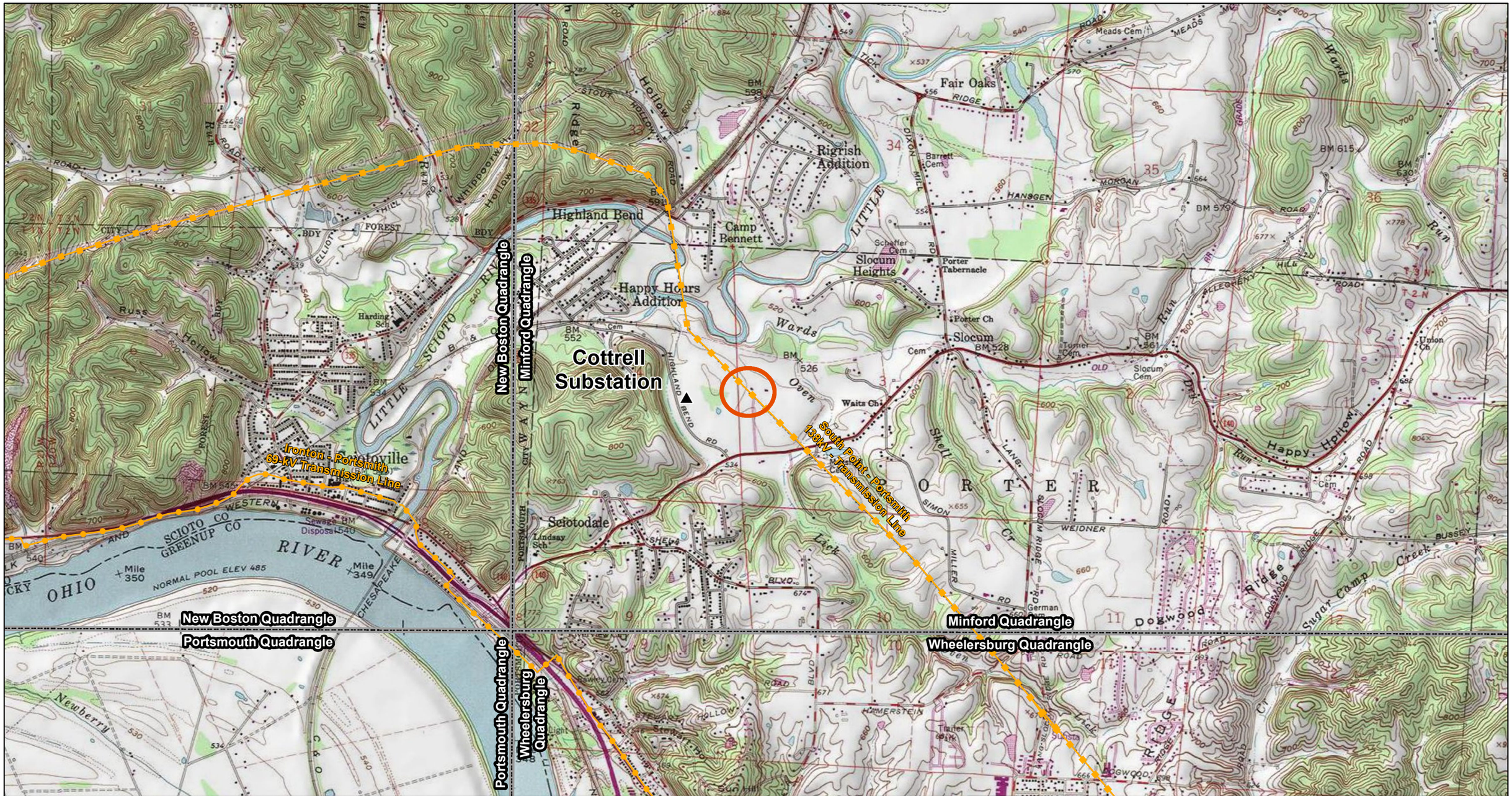
Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Number 39145C0288E (Effective 4.18.2011), the Project is within the boundaries of a 100-year floodplain and structures will be located within the 100-year floodplain. See Section B(10)(d) above for coordination and permit requirements associated with floodplain impacts for the Project.

B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps


Cottrell Substation
South Point - Portsmith 138-kV Transmission Line
Ironton - Portsmith 69-kV Transmission Line
New Boston Quadrangle
Minford Quadrangle
Portsmouth Quadrangle
Wheelersburg Quadrangle
Highland Bend
Rigrish Addition
Camp Bennett
Happy Hours Addition
Slocum Heights
Fair Oaks
Meads Cem
Porter Tabernacle
Porter Ch
Slocum
Slocum Cem
Waits Chi
Seiotodale
Portsmouth
Newberry
Dogwood Ridge
Sugar Camp Creek
Happy Hollow Run
Union Ch
Harding Sch
Lindsay Sch
Sewage Disposal
SCIOTO RIVER
OHIO RIVER
LITTLE SCIOTO RIVER
Mile 350
Mile 349
NORMAL POOL ELEV 485
SCIOTO CO
GREENUP CO
WESTERN AND C & O
CHESAPEAKE
Legend
Proposed Substation Non-Jurisdictional
Existing 69-kV Transmission Line
Existing 138-kV Transmission Line
Project Area
USGS 7.5-Minute Quadrangle Boundary
Base Map Source:
ESRI USGS Topographic
(May 2020)
Coordinate System:
State Plane Ohio South
FIPS 3402 (US Feet)
Datum: NAD 1983
Scale: 1:24,000
February 06, 2023
OHIO
Project Location
Exhibit 1
TOPOGRAPHIC OVERVIEW
AEP OHIO TRANSMISSION COMPANY
South Point - Portsmouth
138-kV Transmission Line Tie-In
Scioto County, OH
0
0.25
0.5
Miles

Legend

- Proposed Structures
- Project Filed 22-0950-EL-BLN
- Existing 138-kV Transmission Line
- 100-yr Floodplain
- Parcel Boundary

Base Map Source:
ESRI World Imagery
(2020/2021)

Coordinate System:
State Plane Ohio South
FIPS 3402 (US Feet)
Datum: NAD 1983
Scale: 1:3,000

February 07, 2023

Exhibit 2
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY
An AEP Company
"BOUNDLESS ENERGY"

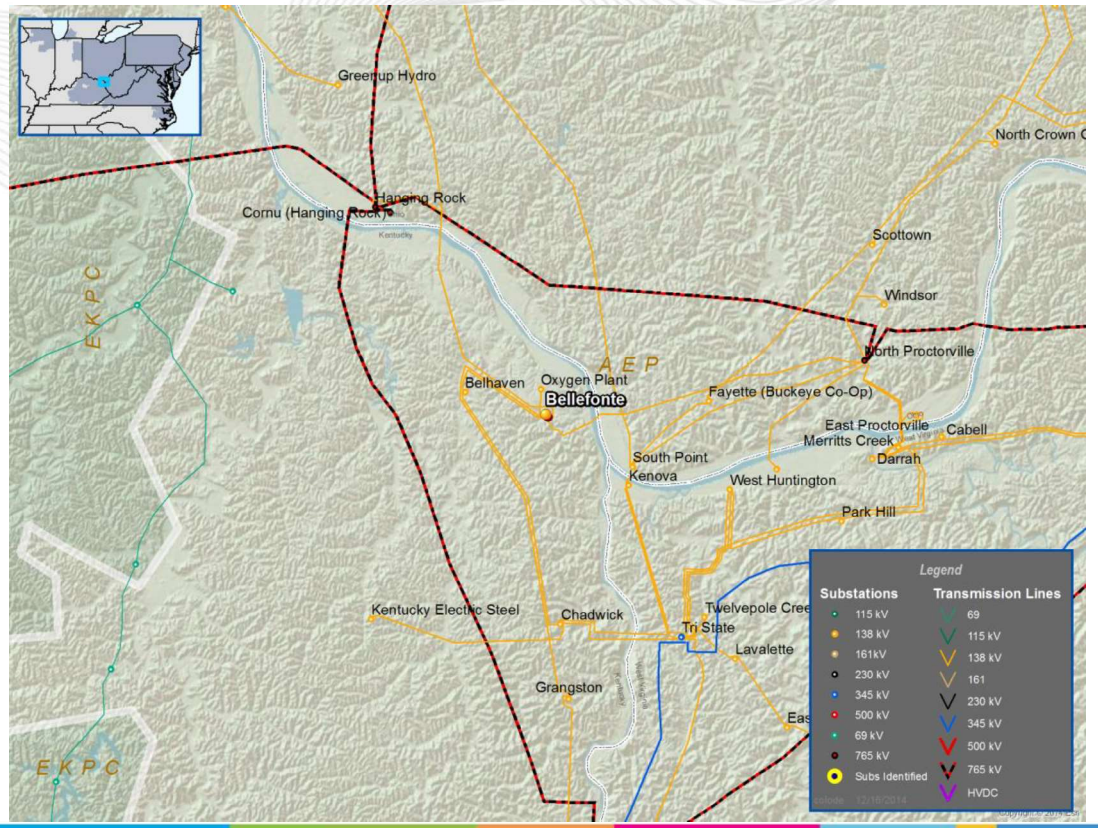
South Point - Portsmouth
138-kV Transmission Line Tie-In
Scioto County, OH

0 100 200
Feet

Appendix B Long Term Forecast Report and PJM Solution Submittal

AEP Transmission Zone

- **AEP Criteria Thermal Violation (FG # AEP-T53)**
- The Bellefonte 138/69/34 XF5 transformer is overloaded for the loss of Bellefonte – Hanging Rock 138kV line
- Alternatives considered:
  - P2014_2-2L ($31.65M)
- Recommended Solution:
  - Bellefonte Transformer Addition (P2014_2-2L)
- Estimated Project Cost: $31.65 M
- Required IS Date: 6/1/2019



AEP Baseline
Millbrook Park – Franklin Furnace

Process Stage: First Review on 01/7/2015

Criteria: N-1 Thermal
Assumption Reference: AEP Planning Criteria

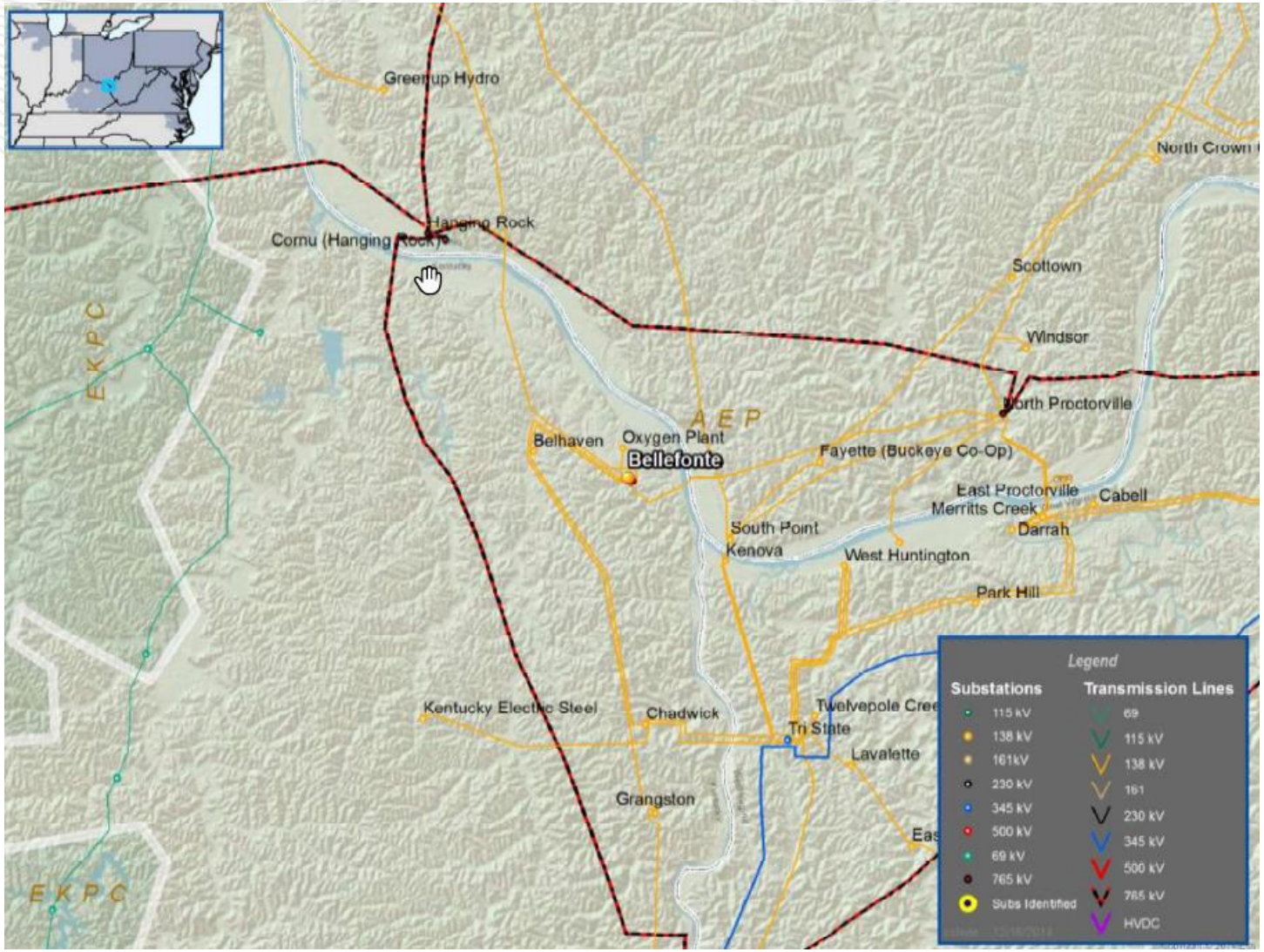
Model Used for Analysis: 2014 RTEP

Proposal Window Exclusion: Immediate Need, Below 200 kV, Station Equipment

Problem Statement:

AEP Criterial Thermal Violation FG #AEP-T53

- The Bellefonte 138/69 kV transformer is overloaded to 102% for the loss of Bellefonte – Hanging Rock 138 kV line.
- The Franklin – Wheelersburg 69 kV line is overloaded to 101% for the loss of the Fuller – Argentum (EKPC) 138 kV line. (Line overloaded due to increased transformer addition at Bellefonte: 99% to 101%)

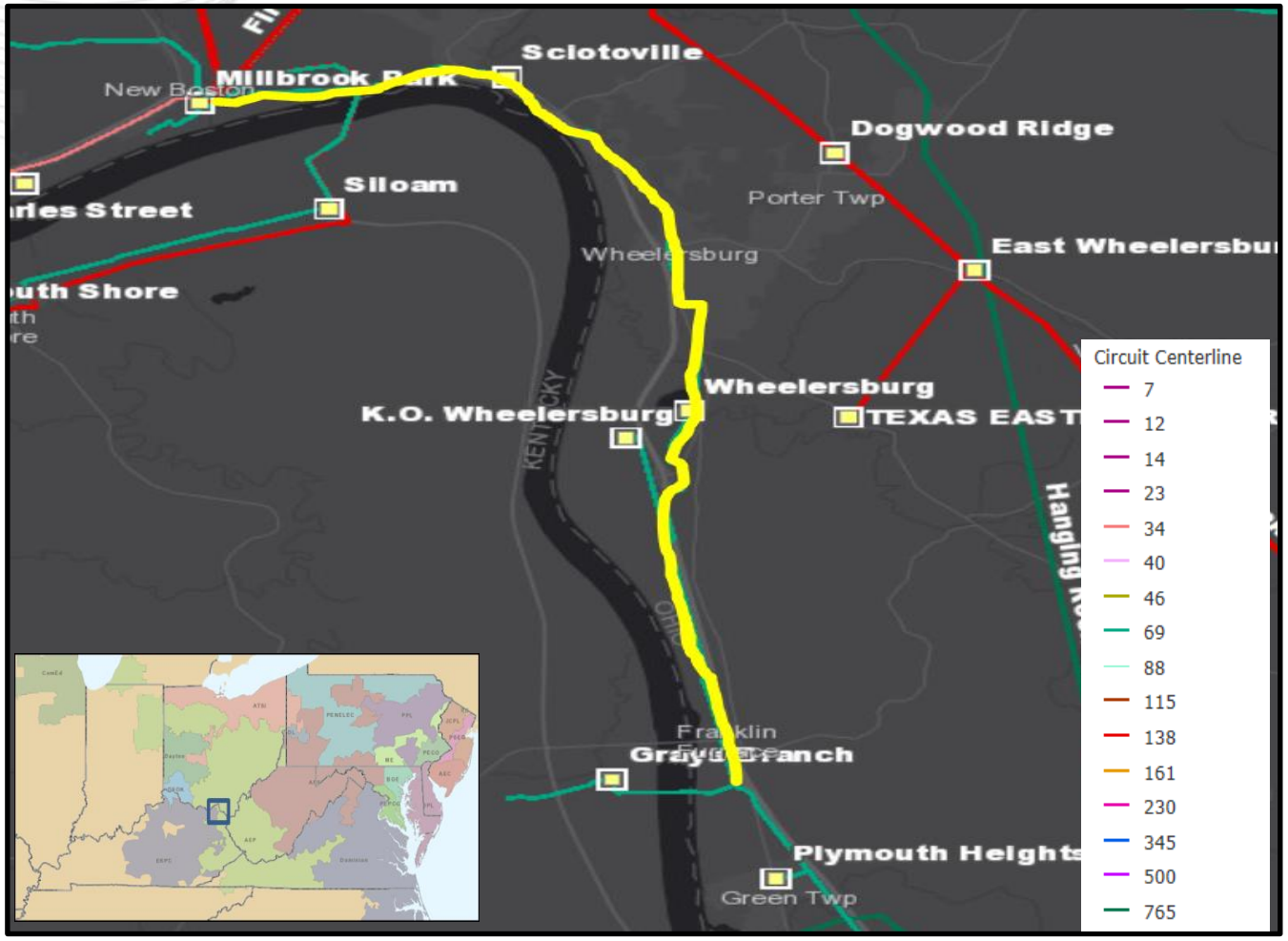


Original Proposed Solution: B2604

- Bellefonte: Install new 138/69-34.5 kV 200 MVA transformer at Bellefonte station. Install circuit switcher and 34.5 breaker on highside and lowside of transformer #5. In-service (estimated $3M).
- ~~Franklin Furnace - Hayport Rd S.S 69kV line: Rebuild 1.73 mile line utilizing 795 ACSR built to 138 kV standards.~~
- ~~Hayport Rd S.S - Wheelersburg 69kV line: Rebuild 2.87 mile line utilizing 795 ACSR built to 138 kV standards~~
- ~~Sciotoville - Wheelersburg 69kV line: Rebuild 4.56 mile line utilizing 795 ACSR built to 138 kV standards~~
- ~~Millbrook Park -Sciotoville 69kV line: Rebuild 2.6 mile line utilizing 795 ACSR built to 138 kV standards~~

Total Estimated Transmission Cost: $~~31.65M~~ $3M

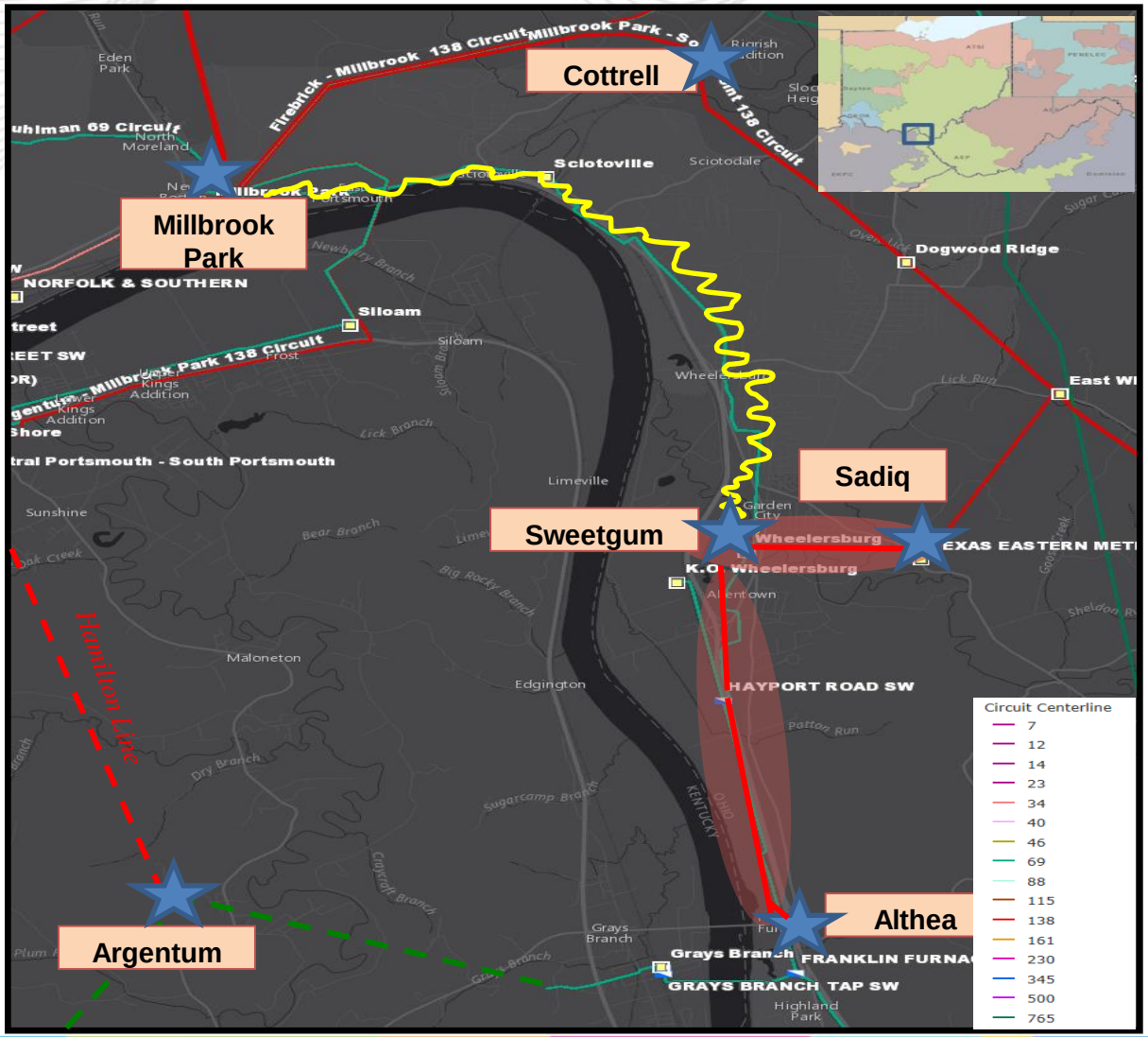
Through detailed engineering on the original solution, significant siting and ROW encroachment concerns were identified that made the proposed rebuild of the existing 69 kV line between Millbrook and Franklin Furnace infeasible from a constructability perspective. Expanded easements for the line rebuild along the river and through New Boston, Sciotoville, and Wheelersburg are not possible to obtain, at which point AEP started investigating other alternatives.



AEP Baseline
Millbrook Park – Franklin Furnace

Proposed Solution:

- Remove ~ 11.32 miles of the 69kV Line between Millbrook Park and Franklin Furnace. **Estimated Cost: $1.13M**
- At Millbrook Park station, add a new 138-69kV transf #2 (90 MVA) w/3000A 40kA breakers on the high and low side. Replace the 600A MOAB Switch and add a 3000A circuit switcher on the high side of transf #1. **Estimated Cost: $3.05M**
- Replace Sciotoville station with a new 138-12kV in-out station (Cottrell) with 2000A line MOABs facing Millbrook Park & East Wheelersburg. **Estimated Cost: $1.4M**
  Note: Cost of Distribution scope of work not included.
- Tie Cottrell switch into the Millbrook Park – East Wheelersburg circuit by constructing 0.50 miles of line using 795 ACSR 26/7 Drake (SE 359 MVA). **Existing Cost: $1.96M**
- Install a new 2000A 3-way POP Switch outside of Texas Eastern substation (Sadiq switch). **Estimated Cost: $1.08M**
- Replace Wheelersburg station with a new 138-12kV in-out station (Sweetgum) with a 3000A 40kA breaker facing Sadiq Switch and a 2000A 138kV MOAB facing Althea. **Estimated Cost: $2.16M**
  Note: Cost of Distribution scope of work not included.
- Build approximately 1.4 miles of new 138kV line using 795 ACSR 26/7 Drake (SE 359 MVA) between the new Sadiq switch and the new Sweetgum station. **Estimated Cost: $3.41M**
- Remove the existing 69 kV Hayport Road Switch. **Estimated Cost: $0.1M**

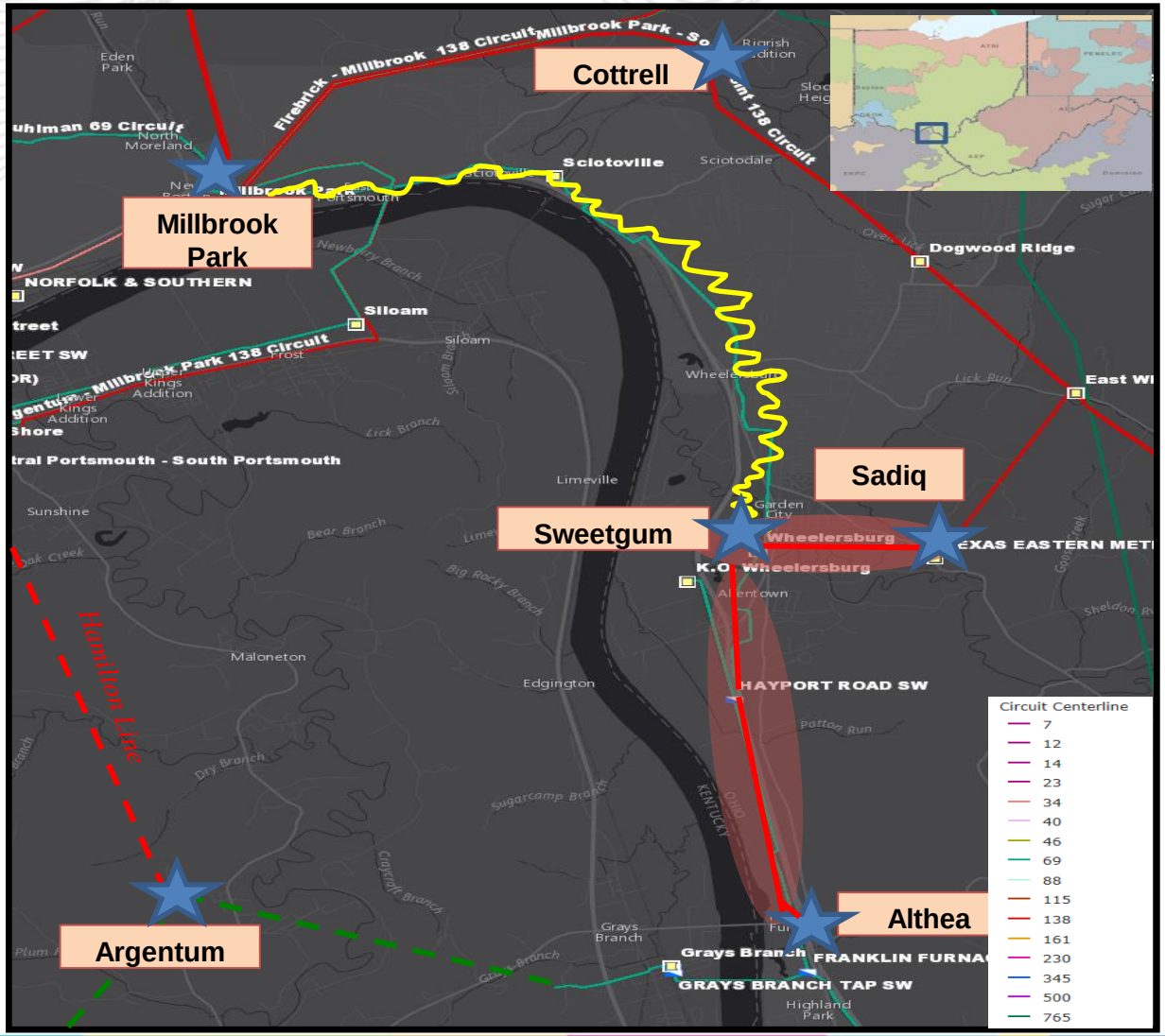


Proposed Solution Continued:

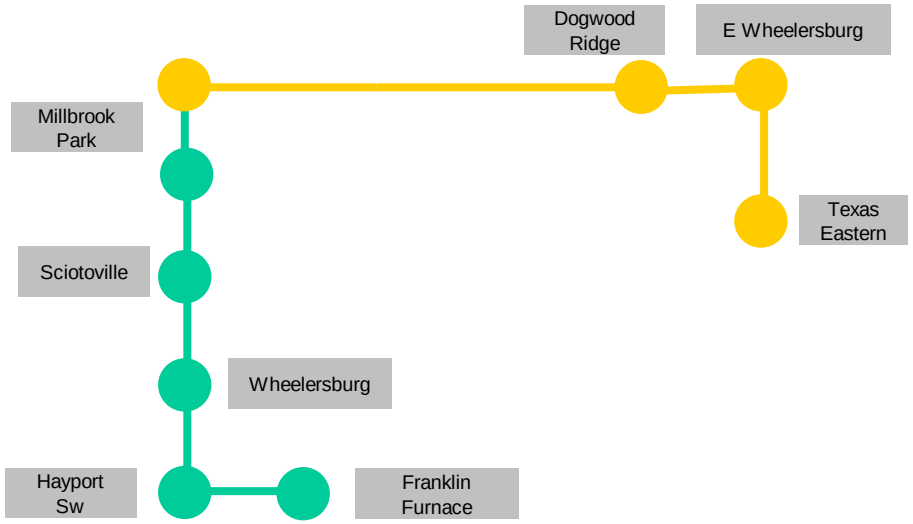
- Rebuild ~2.3 miles along existing ROW from Sweetgum to the Hayport Rd switch location as 138kV single circuit and rebuild ~2.0 miles from the Hayport Road switch to Althea with double circuit 138kV construction, one side operated at 69 kV to continue service to K.O. Wheelersburg, using 795 ACSR 26/7 Drake (SE 359 MVA). **Estimated Cost: $10.76M**
- Build a new station (Althea) with a 138-69 kV, 90 MVA transformer. The 138kV side will have a single 2000A 40kA circuit breaker and the 69kV side will be a 2000A 40kA three breaker ring bus. **Estimated Cost: $11.07M**
- Remote end work at Hanging Rock, East Wheelersburg, & North Haverhill. **Estimated Cost: $0.06M**

Total Estimated Transmission Cost: $36.18M

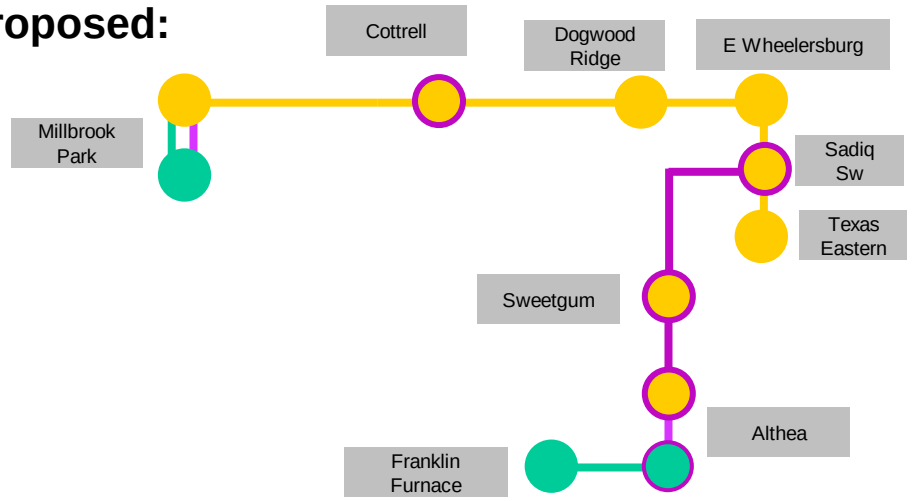
Ancillary Benefits: The new proposal also addresses needs identified under AEP-2018-OH030, including Sciotoville station, Wheelersburg station, and the three terminal 69 kV line. Constructing 1.4 miles of new 138 kV line allows for the retirement of over 11 miles of deteriorating 69 kV line. Sweetgum is proposed as in and out with a breaker to prevent more than three auto-sectionalizing MOABs in series. There is no room at the existing customer-owned Texas Eastern station site to add breakers, so a phase over phase switch is proposed.



Existing:



Proposed:



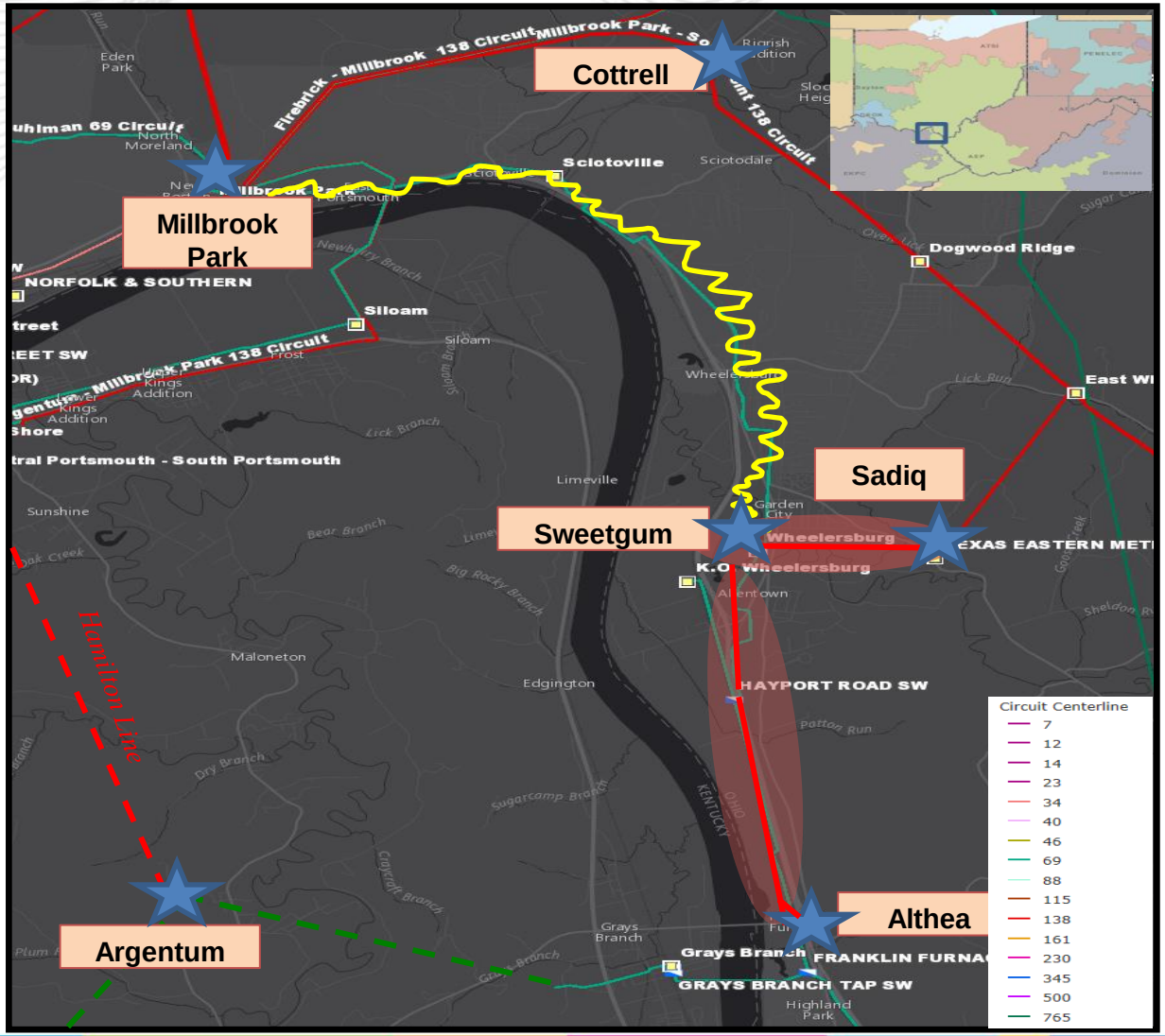
Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

AEP Baseline
Millbrook Park – Franklin Furnace

Alternatives:

1. A variation of the alternate design was considered to route the 69kV line from Millbrook Park to Wheelersburg across Kentucky. As in the proposed project, Sciotoville would still need to be relocated and there would be a 138kV extension from Wheelersburg to 138kV Texas Eastern. The remaining 69kV line from Wheelersburg to Franklin Furnace would be retired. This option was not chosen because it would leave a weak northern source for North Haverhill which serves several large loads and generation. There are additional ROW risks and costs associated with a 7-mile greenfield line and the two river crossings. **Estimated Cost: $53.7M**

Projected In-Service: 04/15/2025



4.	VOLTAGE: DESIGN / OPERATE	69 kV / 69 kV
5.	APPLICATION FOR CERTIFICATE:	N/A
6.	CONSTRUCTION:	2023-2025
7.	CAPITAL INVESTMENT:	$9.05M
8.	PLANNED SUBSTATION:	Bryson
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	Build single circuit line to customer site
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Unable to provide requested service to customer
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	East Wheelersburg - Sadiq SW (b2604 TP2015095)
2.	POINTS OF ORIGIN AND TERMINATION	East Wheelersburg - Sadiq SW INTERMEDIATE STATIONS - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.2 miles / 100 ft. / 1 circuit
4.	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5.	APPLICATION FOR CERTIFICATE:	2023
6.	CONSTRUCTION:	2026 - 2027
7.	CAPITAL INVESTMENT:	$2.21M
8.	PLANNED SUBSTATION:	Sweetgum
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	To address the identified thermal violations
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure, reliability, and operational issues
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	Sadiq SW - Sweetgum (b2604 TP2015095)
2.	POINTS OF ORIGIN AND TERMINATION	Sadiq SW - Sweetgum INTERMEDIATE STATIONS - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	1.4 miles / 100 ft. / 1 circuit

4.	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5.	APPLICATION FOR CERTIFICATE:	2023
6.	CONSTRUCTION:	2026 - 2027
7.	CAPITAL INVESTMENT:	$2.35M
8.	PLANNED SUBSTATION:	Sweetgum
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	To address the identified thermal violations
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure, reliability, and operational issues
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	Althea - Sweetgum (b2604 TP2015095)
2.	POINTS OF ORIGIN AND TERMINATION	Althea - Sweetgum INTERMEDIATE STATIONS - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	5.6 miles / 100 ft. / 1 circuit
4.	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5.	APPLICATION FOR CERTIFICATE:	2023
6.	CONSTRUCTION:	2026 - 2027
7.	CAPITAL INVESTMENT:	$7.43M
8.	PLANNED SUBSTATION:	Althea, Sweetgum
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	To address the identified thermal violations
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure, reliability, and operational issues
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	Cottrell - Millbrook Park (b2604 TP2015095)
2.	POINTS OF ORIGIN AND TERMINATION	Cottrell - Millbrook Park INTERMEDIATE STATIONS - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.25 miles / 100 ft. / 1 circuit

4.	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5.	APPLICATION FOR CERTIFICATE:	2023
6.	CONSTRUCTION:	2026 - 2027
7.	CAPITAL INVESTMENT:	$0.63M
8.	PLANNED SUBSTATION:	Cottrell
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	To address the identified thermal violations
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure, reliability, and operational issues
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	Cottrell - East Wheelersburg (b2604 TP2015095)
2.	POINTS OF ORIGIN AND TERMINATION	Cottrell - East Wheelersburg INTERMEDIATE STATIONS - N/A
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.25 miles / 100 ft. / 1 circuit
4.	VOLTAGE: DESIGN / OPERATE	138 kV / 138 kV
5.	APPLICATION FOR CERTIFICATE:	2023
6.	CONSTRUCTION:	2026 - 2027
7.	CAPITAL INVESTMENT:	$0.57M
8.	PLANNED SUBSTATION:	Cottrell
9.	SUPPORTING STRUCTURES:	Steel
10.	PARTICIPATION WITH OTHER UTILITIES	N/A
11.	PURPOSE OF THE PLANNED TRANSMISSION LINE	To address the identified thermal violations
12.	CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure, reliability, and operational issues
13.	MISCELLANEOUS:	
1.	LINE NAME AND NUMBER:	Windsor Extension(b2555) TP2019085
2.	POINTS OF ORIGIN AND TERMINATION	Tiltonsville, Windsor
3.	RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	0.7 miles

Appendix C **Agency Coordination**

In reply, refer to
2022-SCI-55907

October 11, 2022

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

RE: Cottrell North 138kV Extension Project, Porter Township, Scioto County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received September 12, 2022 regarding the proposed Cottrell North 138kV Extension Project, Porter Township, Scioto County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). 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 Cultural Resource Management Investigations for the .43 km (.27 mi) Cottrell North 138kV Extension Project in Porter Township, Scioto County, Ohio* by Ryan J. Weller and Scott McIntosh (Weller & Associates, Inc. 2022).

A literature review, visual inspection, shovel test probe, and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no additional archaeological investigation is necessary.

A literature review and field survey were completed as part of the investigations. A total of two (2) extant properties fifty years of age or older were identified within the Area of Potential Effects (APE). Weller recommends these properties are not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendations of eligibility.

Based on the information provided, we agree that the project as proposed will have no effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1094996

In reply, refer to
2022-SCI-55908

October 11, 2022

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

RE: Cottrell South 138kV Extension Project, Porter Township, Scioto County, Ohio

Dear Mr. Weller:

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Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1094997

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

January 14, 2022

Michelle Kearns
Stantec Consulting Services Inc.
1500 Lake Shore Drive, Suite 100
Columbus, Ohio 43204

Re: 21-1129; AEP Cottrell Station and Cottrell Extension - E. Wheelersburg and Millbrook Park 138 KV Line Extension Projects

Project: The proposed project involves the extension of 138 kV transmission lines.

Location: The proposed project is located in Scioto County, Ohio.

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

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

Umbrella Magnolia (*Magnolia tripetala*), P
Riverbank Paspalum (*Paspalum repens*), T
Black Sandshell (*Ligumia recta*), T
Salamander Mussel (*Simpsonaias ambigua*), SC
Deertoe (*Truncilla truncata*), SC

The review was performed on the project area specified in the 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. Additional comments on some of the features may be found in pertinent sections below.

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; U = state status under review; X = presumed extirpated in Ohio; FE = federal endangered, and FT = federal threatened.

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 entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Erin Hazelton at Erin.hazelton@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species.

Federally Endangered

clubshell (*Pleurobema clava*)	purple cat's paw (*Epioblasma o. obliquata*)
fanshell (*Cyprogenia stegaria*)	rayed bean (*Villosa fabalis*)
northern riffleshell (*Epioblasma torulosa rangiana*)	sheepnose (*Plethobasus cyphyus*)
pink mucket (*Lampsilis orbiculata*)	snuffbox (*Epioblasma triquetra*)

State Endangered

butterfly (*Ellipsaria lineolata*)
ebonyshell (*Fusconaia ebena*)
elephant-ear (*Elliptio crassidens crassidens*)
little spectaclecase (*Villosa lienosa*)
long-solid (*Fusconaia maculata maculata*)
monkeyface (*Quadrula metanevra*)
Ohio pigtoe (*Pleurobema cordatum*)
pyramid pigtoe (*Pleurobema rubrum*)
sharp-ridged pocketbook (*Lampsilis ovate*)
wartyback (*Quadrula nodulata*)
washboard (*Megalonaias nervosa*)
yellow sandshell (*Lampsilis teres*)

State Threatened

black sandshell (*Ligumia recta*)
fawnsfoot (*Truncilla donaciformis*)
threehorn wartyback (*Obliquaria reflexa*)

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

The project is within the range of the following listed fish species.

State Endangered

bigeye shiner (*Notropis boops*)
gilt darter *(Percina evides)*
goldeye (*Hiodon alosoides*)
mountain madtom (*Noturus eleutherus*)
northern brook lamprey (*Ichthyomyzon fossor*)
shovelnose sturgeon (*Scaphirhynchus- platorynchus*)
northern madtom (*Noturus stigmosus*)
popeye shiner (*Notropis ariommus*)
shoal chub (*Macrhybopsis hyostoma*)
shortnose gar (*Lepisosteus platostomus*)

State Threatened

American eel (*Anguilla rostrata*)
blue sucker (*Cycleptus elongatus*)
channel darter (*Percina copelandi*)
paddlefish (*Polyodon spathula*)
river darter (*Percina shumardi*)
Tippecanoe darter (*Etheostoma tippecanoe*)

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact 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. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the 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. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Allegheny woodrat (*Neotoma magister*), a state endangered species. The Allegheny woodrat utilizes rocky outcrops such as cliffs and caves in forested areas. To avoid impacts to this species, impacts to cliffs and rocky outcrops should be avoided. In addition, a buffer of 100 feet above and 200 feet below cliffs and rocky outcrops should be maintained. Due to the location, the type of habitat within the project area, and the type of work proposed, 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 US 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 Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

From:	Ohio, FW3
To:	Kearns, Michelle
Cc:	nathan.reardon@dnr.state.oh.us; Parsons, Kate; Teitt, Matthew; Grant S Stuller
Subject:	AEP Cottrell Station and Cottrell Extension - E. Wheelersburg and Millbrook Park 138 kV Line Extension Projects, Scioto County, Ohio
Date:	Monday, December 20, 2021 11:23:51 AM
Attachments:	image.png image.png

TAILS# 03E15000-2022-TA-0501

Dear Ms. Kearns,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found 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 breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet 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, rock crevices and abandoned mines.

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

during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then 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 the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army 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. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@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 Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Appendix D Ecological Survey Report

Cottrell 138 kV Line Extension Project
Scioto County, Ohio

Ecological Resources Inventory Report

Prepared for:

AEP Ohio Transmission Company, Inc.
8600 Smiths Mill Road
New Albany, OH 43054

Prepared by:

Stantec Consulting Services Inc.
1500 Lake Shore Drive, Suite 100
Columbus, OH 43204

September 7, 2022

Sign-off Sheet

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1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing to extend a greenfield 138 kilovolt (kV) line to the new Cottrell station that will connect to the existing Millbrook Park – South Point 138 kV transmission line in Scioto County, Ohio. The Cottrell 138kV Line Extension Project (the Project) is located northeast of Sciotodale, Ohio (Figure 1, Appendix B). The Project will include the construction of a new 138 kV line with associated access roads. A 100-foot study corridor totaling approximately 2.80-acres (Project area) for the proposed new 138kV line was surveyed for wetlands, waterbodies, open water features, upland drainage features, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on July 18, 2022 (Figure 2, Appendix B). The approximate locations of features located up to 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project area. These features are shown on the Figure 2 maps in Appendix B as "approximate" wetlands, streams (waterways), open waters, and upland drainage features.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic maps, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0; USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05; USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the 22250 Federal Register/Vol. 85, No. 77 (effective June 22, 2020; USACE 2020). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2020) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline and/or the OHWM locations of each waterway were identified and surveyed using a handheld sub-meter accuracy global positioning system (GPS) unit and mapped with GIS software. Additionally, the locations of upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix E – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by these species.

3.0 RESULTS

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on July 18, 2022, for potentially suitable habitats for threatened and endangered species. Figure 3 (Appendix B) shows the land cover, vegetation communities, and any identified rare, threatened, or endangered species habitats observed within the Project area during the habitat assessment surveys. Representative photographs of the vegetation communities/habitats identified within the Project area are included in Appendix D-2 of this report (photo locations are shown on Figure 3 in Appendix B). Information regarding the vegetation communities/habitats identified within the Project area are provided in Table 1.

Table 1. Vegetation Communities and Land Cover Found within the Cottrell 138kV Line Extension Project Area Scioto County, Ohio

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Agricultural Field	Extreme Disturbance/Ruderal Community dominated by planted row crop species such as soybean (*Glycine max*).	No	1.06
Maintained Lawn	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Dominant species included Kentucky bluegrass (*Poa pratensis*), ground ivy (*Glechoma hederacea*), common dandelion (*Taraxacum officinale*).	No	0.04
Second Growth Deciduous Forest	Intermediate disturbance (dominated by plants that typify a stable phase of a native community that persists under some disturbance). Dominant species included sugar maple (*Acer saccharum*), Amur honeysuckle (*Lonicera maackii)*, black raspberry (*Rubus occidentalis),* and eastern poison ivy (*Toxicodendron radicans*).	No	0.33
Palustrine Scrub-Shrub Wetland	Intermediate disturbance (dominated by plants that typify a stable phase of a native community that persists under some disturbance). Dominant species included common buttonbush (*Cephalanthus occidentalis)* and water smartweed *(Persicaria amphibia*).	No	1.37
		TOTAL	**2.80**

3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project area on July 18, 2022. The Project area contains one National Wetland Inventory (NWI) feature that contains three classification codes. One wetland was identified within the Project area during the field surveys. Figure 2 (Appendix B) shows the location of the identified wetland. identified. Representative wetland photographs are included in Appendix D-1 of this report (photo locations are shown on Figure 2, Appendix B). Completed wetland determination and ORAM data forms are included in Appendix C. Information regarding the wetland resource within the Project area and proposed impacts is summarized in Table 2 and Appendix A.

Table 2. Summary of NWI Disposition within the Cottrell 138kV Line Extension Project Area, Scioto County, Ohio

NWI Code	NWI Description	Figure 2 Page Number	Related Field Inventoried Resource	Comments
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.
PSS1C	Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.
PSS1F	Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Semi permanently Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.

Table 3. Summary of Wetland Resources Found within the Cottrell 138kV Line Extension Project Area, Scioto County, Ohio

Wetland ID	Location			Isolated?[2]	Habitat Type[3,4]	Delineated Area (acre)	ORAM[5]		Nearest Proposed Structure Number	Existing Structure Number in Wetland	Proposed Structure Number in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude	Photo Location[1]				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland 1	38.763361	-82.859988	1	No	PSS	1.37	54	2	N/A	None	N/A	N/A	TBD	TBD
					Total:	**1.37**						**Total:**	**TBD**	**TBD**

[1] Appendix B - Figure 2 and Appendix D – Photo log D-1
[2] Pending USACE jurisdictional review
[3] Habitat type based on Cowardin et al. (1979).
[4] PSS = Palustrine Scrub/Shrub Wetland
[5] ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetland v. 5.0 (Mack 2001).

3.3 STREAMS

No streams were delineated within the Project area during the field surveys on July 18, 2022. The Project area does not contain any National Hydrography Data (NHD) features or U.S. Geological Survey (USGS) named streams.

3.4 OPEN WATERS

No open waters (i.e., ponds, lakes) were delineated within the Project area during the field surveys completed on July 18, 2022.

3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Federal and Ohio State-Listed Species within the Cottrell 138kV Line Extension Project Area Scioto County, Ohio

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Indiana bat/ Myotis sodalis	E	E	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007, USFWS 2022). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	No potentially suitable winter hibernacula were observed within the Project area. However, suitable summer roost and foraging habitat (deciduous forest) was observed within the Project area.	**ODNR** – This Project lies within the range of the Indiana bat. Therefore, ODNR DOW recommends that if trees are present within the Project area and need to be cut, the cutting should occur between October 1 and March 31. If trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 – August 15, prior to any cutting. In addition, the DOW recommends a desktop habitat assessment, followed by a field assessment if needed, to determine if there are potential hibernacula present within the Project area. **USFWS** – If the proposed Project area contains trees ≥3 inches dbh, the USFWS recommends that trees be saved wherever possible. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of any trees ≥3 inches dbh only occur between October 1 and March 31 in areas containing suitable habitat. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats are insignificant or discountable.	Potential suitable summer foraging and roosting habitat was observed in the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable roosting habitat and will proceed in accordance with agency requirements. **Avoidance Dates: April 1 through September 30**
Northern Long-eared Bat/ Myotis septentrionalis	E	T	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2020). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	No potentially suitable winter hibernacula were observed within the Project area. However, suitable summer roost and foraging habitat (deciduous forest) was observed within the Project area.	**ODNR** – This Project lies within the range of the northern long-eared bat. Therefore, ODNR DOW recommends that if trees are present within the Project area and need to be cut, the cutting should occur between October 1 and March 31. If trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 – August 15, prior to any cutting. In addition, the DOW recommends a desktop habitat assessment, followed by a field assessment if needed to determine if there are potential hibernacula present within the Project area. **USFWS** – If the proposed Project area contains trees ≥3 inches dbh, the USFWS recommends that trees be saved wherever possible. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of any trees ≥3 inches dbh only occur between October 1 and March 31 in areas containing suitable habitat. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats are insignificant or discountable. Following this seasonal tree clearing recommendation should ensure that any effects to northern long-eared bats are insignificant or discountable. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule.	Potential suitable summer foraging and roosting habitat was observed in the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable roosting habitat and will proceed in accordance with agency requirements. **Avoidance Dates: April 1 through September 30**

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Little Brown Bat/ *Myotis lucifugus*	E	N/A	This bat uses a wide range of habitats and man-made structures for roosting, including buildings and attics. Less frequently, they use hollows of trees. Winter hibernation sites typically consist of caves, tunnels, abandoned mines. Foraging habitat for this species generally occurs over water, along the edges of lakes and stream or in woodlands near waterbodies (NatureServe 2022).	No potentially suitable winter hibernacula were observed within the Project area. However, suitable summer roost and foraging habitat (deciduous forest) was observed within the Project area.	**ODNR** - This Project lies within the range of the little brown bat. Therefore, ODNR DOW recommends that if trees are present within the Project area and need to be cut, the cutting should occur between October 1 and March 31. If trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 – August 15, prior to any cutting. In addition, the DOW recommends a desktop habitat assessment, followed by field a field assessment if needed, to determine if there are potential hibernacula present within the Project area. **USFWS** - No comments received.	Potential suitable summer foraging and roosting habitat was observed in the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable roosting habitat and will proceed in accordance with agency requirements. **Avoidance Dates: April 1 through September 30**
Tricolored Bat/ *Perimyotis subflavus*	E	N/A	This species is found throughout Ohio and is associated with forested landscapes, foraging near trees and along waterways. Maternity and summer roosts usually occur in dead or live tree foliage, or in the south, in clumps of Spanish moss. Maternity colonies may also use tree cavities or man-made structures, such as buildings or bridges. Caves, mines, and rock crevices may be used as night roosts between foraging (NatureServe 2022).	No potentially suitable winter hibernacula were observed within the Project area. However, suitable summer roost and foraging habitat (deciduous forest) was observed within the Project area.	**ODNR** - This Project lies within the range of the tricolored bat. Therefore, ODNR DOW recommends that if trees are present within the Project area and need to be cut, the cutting should occur between October 1 and March 31. If trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 – August 15, prior to any cutting. In addition, the DOW recommends a desktop habitat assessment, followed by field a field assessment if needed, to determine if there are potential hibernacula present within the Project area. **USFWS** - No comments received.	Potential suitable summer foraging and roosting habitat was observed in the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable roosting habitat and will proceed in accordance with agency requirements. **Avoidance Dates: April 1 through September 30**
Clubshell/ *Pleurobema clava*	E	E	This is a species of small to medium-sized rivers and streams; generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle, and cannot tolerate mud or slackwater conditions (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Fanshell/ *Cyprogenia stegaria*	E	E	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Northern Riffleshell/ *Epioblasma torulosa rangiana*	E	E	This species inhabits riffles in small to large streams with swift current and a substrate of firmly packed fine gravel and sand (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Pink Mucket/ *Lampsilis orbiculata*	E	E	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.

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Purple Cat's Paw/ *Epioblasma obliquata obliquata*	E	E	Found in Lake Erie tributaries, Ohio River tributaries, and headwater and small inland streams (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Rayed Bean/ *Villosa fabalis*	E	E	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability. Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Sheepnose/ *Plethobasus cyphyus*	E	E	Usually found in large rivers in current on mud, sand, or gravel bottoms at depth of 1-2 meters or more (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Snuffbox/ *Epioblasma triquetra*	E	E	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Butterfly/ *Ellipsaria lineolata*	E	N/A	This mussel prefers stable substrate containing rock, gravel and sand in swift currents of large rivers (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Ebonyshell/ *Fusconaia ebena*	E	N/A	Inhabits large rivers and prefers swift water and stable sand or gravel shoals. Coarse sand and gravel substrates provide the most suitable habitat. It can occur at depths of 10-15 feet with current associated (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Elephant-ear/ *Elliptio crassidens crassidens*	E	N/A	An inhabitant of channels in large creeks to rivers with moderate to swift currents, primarily on sand and limestone or rock substrates (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.

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Little Spectaclecase/ *Villosa lienosa*	E	N/A	Typically inhabits small creeks to medium-sized rivers, usually along the banks in slower currents (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Long-solid/ *Fusconaia maculata maculata*	E	N/A	This mussel is found in the gravel substrates of shoals and riffles of large rivers, as well as impounded areas (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Monkeyface/ *Quadrula metanevra*	E	N/A	This is a species of medium to large rivers typically found in runs with a substrate or mixed sand or gravel (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Ohio Pigtoe/ *Pleurobema cordatum*	E	N/A	This mussel prefers strong currents of large rivers with substrates of sand and gravel, though is somewhat tolerant of lentic systems (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Pyramid Pigtoe/ *Pleurobema rubrum*	E	N/A	This mussel is a riffle and shoal species that prefers the swift currents of coarse gravel, sand, and mud substrates within medium to large rivers (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Sharp-ridged Pocketbook/ *Lampsilis ovata*	E	N/A	Very generalized in habitat preference, adapting well to both impoundment situations as well as free-flowing, shallow rivers. Usually found in moderate to strong current, it can survive in standing water. The most suitable substrate consists of a mixture of gravel and coarse sand mixed with some silt or mud (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Wartyback/ *Quadrula nodulata*	E	N/A	This species can occur in medium to large rivers at depths of up to 15-18 feet on a sand and mud substrate (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** – No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Washboard/ *Megalonaias nervosa*	E	N/A	This species is typically a large river species, living in the main channel and in some of the overbank areas of reservoirs, but in some instances, it may also become established in medium-sized and even small rivers. It is found in areas with a slow current with muddy to coarse gravel substrates (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** – Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.

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Yellow Sandshell/ *Lampsilis teres*	E	N/A	Occurs in medium-sized creeks to large rivers, often in slower current areas of stream borders having sand as primary substrate as well as mud gravel and silt (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Black Sandshell/ *Ligumia recta*	T	N/A	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The Natural Heritage Database lists this species as occurring at or within a one-mile radius of the Project area. However, due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Fawnsfoot/ *Truncilla donaciformis*	T	N/A	This species occurs in both large and medium-sized rivers at normal depths varying from less than three feet up to 15 to 18 feet in big rivers such as the Tennessee. A substrate of either sand or mud is suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Threehorn Wartyback/ *Obliquaria reflexa*	T	N/A	This species is typical of the large rivers where there is moderately strong current and a stable substrate composed of gravel, sand, and mud (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Deertoe/ *Tuncilla truncata*	SC	N/A	This species is a generalized in terms of substrate preference, usually occurring in fine gravel mixed with sand and mud. It is also considered a generalist in terms of the size of rivers it inhabits. It is more common in medium-sized rivers but may become numerous in large rivers, where it can live at depths of 12 to 18 feet. It will also establish viable populations in lakes lacking current (NatureServe, 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The Natural Heritage Database lists this species as occurring at or within a one-mile radius of the Project area. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Salamander Mussel/ *Simpsonaias ambigua*	SC	N/A	Preferred habitat is in sand or silt under large, flat stones in areas of a swift current in medium to large rivers and lakes (NatureServe, 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The Natural Heritage Database lists this species as occurring at or within a one-mile radius of the Project area. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Bigeye Shiner/ *Notropis boops*	E	N/A	Flowing pools of moderately clear creeks and small to medium rivers with large permanent pools over bottom of clear sand, gravel, or rock. Often at stream margin in beds of emergent vegetation (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Gilt Darter/ *Percina evides*	E	N/A	This species prefers clear, small to medium rivers with clean, silt-free bottoms and permanently strong flow. This species is usually found in moderate to fast, deep riffles and pools, over gravel, rubble, and small boulders (NatureServe 2022)	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Goldeye/ *Hiodon alosoides*	E	N/A	Habitat includes quiet turbid water of medium to large lowland rivers, small lakes, ponds, fringe wetlands and muddy shallows of larger lakes. Occurs in shallow firm-bottomed sites in river pools or backwaters or over gravel shoals in tributary streams (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Mountain Madtom/ *Noturus eleutherus*	E	N/A	Habitat includes deep, swift riffles in large rivers. They prefer cobble and boulder substrates (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Northern Brook Lamprey/ *Ichthyomyzon fossor*	E	N/A	Adult lampreys are found in clear brooks with fast flowing water and sand or gravel bottoms. Juveniles are found in slow moving water buried in soft substrate in medium to large streams (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.

Results
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Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Shovelnose Sturgeon/ *Scaphirhynchus platorynchus*	E	N/A	Habitat includes large rivers with sand and gravel substrates and fast current (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Northern Madtom/ *Noturus stigmosus*	E	N/A	Habitat includes deep, swift riffles of large rivers with substrates of cobble and boulders (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Popeye Shiner/ *Notropis ariommus*	E	N/A	Habitat includes warm, relatively clear flowing waters of large creeks and small to medium rivers; these shiners are closely associated with gravel substrate; typically they occur in runs, backwaters near appreciable current, and the head of pools (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Shoal Chub/ *Macrhybopsis hyostoma*	E	N/A	This species is usually found in large, low gradient rivers over broad, shallow, fast riffles over firm gravel, though it is often in fast water over shifting sand. Typically in waters with high turbidity and dissolved solids (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Shortnose Gar/ *Lepisosteus platostomus*	E	N/A	Habitat includes large weedy lakes and reservoirs, backwaters and quiet pools of medium to large rivers, stagnant ponds, sloughs, canals, brackish waters of coastal inlets, occasionally coastal marine waters; often near vegetation or close to submerged or overhanging objects by day. Young tend to occupy shallows, larger individuals in deeper water. Spawning occurs over weed beds of shallow waters in rivers, usually in grass and weeds in shoal water in lakes; or near stone piles of railroad bridges, in nests of smallmouth bass, or over gravel bars (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
American Eel/ *Anguilla rostrata*	T	N/A	The American eel may be found at times in any perennial stream in Ohio and in Lake Erie. They appear most often in moderate or large rivers with continuous flow and moderately clear water. While in fresh water, eels are secretive and hide in deep pools around cover, sometimes burying themselves during the day and coming out to feed at night, preferably on fish or crayfish (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Blue Sucker/ *Cycleptus elongatus*	T	N/A	Habitat includes the largest rivers and lower portions of major tributaries. Usually occurs in channels and flowing pools with moderate current (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Channel Darter/ *Percina copelandi*	T	N/A	Habitat includes warm, low and moderate gradient rivers and large creeks in areas of moderate current. This darter usually is found over sand and gravel substrates; it prefers clear water and silt-free bottoms (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Paddlefish/ *Polydon spathula*	T	N/A	Habitat includes slow-flowing water of large and medium-sized rivers, river-margin lakes, channels, oxbows, backwaters, impoundments with access to spawning areas. This fish prefers depths greater than 1.5 m; it seeks deeper water in late fall and winter. Individuals may congregate near human-made structures that create eddies and reduce current velocity (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
River Darter/ *Percina shumardi*	T	N/A	Large rivers and lower portions of tributaries; deep chutes and riffles where current is swift and bottom is coarse gravel or rock (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Tippecanoe Darter/ *Etheostoma tippecanoe*	T	N/A	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.
Eastern Hellbender/ *Cryptobranchus alleganiensis alleganiensis*	E	SC	Found in mostly unglaciated Ohio and prefer large, swift flowing streams where they hide under larger rocks (ODNR Division of Wildlife 2020).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Timber Rattlesnake/ *Crotalus horridus horridus*	E	SC	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Eastern Spadefoot/ *Scaphiopus holbrookii*	E	N/A	Eastern spadefoots occur in areas of sandy, gravelly, or soft, light soils in wooded or unwooded terrain. On land, they range up to at least several hundred meters from breeding sites. When inactive, they remain burrowed in the ground. Eggs and larvae develop in temporary pools formed by heavy rains. Breeding sites include temporary pools and areas flooded by heavy rains (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Green Salamander/ *Aneides aeneus*	E	N/A	Green salamanders prefer damp, but not wet, crevices in shaded rock outcrops and ledges. They are also found beneath loose bark and in cracks of standing or fallen trees (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Midland Mud Salamander/ *Pseudotriton montanus*	T	N/A	Muddy springs, slow floodplain streams, and swamps along slow streams; backwater ponds and marshes created by beaver activity (NatureServe 2022).	Potentially suitable habitat (Wetland 1) was observed within the Project area.	**ODNR** - Due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, ODNR states that due to the Project location, and type of work proposed, the Project is not likely to impact this species.

Results
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Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix D)	Potential Impacts and Avoidance Dates
Allegheny Woodrat/ *Neotoma magister*	E	N/A	Typical habitat is rocky cliffs and talus slopes. These woordrats make midden mounds and stick piles among rocks, but secluded nest sites generally are not within stick houses (NatureServe, 2022).	No suitable habitat was observed within the Project area.	**ODNR** - Due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.
Riverbank Paspalum/ *Paspalum repens*	T	N/A	Found floating in sluggish streams or standing water or creeping in wet places (NatureServe, 2022).	Potentially suitable habitat (Wetland 1) was observed within the Project area.	**ODNR** - The Natural Heritage Database lists this species as occurring at or within a one-mile radius of the Project area. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. No individuals were observed during wetland and waterbody delineation field surveys. Therefore, impacts to this species are possible but not anticipated.
Umbrella Magnolia/ *Magnolia tripetala*	PT	N/A	Moist soils high in humus, especially protected ravines, along streams, and on lower mountain slopes (NatureServe, 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The Natural Heritage Database lists this species as occurring at or within a one-mile radius of the Project area. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.

*Status key: E=Endangered; T=Threatened; PT=Potentially Threatened; SC=Species of Concern

**The information is based on the literature review response information from ODNR and USFWS and is study area/project specific.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species within the Project area on July 18, 2022. During the field surveys, one PSS wetland totaling 1.37 acres was observed within the Project area. No streams or open water features were observed within the Project area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project Area at the time of the field work. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on December 15, 2021. The ODNR Office of Real Estate response letter dated January 14, 2022, stated that the entire state of Ohio is within the range of the Indiana bat, northern long-eared bat, little brown bat, and the tricolored bat. If trees are present within the Project area, and trees must be cut, the Division of Wildlife (DOW) recommends cutting only occur from October 1 – March 31, conserving trees with loose, shaggy bark and/or crevices holes, or cavities as well as trees with diameter at breast height (dbh) ≥ 20 inches if possible. If trees are present within the Project area and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within 0.25 miles of the Project area. Stantec completed a desktop habitat assessment in accordance with the 2022 Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines (USFWS 2022) utilizing available ODNR websites, including data on known abandoned or active mines (ODNR 2022a) and locations of known or suspected karst geology (ODNR 2022b). No active or abandoned mines, areas karst geology or karts features were identified during the desktop assessment within a 0.25-mile buffer of the Project area. In addition, no potential bat hibernacula were observed within the Project area during the field surveys. However, potentially suitable summer foraging and roosting habitat was observed within the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable foraging and roost habitat and will proceed in accordance with agency requirements.

According to the ODNR response letter, the Project is within the range of the federally-listed endangered clubshell, fanshell, northern riffleshell, pink mucket, purple cat's paw, rayed bean, sheepnose, and snuffbox, state-listed endangered butterfly, ebonyshell, elephant-ear, little spectaclecase, long-solid, monkeyface, Ohio pigtoe, pyramid pigtoe, sharp-ridged pocketbook, wartyback, washboard, and yellow sandshell, state-listed threatened black sandshell, fawnsfoot,

and threehorn wartyback. DOW stated that due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this Project is not likely to impact these species.

According to the ODNR response letter, the Project is within the range of the state-listed endangered bigeye shiner, gilt darter, goldeye, mountain madtom, northern brook lamprey, shovelnose sturgeon, northern madtom, popeye shiner, shoal chub, and shortnose gar, and the state-listed threatened American eel, blue sucker, channel darter, paddlefish, river darter and Tippecanoe darter. ODNR recommends, no in-water work in perennial streams from March 15 – June 30 to reduce impacts to indigenous aquatic species and their habitat. However, due to the location, and that there is no perennial stream within the Project area, this Project is not likely to impact these species.

According to the ODNR response letter, the eastern hellbender, a state-listed endangered species and a federal species of concern, is within range of the Project site. However, DOW stated due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this Project is not likely to impact this species.

The ODNR response also stated that the Project is within the range of the state-listed endangered and federal species of concern timber rattlesnake. However, DOW stated due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species.

The Project is also within the range of the state-listed endangered eastern spadefoot toad. However, DOW stated due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species.

The Project is also within the range of the state-listed endangered green salamander. However, DOW stated due to the location, the type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact this species.

The Project is also within the range of the state-listed threatened midland mud salamander and potentially suitable habitat (Wetland 1) was observed. However, DOW stated that due to the location of the Project and the type of work proposed the Project is not likely to impact this species.

The Project is also within the range of the state-listed endangered Allegheny woodrat. However, DOW stated due to the location, the type of habitat within the Project area, and the type of work proposed, the Project is not likely to impact this species.

The ODNR response letter also included species from the Natural Heritage Database located at or within a one-mile radius of the Project area. The Natural Heritage Database list included the following species: two records of state-listed plant species and three records of state-listed freshwater mussels. One of the plant species, riverbank paspalum, has potentially suitable habitat (Wetland 1) within the Project area. No individuals were observed during the wetland and waterbody delineation field surveys. Therefore, impacts to this species are possible but not anticipated.

A technical assistance request letter was submitted to the USFWS on December 15, 2021. USFWS response letter dated December 20, 2021, recommends that the proposed Project avoid and minimize impacts to all wetland habitats to the maximum extent possible and natural buffers around streams and wetlands should be preserved to enhance beneficial functions.

According to the USFWS response letter, the entire State of Ohio lies within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. Therefore, USFWS recommends that trees ≥ 3 inches dbh be saved wherever possible and any tree removal that is unavoidable should only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. If implementation of the seasonal tree cutting recommendation is not possible, a summer presence/absence survey is recommended for Indiana bats. Surveys must be conducted in coordination with the USFWS Ohio Field Office.

The Project area does contain potentially suitable foraging and roosting habitat for the Indiana bat and northern long-eared bat. AEP will determine if any tree clearing is necessary in areas containing suitable foraging and roost habitat and will proceed in accordance with agency requirements. The USFWS also stated that they do not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the Project type, size, and location (Appendix D).

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Wetland Impacts Table
September 7, 2022

APPENDIX A WETLAND IMPACTS TABLE

Table 1. Summary of NWI Disposition within the Cottrell Extension – Millbrook Park 138 kV Line Extension Project

Scioto County, Ohio

NWI Code	NWI Description	Figure 2 Page Number	Related Field Inventoried Resource	Comments
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.
PSS1C	Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Seasonally Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.
PSS1F	Palustrine, Scrub-Shrub, Broad-leaved Deciduous, Semi permanently Flooded	1	Wetland 1	Delineated as PSS Wetland, Wetland 1.

Table 2. Summary of Stream Resources Found within the Cottrell Extension – Millbrook Park 138 kV Line Extension Project

Scioto County, Ohio

Wetland ID	Location			Isolated?[2]	Habitat Type[3,4]	Delineated Area (acre)	ORAM[5]		Nearest Proposed Structure Number	Existing Structure Number in Wetland	Proposed Structure Number in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude	Photo Location[1]				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland 1	38.763361	-82.859988	1	No	PSS	1.37	54	2	N/A	None	N/A	N/A	TBD	TBD
					Total:	**1.37**						**Total:**	**TBD**	**TBD**

[1] Appendix B - Figure 2 and Appendix D – Photo log D-1
[2] Pending USACE jurisdictional review
[3] Habitat type based on Cowardin et al. (1979).
[4] PSS = Palustrine Scrub/Shrub Wetland
[5] ORAM Score and Category are based on the Ohio Rapid Assessment Method for Wetland v. 5.0 (Mack 2001).

APPENDIX B FIGURES

B.1 PROJECT LOCATION MAP

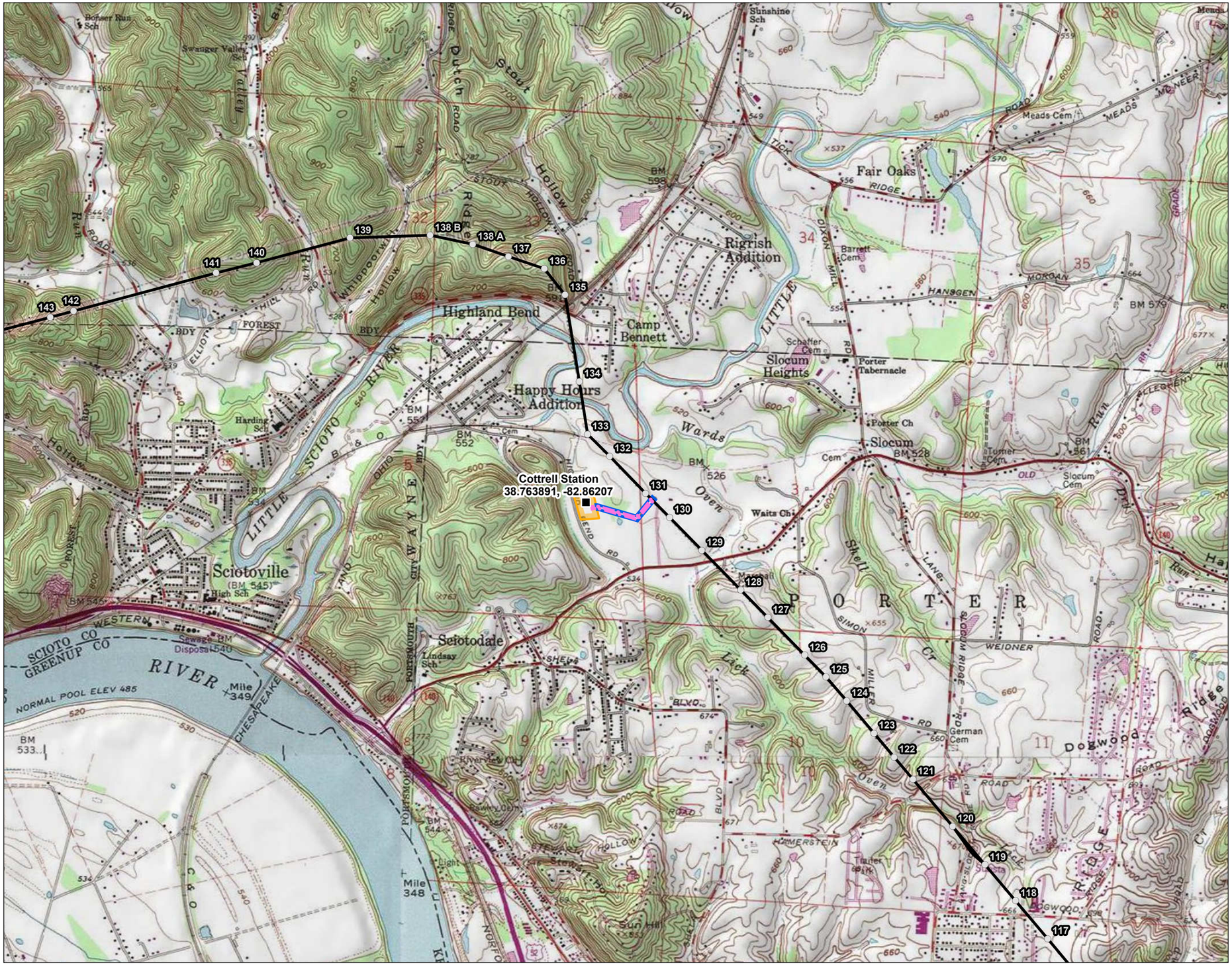


Figure No.
1

Title
Project Location Map

Client/Project 193708586
AEP Ohio Transmission Company, Inc.
Cottrell 138 kV Line Extension Project

Project Location
Scioto County, Ohio

Prepared by JD on 2022-08-04
TR by CA on 2022-08-15
IR by KB on 2022-08-26

N

0 1,000 2,000 Feet
(At original document size of 11x17)
1:24,000

Legend
- AEP Substation
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Cottrell Station Boundary
- Wayne National Forest*

*Project is not located within the Wayne

Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, NADS
3. Background: USGS 7.5' Topographic Quadrangles - Minford, OH (1983)

Stantec

B.2 WETLAND AND WATERBODY DELINEATION MAP

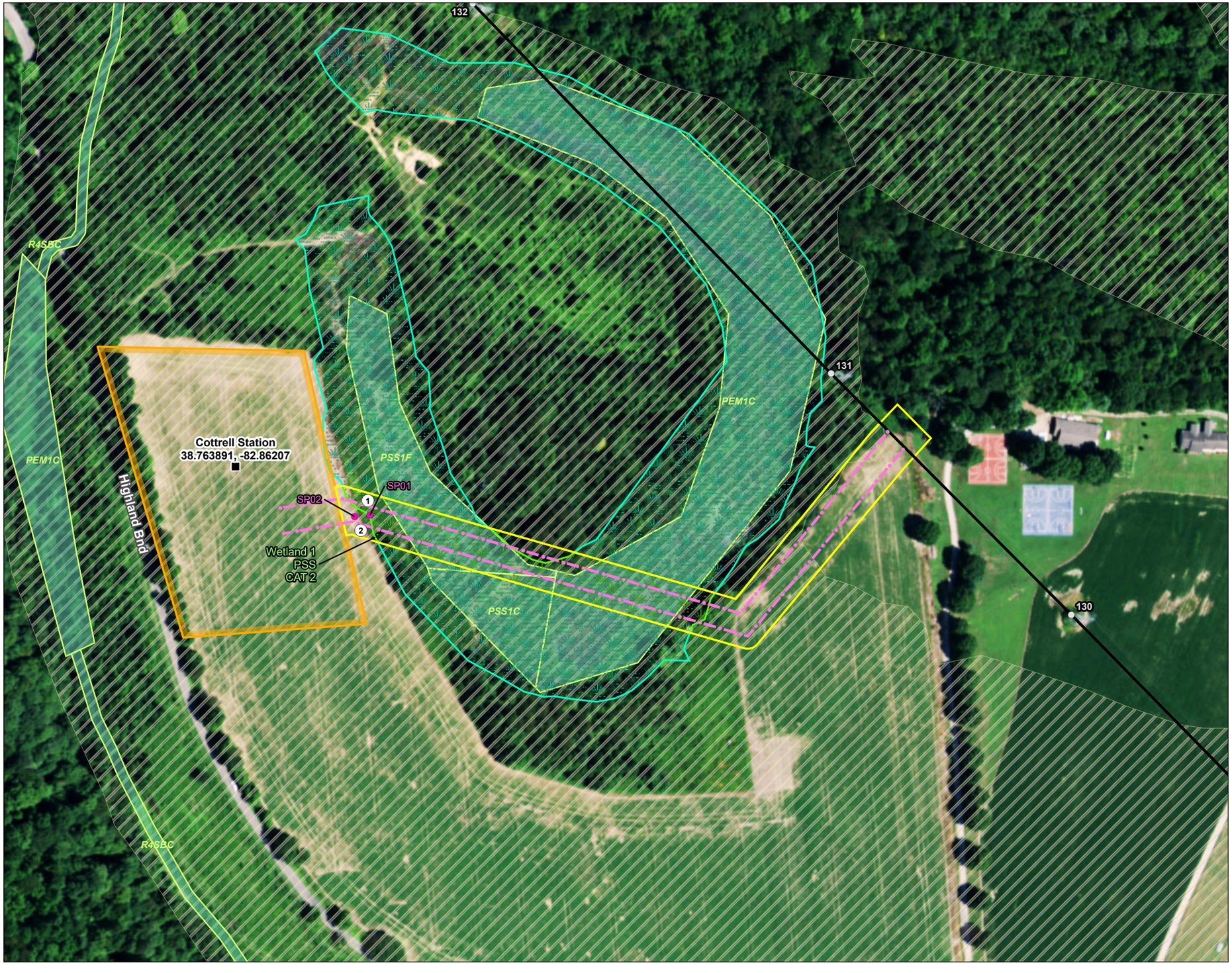


Figure No.
2

Title
Wetland and Waterbody Delineation Map

Client/Project 193708586
AEP Ohio Transmission Company, Inc.
Cottrell 138 kV Line Extension Project

Project Location
Scioto County, Ohio

Prepared by JD on 2022-08-04
TR by CA on 2022-08-15
IR by KB on 2022-08-26

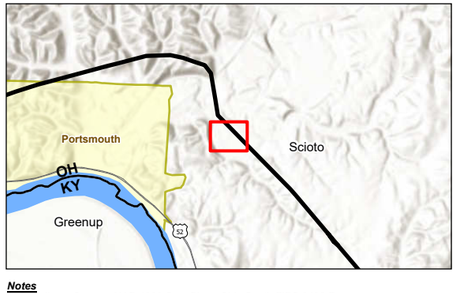
N

0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend
- AEP Substation
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Cottrell Station Boundary
- Photo Location
- Wetland Determination Sample Point
- Field Delineated Shrub-Scrub Wetland
- Approximate Wetland
- National Wetlands Inventory Feature

FEMA Flood Hazard Area
- 100-year Floodplain
- Floodway*

*No features within data frame



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, USFWS, FEMA, NADS
3. Orthophotography: 2019 NAIP

Stantec

B.3 HABITAT ASSESSMENT MAP

Figure No.
3

Title
Habitat Assessment Map

Client/Project
193708586
AEP Ohio Transmission Company, Inc.
Cottrell 138 kV Line Extension Project

Project Location
Scioto County, Ohio

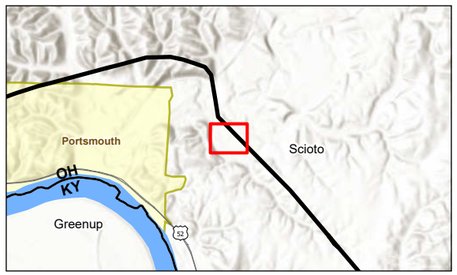
Prepared by JD on 2022-08-04
TR by CA on 2022-08-15
IR by KB on 2022-08-26

N

0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend
- AEP Substation
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Cottrell Station Boundary
- Photo Location

Habitat Area
- Agricultural Field
- Second Growth Deciduous Forest
- Maintained Lawn
- Field Delineated Shrub-Scrub Wetland
- Approximate Wetland



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, NADS
3. Orthophotography: 2019 NAIP

Stantec

B.4 HIBERNACULA DESKTOP STUDY MAP

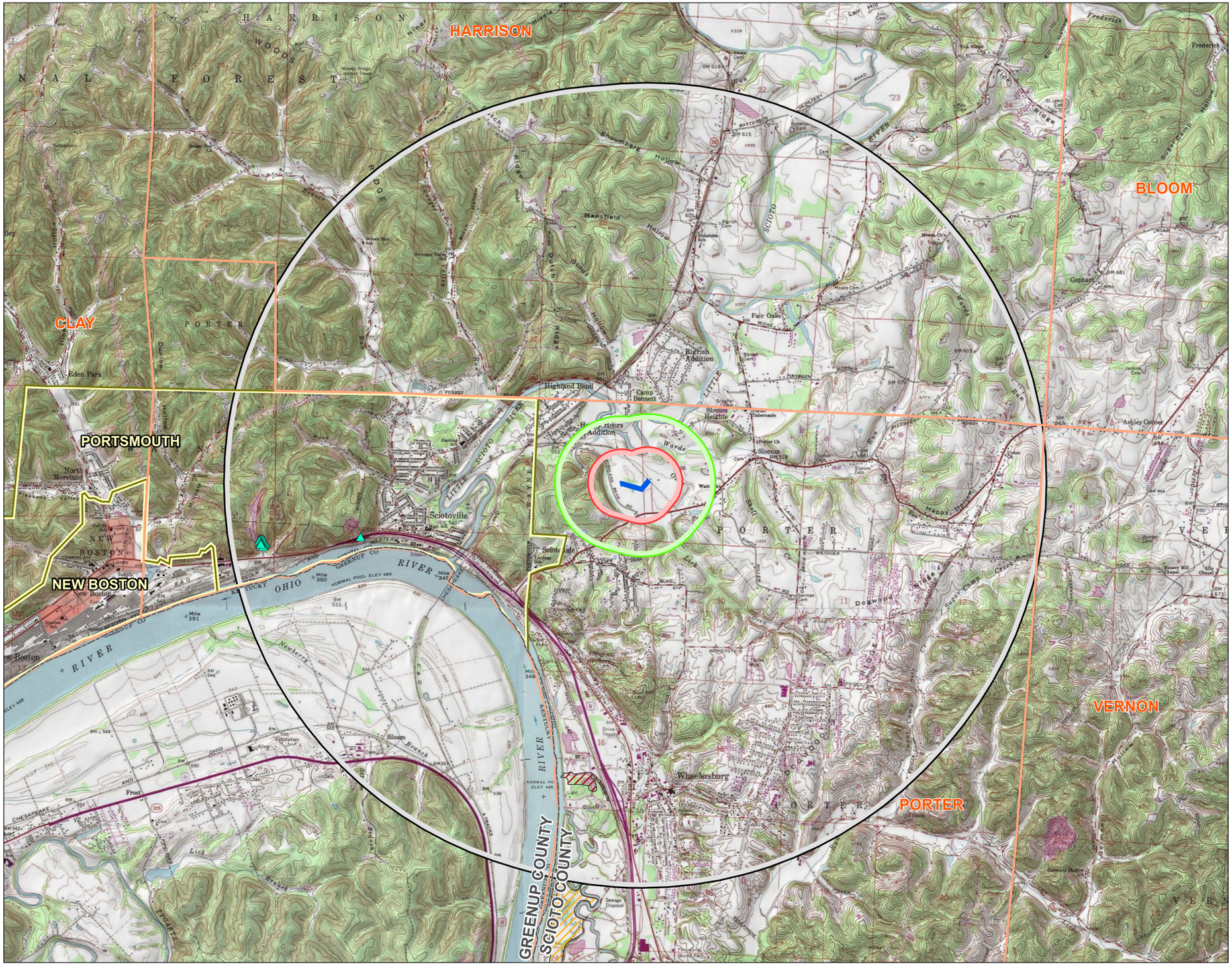


Figure No.
4

Title
Bat Hibernacula Desktop Study Map

Client/Project 193708586
AEP Ohio Transmission Company, Inc.
Cottrell 138 kV Line Extension Project

Project Location
Scioto County, Ohio

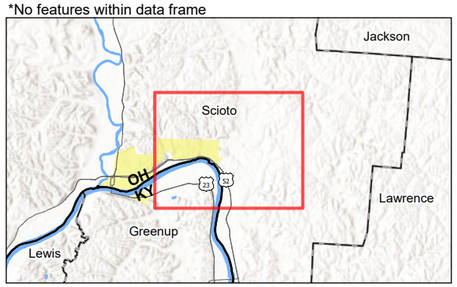
Prepared by JD on 2022-08-04
TR by CA on 2022-08-15
IR by KB on 2022-08-22

N

0 2,000 4,000 Feet
(At original document size of 11x17)
1:48,000

Legend
- Project Area
- 0.25-Mile Project Area Buffer
- 0.5-Mile Project Area Buffer
- 3-Mile Project Area Buffer
- Area of Karst Geology*
- Abandoned Underground Mine
- Inactive Mine*
- Active Surface Mine*
- Abandoned Surface Mine Area*
- Abandoned Underground Mine Area
- Inactive Surface Mine Area
- Active Surface Mine Area
- Surface Mine Area (Unknown Status)*

*No features within data frame



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Stantec, AEP, USGS, ODNR, NADS
3. Background: USGS 7.5' Topographic Quadrangles - Minford, OH (1983))

Stantec

APPENDIX C FIELD COLLECTED DATA FORMS

C.1 WETLAND DETERMINATION FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cottrell Extension – Millbrook Park 138 kV Line Extension Project City/County: Scioto County Sampling Date: 07/18/2022

Applicant/Owner: AEP State: OH Sampling Point: SP01

Investigator(s): M Kearns, A Hansen Section, Township, Range: T002N, R020W, S4

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0

Subregion (LRR or MLRA): LRR N Lat: 38.763634 Long: -82.861133 Datum: WGS84

Soil Map Unit Name: Stendal silt loam, occasionally flooded NWI classification: PSS1F

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

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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

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

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID: Wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present	Yes X	No ____	Depth (inches): 4
Water Table Present	Yes X	No ____	Depth (inches): 0
Saturation Present (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: SP01

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. Cephalanthus occidentalis	25	Yes	OBL
2. Acer saccharinum	5	No	FACW
3. Sambucus nigra	5	No	FAC
4.			
5.			
6.			
7.			
	35 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Persicaria amphibia	45	Yes	OBL
2. Toxicodendron radicans	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

- 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: SP01

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 5/2	93	10YR 4/6	7	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 146, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cottrell Extension – Millbrook Park 138 kV Line Extension Project City/County: Scioto County Sampling Date: 07/18/2022

Applicant/Owner: AEP State: OH Sampling Point: SP02

Investigator(s): M Kearns, A Hansen Section, Township, Range: T002N, R020W, S4

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope %: 2

Subregion (LRR or MLRA): LRR N Lat: 38.763625 Long: -82.861239 Datum: WGS84

Soil Map Unit Name: Elkinsville silt loam, 1 to 8 percent slopes NWI classification: NA

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

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: wetland 1

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present	Yes ____	No X	Depth (inches): ____
Water Table Present	Yes ____	No X	Depth (inches): ____
Saturation Present (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: SP02

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. Glycine max	15	Yes	UPL
2. Acalypha rhomboidea	10	Yes	FACU
3. Amaranthus albus	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	15	x 5 =	75
Column Totals:	30 (A)		135 (B)
Prevalence Index = B/A =			4.5

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
70% open ground

SOIL

Sampling Point: SP02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 146, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: N/A

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

C.2 ORAM FORM

Version 5.0	**Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization**	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

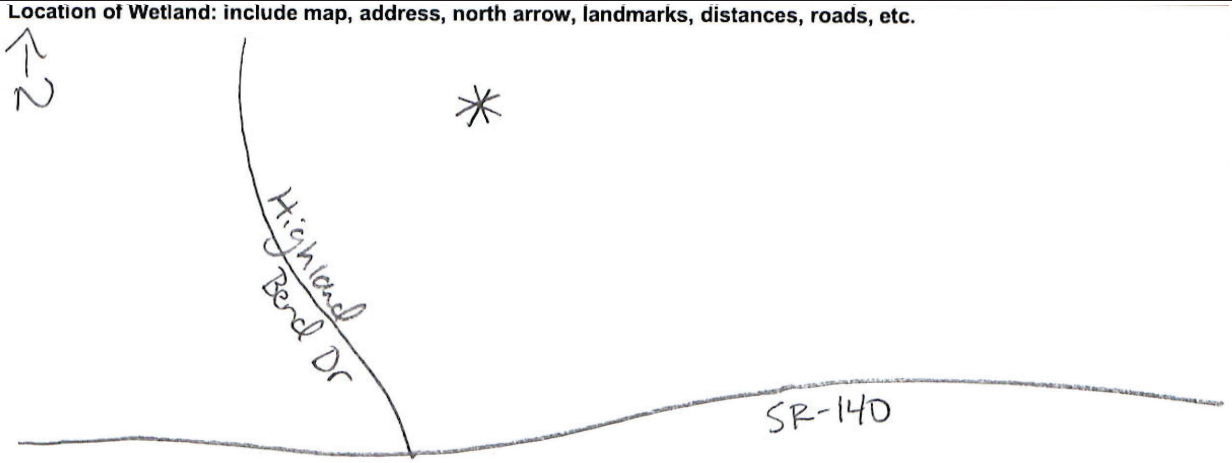
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	Michelle Kearns
Date:	07/18/2022
Affiliation:	Stantec Consulting Services Inc.
Address:	1500 Lake Shore Dr, Suite 100, Columbus, OH 43204
Phone Number:	614-256-3462
e-mail address:	michelle.kearns@stantec.com
Name of Wetland:	Wetland 1
Vegetation Communit(ies):	PSS
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

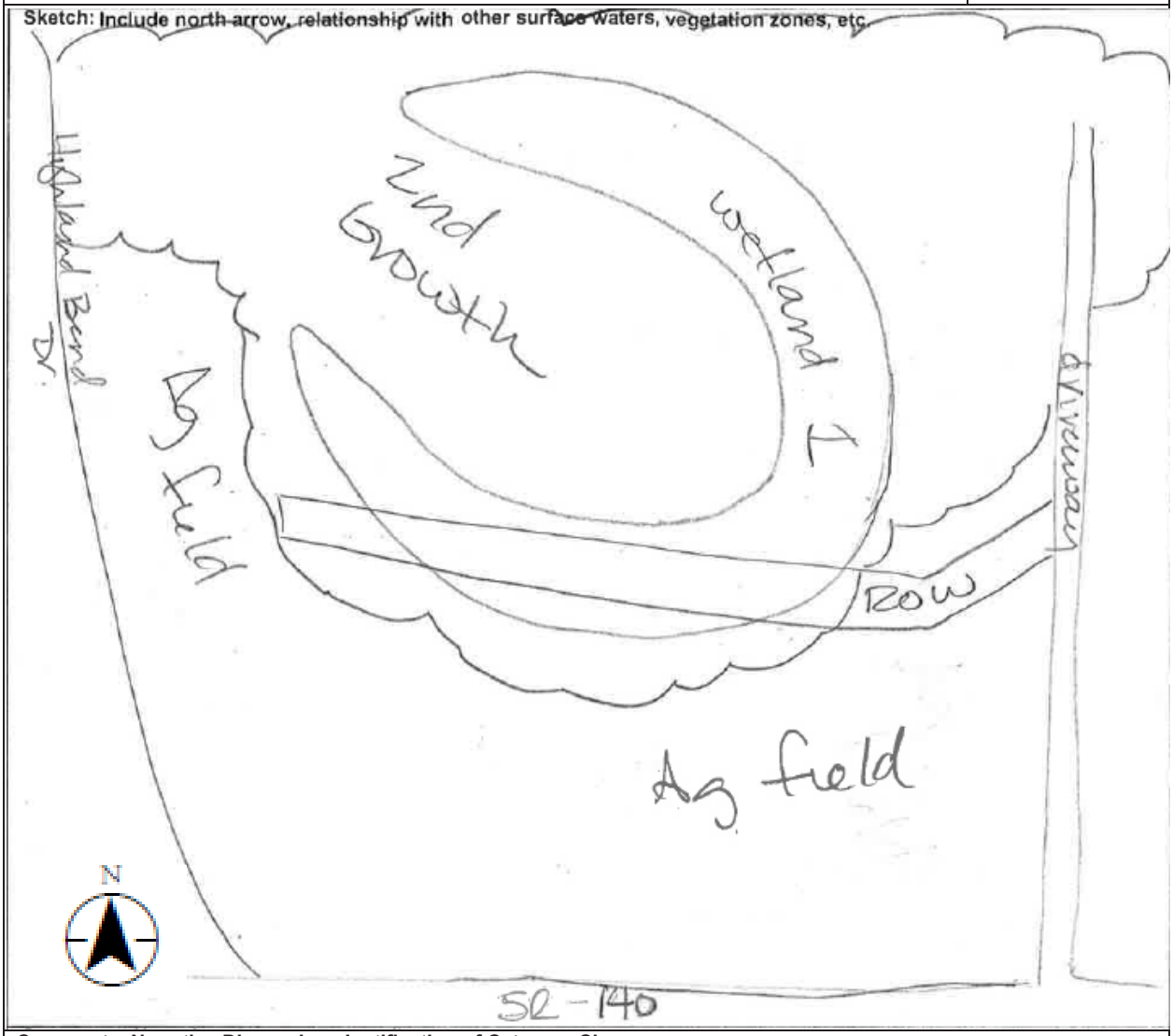


Lat/Long or UTM Coordinate	38.763361, -82.859988
USGS Quad Name	Minford, OH
County	Scioto
Township	Porter Twp, T2
Section and Subsection	Section 4
Hydrologic Unit Code	050901030605
Site Visit	07/18/2022
National Wetland Inventory Map	Yes
Ohio Wetland Inventory Map	No
Soil Survey	NRCS Scioto County Soil Survey
Delineation report/map	Cottrell Extension – Millbrook Park 138 kV Line Extension Project Ecological Report - Figure 2

Name of Wetland: Wetland 1

Wetland Size (acres, hectares): 1.37 ac in Project (13.0 ac total)

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

Wetland is within floodplain and 500' of Little Scioto River. Vegetation was dominated by buttonbush. Beaver activity was observed surrounding wetland

Final score : 54 **Category:** 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

Wetland 1 Michelle Kearns 07/18/2022

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

Wetland 1 Michelle Kearns 07/18/2022

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES ☐ Wetland should be evaluated for possible Category 3 status Go to Question 2	NO ☒ Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES ☐ Wetland is a Category 3 wetland. Go to Question 3	NO ☒ Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES ☐ Wetland is a Category 3 wetland Go to Question 4	NO ☒ Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES ☐ Wetland is a Category 3 wetland Go to Question 5	NO ☒ Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES ☐ Wetland is a Category 1 wetland Go to Question 6	NO ☒ Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES ☐ Wetland is a Category 3 wetland Go to Question 7	NO ☒ Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES ☐ Wetland is a Category 3 wetland Go to Question 8a	NO ☒ Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES ☐ Wetland is a Category 3 wetland. Go to Question 8b	NO ☒ Go to Question 8b

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES ☐ Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO ☒ Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES ☐ Go to Question 9b	NO ☒ Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES ☐ Wetland should be evaluated for possible Category 3 status Go to Question 10	NO ☐ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES ☐ Go to Question 9d	NO ☐ Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES ☐ Wetland is a Category 3 wetland Go to Question 10	NO ☐ Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES ☐ Wetland should be evaluated for possible Category 3 status Go to Question 10	NO ☐ Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES ☐ Wetland is a Category 3 wetland. Go to Question 11	NO ☒ Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES ☐ Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO ☒ Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Wetland 1	**Rater(s):** Michelle Kearns	**Date:** 07/18/2022

Metric 1. Wetland Area (size).

4	4
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

10	14
max 14 pts.	subtotal

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

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

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

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

Metric 3. Hydrology.

20	34
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select only one and assign score.

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

14	48
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

48
subtotal this page

last revised 1 February 2001 jjm

Site: Wetland 1	**Rater(s):** Michelle Kearns	**Date:** 07/18/2022

48
subtotal first page

Metric 5. Special Wetlands.

0 max 10 pts. | 48 subtotal

Check all that apply and score as indicated.

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

Metric 6. Plant communities, interspersion, microtopography.

6 max 20 pts. | 54 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

54

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 1 Michelle Kearns 07/18/2022

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	4	
	Metric 2. Buffers and surrounding land use	10	
	Metric 3. Hydrology	20	
	Metric 4. Habitat	14	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	54	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES ☐ Wetland is categorized as a Category 3 wetland	NO ☒	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES ☐ Wetland should be evaluated for possible Category 3 status	NO ☒	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES ☐ Wetland is categorized as a Category 1 wetland	NO ☒	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES ☒ Wetland is assigned to the appropriate category based on the scoring range	NO ☐	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES ☐ Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO ☒	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES ☐ Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO ☒ Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
Category 2	☐	☒	☐

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX D REPRESENTATIVE PHOTOGRAPHS

D.1 WETLAND AND WATERBODY PHOTOGRAPHS

Photo Location 1. View of Wetland 1 and wetland determination sample point SP01, wetland. Photograph taken facing east.

Photo Location 1. View of wetland determination sample point SP01 soil profile.

Photo Location 1. View of Wetland 1. Photograph taken facing north.

Photo Location 1. View of Wetland 1. Photograph taken facing south.

Photo Location 2. View of wetland determination sample point SP02, upland. Photograph taken facing south.

Photo Location 2. View of wetland determination sample point SP02 soil profile.

D.2 HABITAT PHOTOGRAPHS

Photo Location 3. View of second growth deciduous forest habitat in background and agricultural field in foreground. Photograph taken facing northeast.

Photo Location 3. View of second growth deciduous forest habitat in background and agricultural field in foreground. Photograph taken facing southwest.

APPENDIX E AGENCY CORRESPONDENCE

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

January 14, 2022

Michelle Kearns
Stantec Consulting Services Inc.
1500 Lake Shore Drive, Suite 100
Columbus, Ohio 43204

Re: 21-1129; AEP Cottrell Station and Cottrell Extension - E. Wheelersburg and Millbrook Park 138 KV Line Extension Projects

Project: The proposed project involves the extension of 138 kV transmission lines.

Location: The proposed project is located in Scioto County, Ohio.

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

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

Umbrella Magnolia (*Magnolia tripetala*), P
Riverbank Paspalum (*Paspalum repens*), T
Black Sandshell (*Ligumia recta*), T
Salamander Mussel (*Simpsonaias ambigua*), SC
Deertoe (*Truncilla truncata*), SC

The review was performed on the project area specified in the 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. Additional comments on some of the features may be found in pertinent sections below.

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; U = state status under review; X = presumed extirpated in Ohio; FE = federal endangered, and FT = federal threatened.

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 entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Erin Hazelton at Erin.hazelton@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*Range-wide Indiana Bat Survey Guidelines*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Erin Hazelton for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species.

Federally Endangered

clubshell (*Pleurobema clava*)	purple cat's paw (*Epioblasma o. obliquata*)
fanshell (*Cyprogenia stegaria*)	rayed bean (*Villosa fabalis*)
northern riffleshell (*Epioblasma torulosa rangiana*)	sheepnose (*Plethobasus cyphyus*)
pink mucket (*Lampsilis orbiculata*)	snuffbox (*Epioblasma triquetra*)

State Endangered

butterfly (*Ellipsaria lineolata*)
ebonyshell (*Fusconaia ebena*)
elephant-ear (*Elliptio crassidens crassidens*)
little spectaclecase (*Villosa lienosa*)
long-solid (*Fusconaia maculata maculata*)
monkeyface (*Quadrula metanevra*)
Ohio pigtoe (*Pleurobema cordatum*)
pyramid pigtoe (*Pleurobema rubrum*)
sharp-ridged pocketbook (*Lampsilis ovate*)
wartyback (*Quadrula nodulata*)
washboard (*Megalonaias nervosa*)
yellow sandshell (*Lampsilis teres*)

State Threatened

black sandshell (*Ligumia recta*)
fawnsfoot (*Truncilla donaciformis*)
threehorn wartyback (*Obliquaria reflexa*)

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

The project is within the range of the following listed fish species.

State Endangered

bigeye shiner (*Notropis boops*)
gilt darter *(Percina evides)*
goldeye (*Hiodon alosoides*)
mountain madtom (*Noturus eleutherus*)
northern brook lamprey (*Ichthyomyzon fossor*)
shovelnose sturgeon (*Scaphirhynchus- platorynchus*)
northern madtom (*Noturus stigmosus*)
popeye shiner (*Notropis ariommus*)
shoal chub (*Macrhybopsis hyostoma*)
shortnose gar (*Lepisosteus platostomus*)

State Threatened

American eel (*Anguilla rostrata*)
blue sucker (*Cycleptus elongatus*)
channel darter (*Percina copelandi*)
paddlefish (*Polyodon spathula*)
river darter (*Percina shumardi*)
Tippecanoe darter (*Etheostoma tippecanoe*)

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact 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. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the 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. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Allegheny woodrat (*Neotoma magister*), a state endangered species. The Allegheny woodrat utilizes rocky outcrops such as cliffs and caves in forested areas. To avoid impacts to this species, impacts to cliffs and rocky outcrops should be avoided. In addition, a buffer of 100 feet above and 200 feet below cliffs and rocky outcrops should be maintained. Due to the location, the type of habitat within the project area, and the type of work proposed, 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 US 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 Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

From:	Ohio, FW3
To:	Kearns, Michelle
Cc:	nathan.reardon@dnr.state.oh.us; Parsons, Kate; Teitt, Matthew; Grant S Stuller
Subject:	AEP Cottrell Station and Cottrell Extension - E. Wheelersburg and Millbrook Park 138 kV Line Extension Projects, Scioto County, Ohio
Date:	Monday, December 20, 2021 11:23:51 AM
Attachments:	image.png image.png

TAILS# 03E15000-2022-TA-0501

Dear Ms. Kearns,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found 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 breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet 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, rock crevices and abandoned mines.

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

during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then 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 the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army 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. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@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 Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Summary: Notice Construction Notice, South-Point/Portsmouth electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc..