Letter of Notification for the Sadiq Switch -Sweetgum 138-kV Transmission Line Project

PUCO Case No. 25-0025-EL-BLN

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

Submitted by:
AEP Ohio Transmission Company, Inc.

January 23, 2025

Letter of Notification

Sadiq Switch – Sweetgum 138 kV Transmission Line 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 Sadiq Switch – Sweetgum 138 kV Transmission Line Project ("Project"), in Porter Township, Scioto County, Ohio. The Project involves building 1.1 miles of new single circuit 138-kV transmission line between the proposed Sadiq Switch and Sweetgum Substation. The Sadiq Switch is a new switch structure filed under Case No. 24-0935-EL-BNR. Sweetgum Substation is a planned distribution stepdown station. The Project proposes to use steel monopole structures and require a 100-foot right-of-way.

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

The Project meets the requirements for a Letter of Notification (LON) because it is within the types of projects defined by Item (1)(b) of 4906-1-01 *Appendix A Application Requirement Matrix For Electric Power Transmission Lines* of which states:

> *(1) New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:*
>
> *(b) Line(s) greater than 0.2 miles in length but not greater than two miles in length.*

The Project has been assigned PUCO Case No. 25-0025-EL-BLN**.**

B(2) Statement of Need

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

The Project 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.
- 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.
- , and
- Build ~3.0 miles of new 138-kV line from Sweetgum Station to Althea Station to address baseline thermal overload issues, and
- Build ~1.13 miles of 138-kV transmission line from Sadiq Switch to Sweetgum Station, which is the subject of this filing.

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'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 to continue to provide safe, reliable service to their customers.

The need for the Project was presented at the PJM SRRTEP on January 7, 2015 and January 28, 2021 meetings. The solution was presented at the PJM SRRTEP on February 17, 2021 meeting, and subsequently assigned a PJM # of s2464. This Project was included in the Company's 2024 Long Term

Forecast Report, and is located on page 78 (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 Project is in Scioto County, Porter Township, Ohio. **Exhibit 1** in **Appendix A** shows the Project area on a United States Geological Survey (USGS) Wheelersburg topographic quadrangle map in relation to the existing Ironton-Portsmouth 138-kV Transmission Line, East Wheelersburg – Texas Eastern 138-kV Transmission Line, the existing Texas Eastern Substation, the proposed Sadiq Switch, and the planned distribution, stepdown Sweetgum Substation. **Exhibit 2** in **Appendix A** identifies the proposed Sadiq Switch – Sweetgum 138-kV Transmission Line, environmental features, parcel boundaries, and nearby utility facilities on aerial imagery.

B(4) Alternatives Considered

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

The Company conducted an analysis of five alternative routes within the Project study area. The Company developed these alternatives based on desktop data, and evaluated each route for land use, environmental, and cultural resources impacts. These route alternatives were presented to the public in an open house in March 2022 to gather public feedback. Based on the information gathered, the Company concluded the proposed route, shown as **Exhibit 2** in **Appendix A** was the most suitable for this Project.

The proposed route parallels the north side of Mill Road and follows an existing distribution line. This route was selected as it parallels existing roadway corridors and provides an opportunity to consolidate the footprint of linear infrastructure in an area of sparse residential development and farmland. Alternative routes through agricultural fields north of the proposed route were evaluated but would have greater environmental impacts as they traversed over Lick Run and its associated floodplains, and greater land use impacts as the routes bisect farm fields, rather than follow parcel boundaries. Additionally, the proposed route can be constructed from the roadside, which would not require access roads through farm fields. The proposed route for the Project would result in minimal disturbances relative to other design alternatives and represents the most suitable location and 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 will inform affected property owners and tenants about this Project through several different mediums. Within seven days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of Ohio Administrative Code ("OAC") Section 4906-6-08(A)(1-6). Further, the Company will mail a letter, via first class mail, to affected landowners, tenants, contiguous landowners, and any other landowner the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). The Company maintains a website (AEPOhio.com/Wheelersburg) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library in each political subdivision for this Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project area.

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 2026 with a proposed in-service date of March 2028.

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 1,000 feet) on the Wheelersburg 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 1:6,000-scale (1-inch equals 400 feet). The ESRI World Imagery is dated September 2021.

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.

A list of properties for which the Company will need to obtain easements/options is provided below.

Property Parcel Number	Agreement Type	Easement Agreement / Option obtained (Yes or No)
170367000	New Easement Agreement	Yes
170368000	New Easement Agreement	No
170013000	New Easement Agreement	Yes
170366000	New Easement Agreement	Yes
170366001	New Easement Agreement	Yes
174812000	New Easement Agreement	No
174869000	New Easement Agreement	No
174812002	New Easement Agreement	Yes
174871000	New Easement Agreement	No

The form easements in **Appendix C** represents the easement rights the Company would seek if condemnation proceedings were necessary to construct, operate, and maintain these facilities.

B(9) Technical Features

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

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

The transmission line construction is estimated to include the following.

Voltage: 138 kV
Conductors: (3) 795 KCM ACSR (26/7)
Static Wire: (1) 7#8 Alumoweld (Possible OPGW on one circuit)
Insulators: Polymer
ROW Width: 100 feet
Structure Type: Five (5) custom monopole dead-end on pier foundations, four (4) custom running angles on pier foundations, four (4) braced posts, and one (1) three-way switch (Sadiq Switch). All structures are single circuit structures.

B(9)(b) Electric and Magnetic Fields

There are two residences within 100 feet of the centerline for this Project. Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB requirements. Normal Maximum Loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal ("WN") conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future.

Electromagnetic frequency ("EMF") levels were computed 1 meter above ground under the line and at the ROW edges (50/50 feet, left/right, of centerline).

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

Sadiq Switch-Sweetgum 138-kV Transmission Line					
Condition	**Load (A)**	**Phasing Arrangements**	**Ground Clearance (feet)**	**Electric Field (kV/m)***	**Magnetic Field (mG)***
(1) Normal Max. Loading^	57.51	A-B-C	33.5	(0.11/1.13/0.26)	(2.04/4.82/2.68)
(2) Emergency Line Loading^^	118.54	A-B-C	28.9	(0.07/1.42/0.23)	(4.61/12.75/6.26)
(3) Winter Conductor Rating^^^	1359	A-B-C	33.5	(0.11/1.13/0.26)	(48.18/114.02/63.43)

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

	General Public	Controlled Environment
	-------	----------
Electric Field Limit (kV/m)	5.0	20.0
Magnetic Field Limit (mG)	9040	27,100

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

B(9)(c) Project Costs

The estimated capital cost of the project.

The cost estimate for the Project, which is comprised of applicable tangible and capital costs, is approximately $2,887,000 using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company's FERC formula rate (Attachment H20 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 agricultural and low-density residential land uses. The Project has no places of worship or airports identified within 1,000 feet of the Project alignment. There are two residences identified within 100 feet of the Project alignment.

B(10)(b) Agricultural Land Information

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

The Scioto County Auditor's office was contacted to obtain information about Agricultural District Lands and received the requested data via email on January 21, 2025. No Agricultural District Lands 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.

A Phase I Archaeological Investigation and a History Architecture Investigation Report was 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 within the project's area of potential effect. The SHPO responded on October 14, 2022 and agreed that the Project as proposed will have no effect on historic properties. Therefore, no further coordination with the SHPO is necessary. The SHPO coordination letter is provided in **Appendix D**.

B(10)(d) Local, State, and Federal Agency Correspondence
Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

A Notice of Intent has been filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC00006, and approved on January 11, 2024. The Company will also coordinate storm water permitting needs with local government agencies as necessary. The Company will implement and maintain best management practices as outlined in the

project-specific Stormwater Pollution Prevention Plan to minimize erosion and sediment runoff to protect surface water quality during storm events.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), a small portion (approximately 280 feet) of the Project is located withinin a 100-year floodplain. Therefore, the Company will be required to obtain a floodplain permit from the Scioto County Floodplain Manager for the construction of any structures within these areas.

As a result of consultation with ODNR, a habitat suitability survey by an approved herpetologist was completed for the eastern spadefoot toad in July 2023. An avoidance plan for the area around Sweetgum Station was developed and coordinated with the ODNR in October 2024, and is provided in **Appendix D**.

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.

Coordination letters were sent to U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources-Division of Wildlife (ODNR-DOW). The USFWS response was 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 D.**

Based on consultation from the USFWS, the Project area lies within range of two federally listed species including the Indiana bat (*Myotis sodalis*) and the 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. Tree clearing is anticipated to occur between October 1 and March 31; however, if seasonal tree cutting cannot be implemented, coordination with USFWS will occur.

ODNR-DOW stated that the entire state of Ohio is within the range of the Indiana bat, the northern long-eared bat, the little brown bat, and the tricolored bat. If trees are present within the Project area and must be cut, ODNR-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 must be cut during the summer months, ODNR-DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting.

ODNR-DOW also recommended that a desktop habitat assessment be conducted, followed by a field assessment if needed, 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, which were the most recent guidelines at the time of survey. No active or abandoned mines, areas with karst geology, or areas with 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. The Company anticipates clearing activities will occur between October 1 and March 31 to avoid adverse effects of Indiana bat, northern long-eared bat, little brown bat, or tricolored bat.

According to the ODNR-DOW response letter, the Project is within the range of eight federally endangered mussel species, 12 state endangered mussel species, three state threatened mussel species, ten state endangered fish species, and six state threatened fish species. Because no in-water work is proposed in a perennial stream, ODNR-DOW stated that this Project is not likely to impact these or other aquatic species.

According to the ODNR response letter, the eastern hellbender, a state endangered species and federal species of concern, is within range of the Project site. However, DOW stated that due to the location and absence of 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 also within the range of the timber rattlesnake (state endangered and federal species of concern), green salamander (state endangered), midland mud salamander (state threatened), and Allegheny woodrat (state endangered). 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 these species.

The Project is also within the range of the state endangered eastern spadefoot toad. The Natural Heritage Database had a record of this species at or within a one-mile radius of the Project area. Under the DOW's recommendation, a habitat suitability survey by an approved herpetologist was completed for the eastern spadefoot toad in July 2023. An avoidance plan for the area around Sweetgum Station was developed and coordinated with the ODNR in October 2024, and is provided in **Appendix D**.

Based on the nature of the proposed project activities and habitat characteristics of the surrounding vicinity, impacts from the construction of the Project to protected species are not anticipated. The Company will coordinate with USFWS and ODNR-DOW regarding additional construction requirements, if required by these agencies.

B(10)(f) Areas of Ecological Concern

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

As stated in Section B(10)(e), a copy of the correspondence letters received from the USFWS and ODNR-DOW are provided in **Appendix D**. 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. As outlined above in B(10)(e) Threatened, Endangered, and Rare Species, several federal and state listed species were identified to potentially occur within the Project area. Based on the nature of the proposed project activities and habitat characteristics of the surrounding vicinity, impacts from the construction of the Project to protected species are not anticipated.

The Company's consultant conducted a wetland and stream delineation in the Project study area and prepared an Ecological Survey Report, which is provided in **Appendix E**. The survey of the Project area identified no wetlands and two streams, but no impacts to either stream are anticipated.

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Numbers 39145C0430E and 39145C0428E (Effective 4.18.2011), the Project is within the boundaries of a 100-year floodplain. One structure will be installed within the 100-year floodplain. The Company will obtain a permit from the Scioto County Floodplain Administrator to perform this proposed activity. No significant loss of floodplain capacity is expected due to the structure's small footprint.

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

Ironton - Portsmith 138 kV Transmission Line

East Wheelersburg-Texas Eastern 138 kV Transmission Line

Sadiq Switch

Sweetgum Substation

Texas Eastern Substation

Legend

- Proposed Switch
- Planned Distribution Step Down Station
- Existing Substation

Base Map Source:
ESRI USGS Topographic
Wheelersburg
(May 2020)

Coordinate System:
State Plane Ohio South
FIPS 3402 (US Feet)
Datum: NAD 1983
Scale: 1:24,000

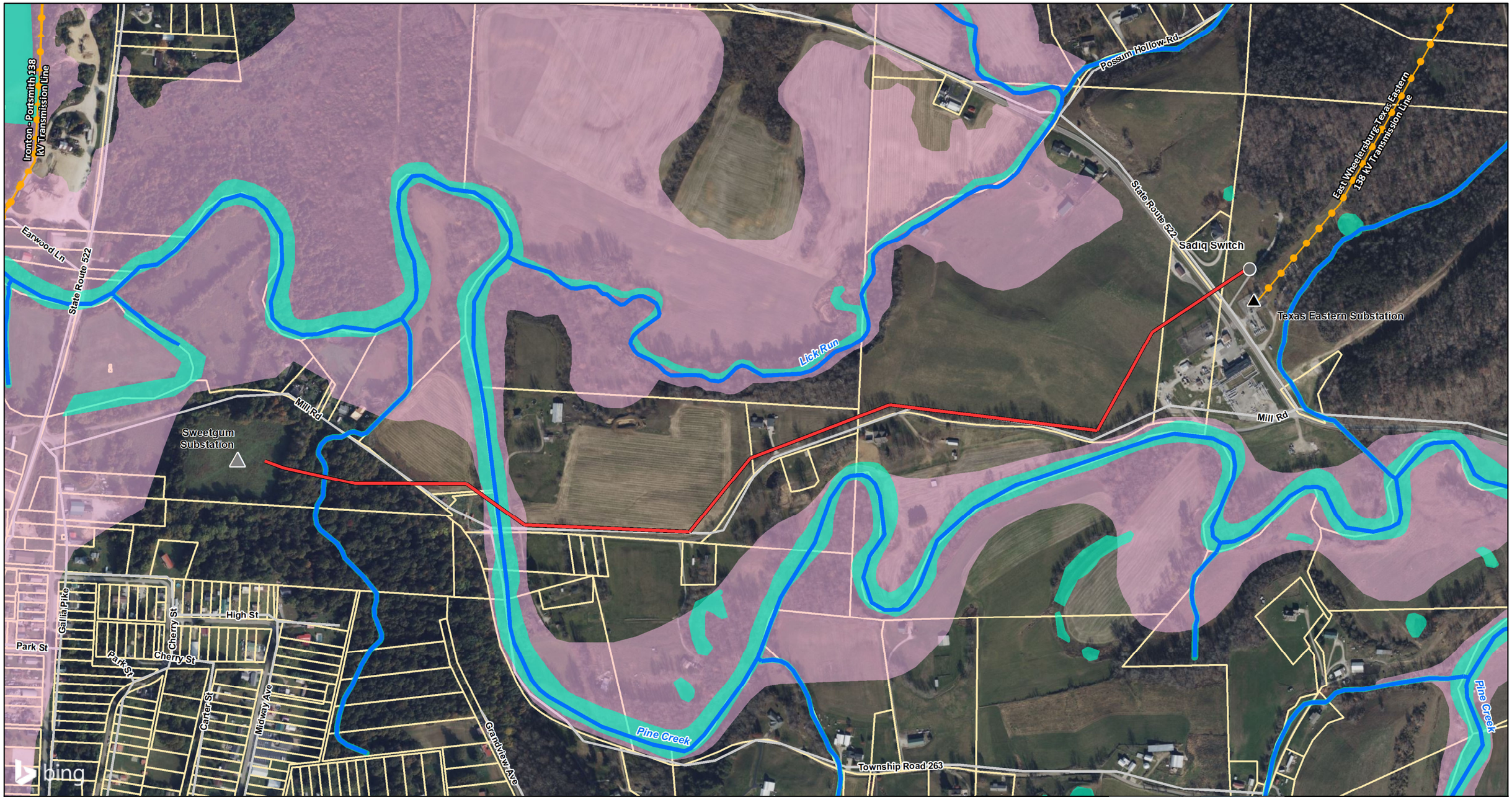
January 21, 2025

Exhibit 1
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY
An AEP Company
BOUNDLESS ENERGY

Sadiq Switch - Sweetgum
138-kV Transmission Line Project
Scioto County, OH

0 1,000 2,000
Feet



- Proposed Switch
- Non-OPSB Jurisdictional Substation
- Existing Substation
- Proposed Sadiq Switch - Sweetgum 138-kV Transmission Line
- Existing 69-kV Transmission Line
- Roadway
- NWI Wetland
- 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: 1:6,000

July 12, 2023

Exhibit 2
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY
An AEP Company
BOUNDLESS ENERGY

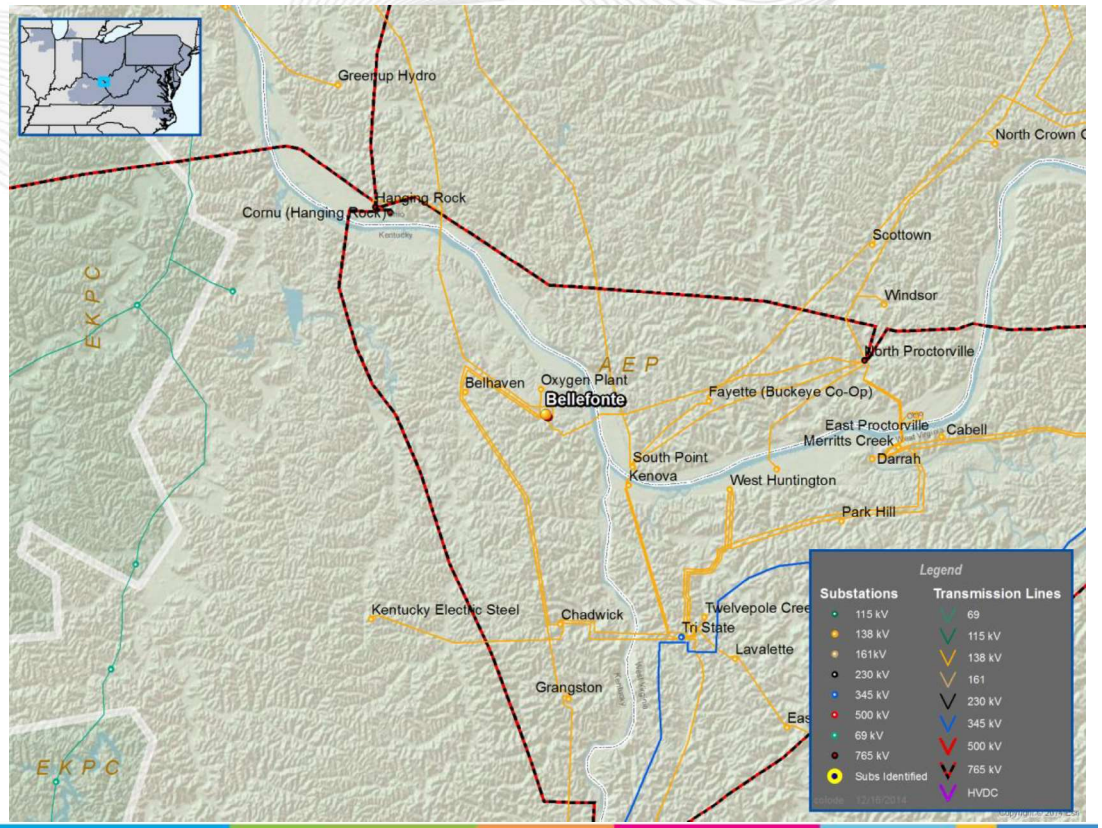
Sadiq Switch - Sweetgum
138-kV Transmission Line Project
Scioto County, OH

0 400 800
Feet

Appendix B Long Term Forecast Report and PJM 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

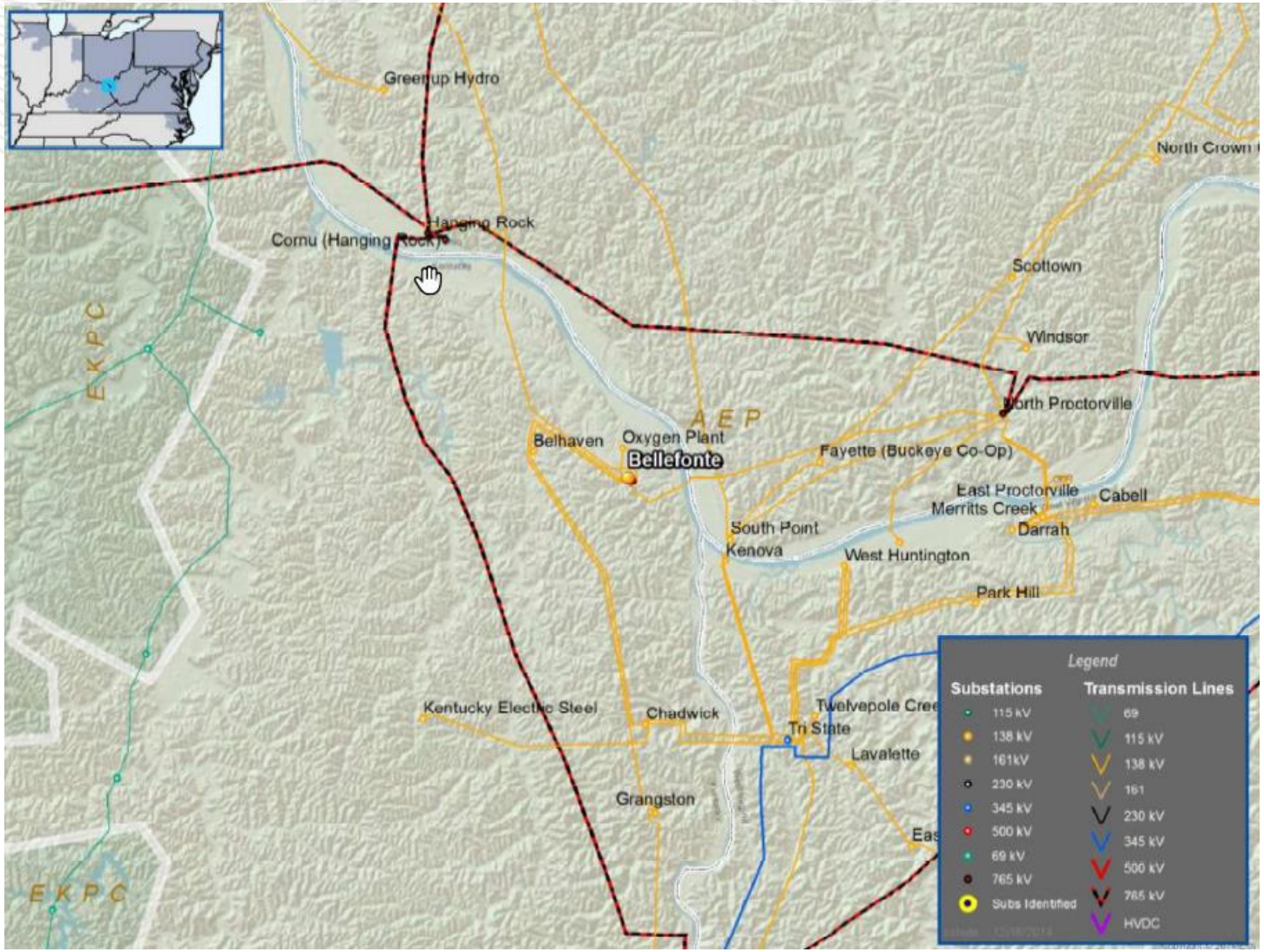
Model Used for Analysis: 2014 RTEP

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%)

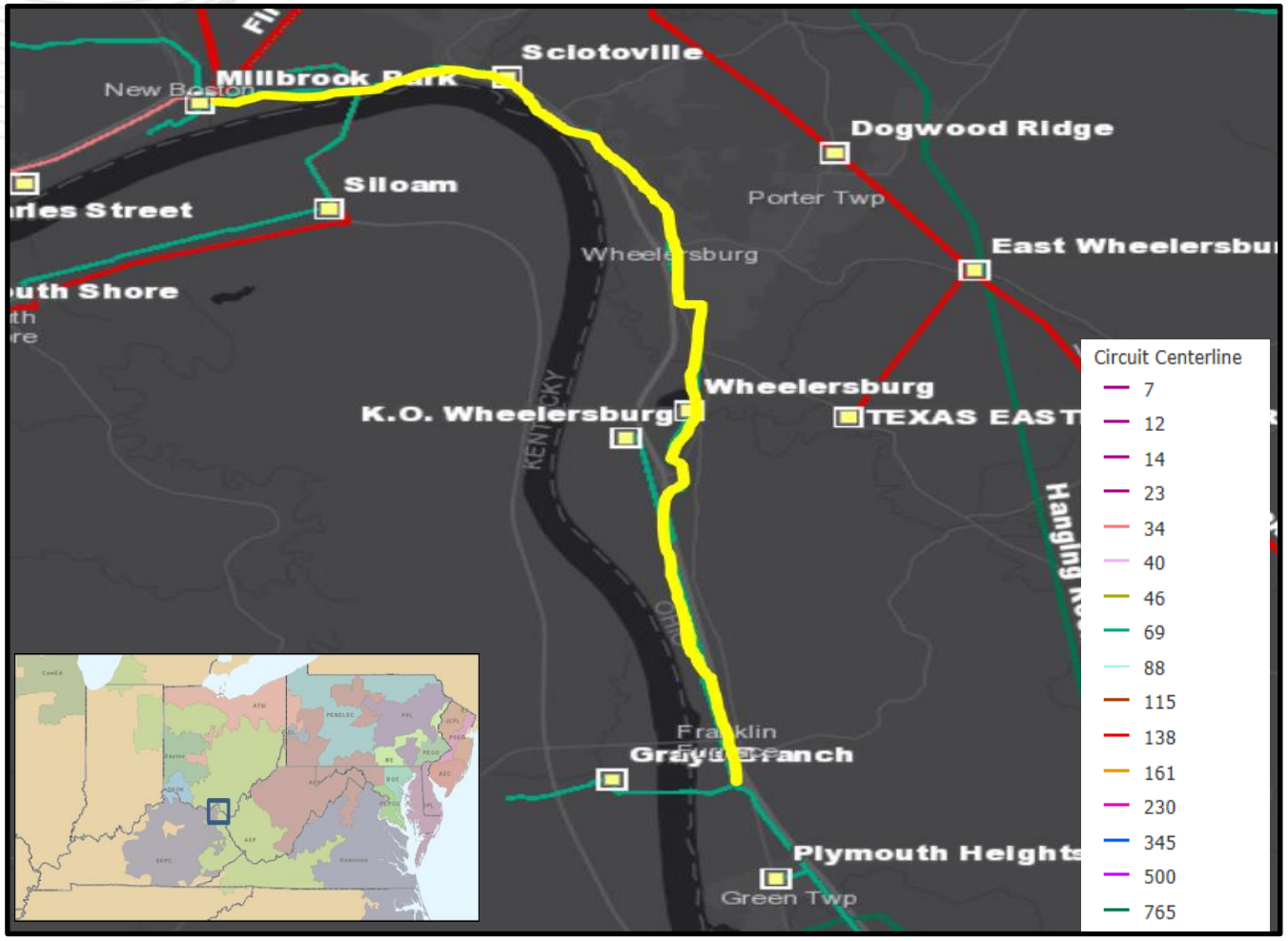


Original Proposed Solution: B2604

- 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~~

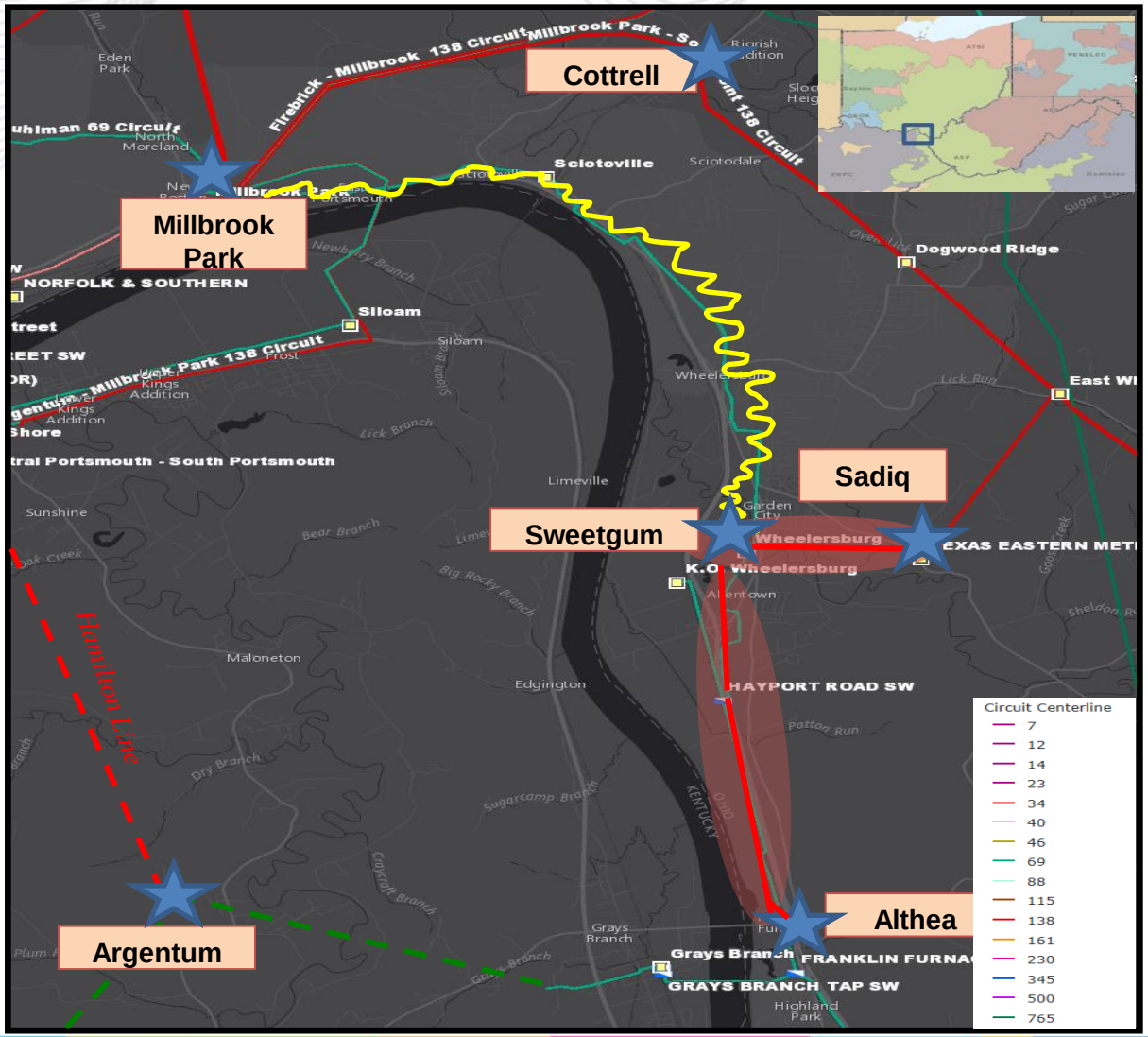
Total Estimated Transmission Cost: $~~31.65M~~ $3M

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.



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**

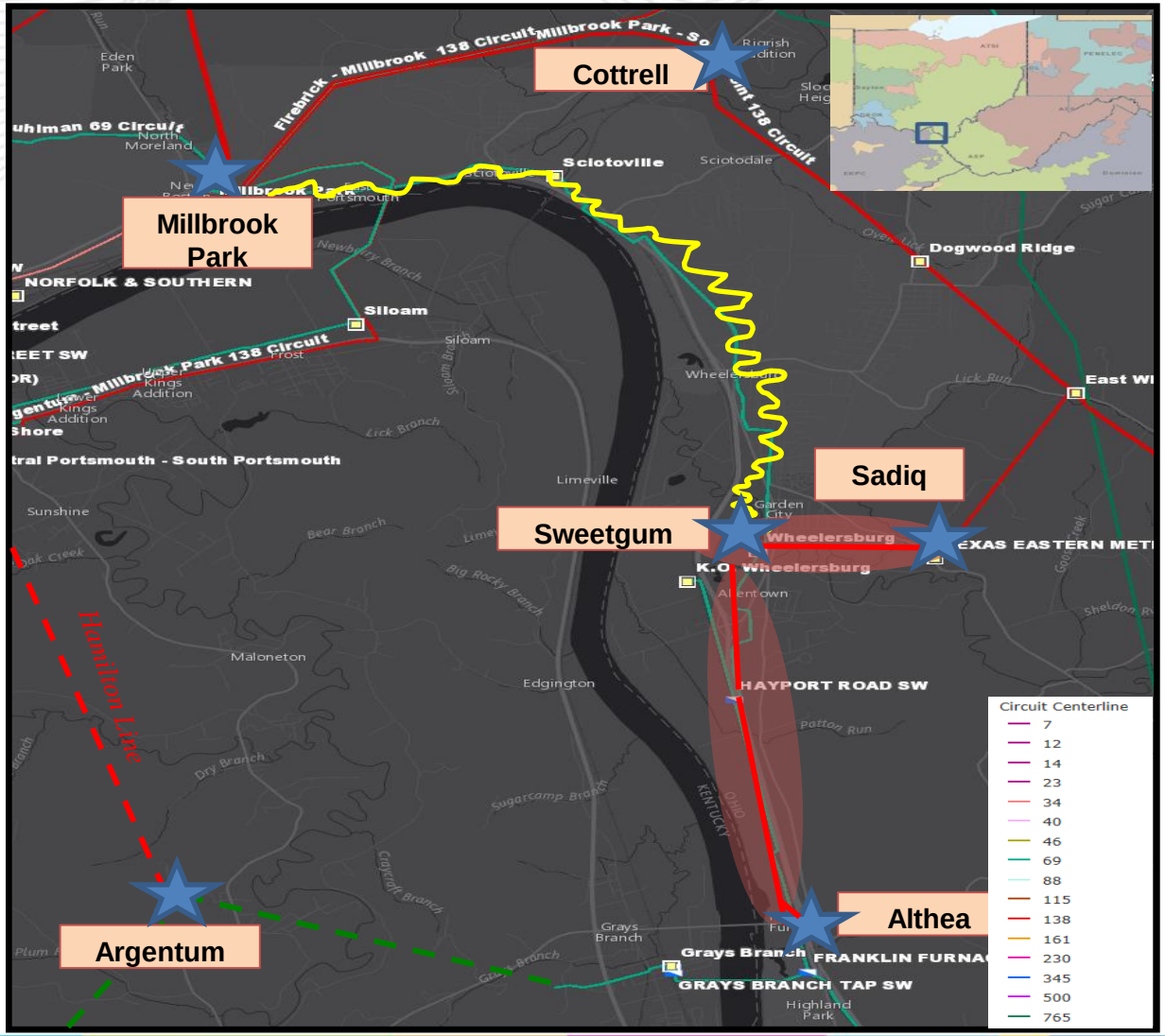


Proposed Solution Continued:

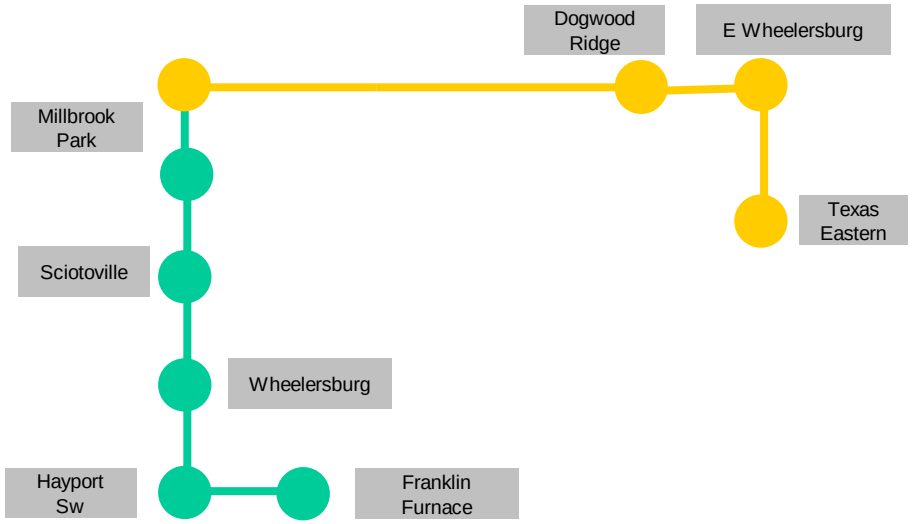
- Rebuild ~2.3 miles along existing ROW from Sweetgum to the Hayport Rd switch location as 138kV single circuit and rebuild ~2.0 miles from the Hayport Road switch to Althea with double circuit 138kV construction, one side operated at 69 kV to continue service to K.O. Wheelersburg, using 795 ACSR 26/7 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

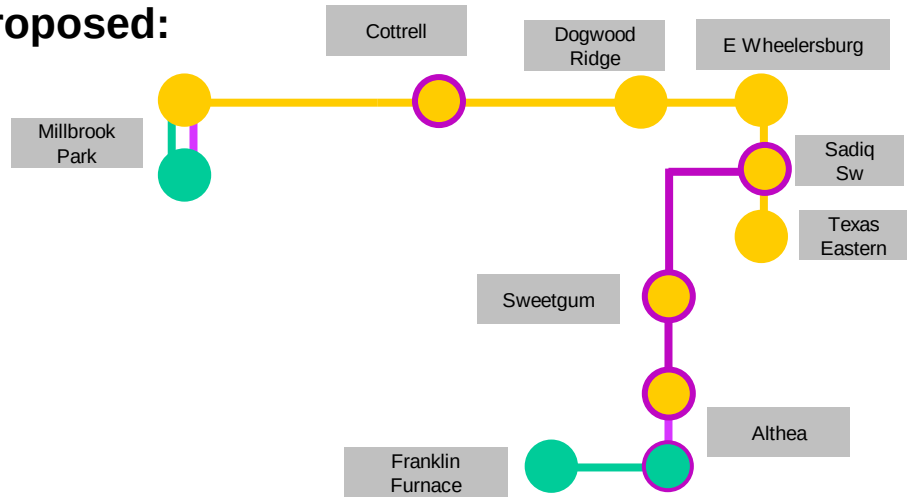
Ancillary Benefits: The new proposal also addresses needs identified under AEP-2018-OH030, including Sciotoville station, Wheelersburg station, and the three terminal 69 kV line. Constructing 1.4 miles of new 138 kV line allows for the retirement of over 11 miles of deteriorating 69 kV line. Sweetgum 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:

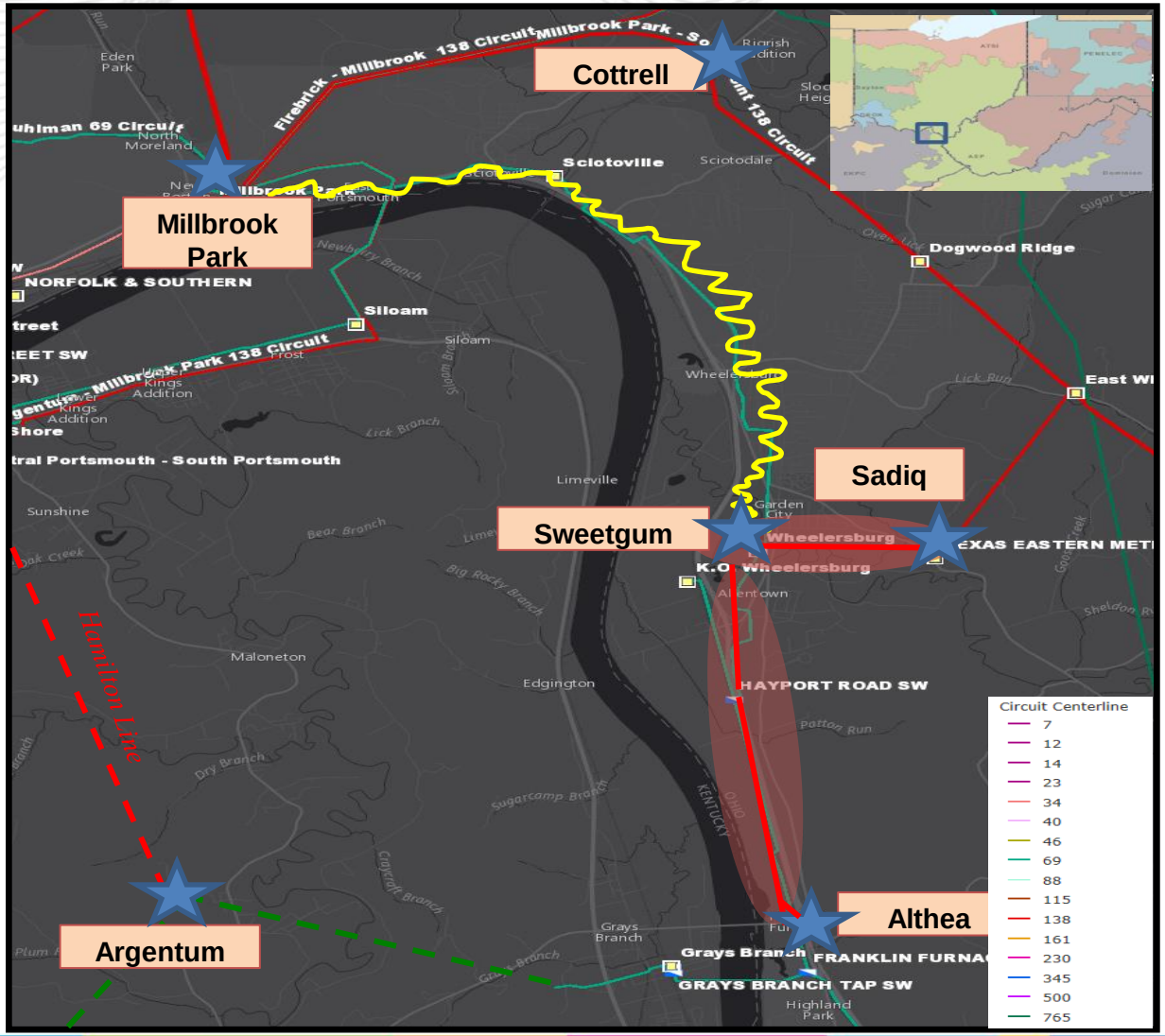


Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

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



PUCO FORM FE-T9
AEP OHIO TRANSMISSION COMPANY
Specifications of Planned Transmission Lines

1.	LINE NAME AND NUMBER:	Sadiq SW - Sweetgum (s2464 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 (s2464 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

Appendix C Easement Form

Line Name:
Line No.:
Easement No.:

EASEMENT AND RIGHT OF WAY

On this _____ day of _____, 202__, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the covenants hereinafter set forth, __[landowner name and marital status]__, whose address is _____ ("Grantor"), whether one or more persons, hereby grants, sells, conveys, and warrants to AEP Ohio Transmission Company, Inc., an Ohio corporation, a unit of American Electric Power, whose principal business address is 1 Riverside Plaza, Columbus, Ohio 43215 ("AEP"), and its successors and affiliates, a permanent easement and right of way ("Easement") for a single electric transmission line, not to exceed 345 kV, and for internal communication purposes related to the supply of electricity (the "Transmission Line"), being, in, on, over, under, through and across the following described lands of Grantor, situated in the State of Ohio, County of _____, and Township of _____ and being a part of ___[abbreviated legal description]____ ("Grantor's Property").

Contingent provision: [Spouse of Grantor, if any] join herein for the purpose of releasing all dower rights in regard to the Easement.

Grantor claims title by ___[name of vesting instrument]___ dated _____ from ___[name of first grantor]___, recorded on _____ at ___[record volume, page]___ in the _____ County Recorder's Office.

Auditor/Key/Tax Number: ____[Tax Parcel Number]____

The Easement Area is more fully described and depicted on Exhibit "A", a copy of which is attached hereto and made a part hereof ("Easement Area").

GRANTOR FURTHER GRANTS AEP THE FOLLOWING RIGHTS:

The right, now or in the future, to construct, reconstruct, operate, maintain, alter, improve, inspect, patrol, protect, repair, remove, replace, upgrade and relocate within the Easement Area, structures and appurtenant equipment necessary for the Transmission Line.

The right, in AEP's discretion, now or in the future, to cut down, trim or remove, and otherwise control, any and all trees, overhanging branches, vegetation or brush situated within the Easement Area and any temporary access roads or temporary workspaces identified on Exhibit "A" outside the Easement Area. Provided, however, that AEP shall not use herbicides or similar products for these purposes on any portions of the Grantor's Property maintained for residential or agricultural use. AEP shall also have the right to cut down, trim or remove trees situated on Grantor's Property which adjoin the Easement Area within the Tree Protection Zone when in the reasonable opinion of AEP those trees are dead, dying, diseased, leaning, or structurally defective and may endanger

the safety of, or interfere with the construction, operation or maintenance of AEP's facilities or ingress or egress to, from or along the Easement Area. The Tree Protection Zone extends eighty feet on all sides of the Easement Area depicted in Exhibit A.

AEP shall also have the right of reasonable ingress and egress over, across and upon the Easement Area only, unless additional access routes are depicted in the attached Exhibit A. Provided, however, that in the event access over, across and upon the Easement Area – and access routes, if any, shown in Exhibit A – shall become blocked or otherwise rendered unsafe or hazardous for use, AEP may temporarily access the Easement Area from other points across Grantor's Property, so long as that access is both reasonable and limited to the duration of the interference or safety hazard. AEP shall return the access area to its preexisting condition or pay damages to Grantor.

AEP shall also have the right to use temporary workspaces and temporary access roads outside the Easement Area, if any are shown on Exhibit A, in connection with its initial construction of the Transmission Line. AEP may shift the location of such temporary workspaces, if any, up to twenty (20) feet in any direction, and also shift the location of such temporary access roads, if any, up to twenty (20) feet in any direction, as field conditions or other requirements dictate. Upon completion of the overall Transmission Line project, but in no event later than two (2) years following the start of construction on Grantor's Property, AEP shall remove its equipment from all such temporary workspaces and temporary access roads outside the Easement Area, and AEP's temporary rights outside of the Easement Area shall automatically cease, terminate and revert to Grantor. AEP shall return any such areas to their preexisting condition or pay damages to Grantor as soon as practicable.

THIS GRANT IS SUBJECT TO THE FOLLOWING CONDITIONS:

Grantor reserves the right to cultivate annual crops, pasture, construct fences (provided gates are installed that adequately provide AEP the access rights conveyed herein) and roads or otherwise use Grantor's Property encumbered by this Easement in any way not inconsistent with the rights herein granted. In no event, however, shall Grantor, its heirs, successors, affiliates and assigns plant or cultivate any trees or place, construct, install, erect or permit any temporary or permanent building, structure, improvement or obstruction including but not limited to, storage tanks, billboards, signs, sheds, dumpsters, light poles, water impoundments, above ground irrigation systems, swimming pools or wells, or permit any alteration of the ground elevation, over, or within the Easement Area. AEP may, at Grantor's cost, remove any structure or obstruction if placed within the Easement Area, and may re-grade any alterations of the ground elevation within the Easement Area.

AEP agrees to repair or pay Grantor for actual damages sustained by Grantor to crops, fences, gates, irrigation and drainage systems, drives, or lawns that are permitted herein, when such damages arise out of AEP's exercise of the rights herein granted.

Pursuant to R.C. 163.02, Grantor possesses a right of repurchase pursuant to R.C. 163.211 if AEP decides not to use Grantor's Property for the purpose stated in the appropriation petition and Grantor provides timely notice of a desire to repurchase.

This instrument contains the complete agreement, expressed or implied between the parties herein and shall inure to the benefit of and be binding on their respective successors, affiliates, heirs, executors, and administrators.

This Easement may be executed in counterparts, each of which shall be deemed an original, but all of which, taken together, shall constitute one and the same instrument.

Any remaining space on this page left intentionally blank. See next page(s) for signature(s).

IN WITNESS WHEREOF, said Grantor hereunto set their hand(s) and seal(s) as of the last date set forth below.

GRANTOR

SIGNATURE BLOCK FOR A BUSINESS ENTITY / TRUST:

[name of entity/trust & kind of business association identified]

By:_____
Print name:_____
Its Authorized Signer

State of Ohio §
§ SS:
County of _____ §

This instrument was acknowledged before me on this _____ day of _____, 202__ by _____, the _____[title]_____ of ___[name of entity/trust]___, a/an ___[state of incorporation and type of entity/trust]____, on behalf of ___[name of entity/trust]___.

_____
Notary

SIGNATURE BLOCK FOR AN INDIVIDUAL:

_____
____[Typed name of individual]____

State of Ohio §
§ SS:
County of _____ §

This instrument was acknowledged before me on this _____ day of _____, 202__ by ___[name of individual]____.

_____
Notary

This instrument prepared by Marland Turner, American Electric Power Service Corporation, 1 Riverside Plaza, Columbus, OH 43215 for and on behalf of AEP Ohio Transmission Company, Inc., a unit of American Electric Power.

When recorded return to: American Electric Power – Transmission Right of Way, 8600 Smith's Mill Road, New Albany, OH 43054.

Appendix D Agency Coordination Letters

In reply, refer to
2022-SCI-55857

October 14, 2022

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

RE: Sadiq Switch-Sweetgum 138kV Transmission Line and Sadiq Switch Greenfield Project, Porter Township, Scioto County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received September 8, 2022 and September 15, 2022 regarding the proposed Sadiq Switch-Sweetgum 138kV Transmission Line and Sadiq Switch Greenfield 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 Archaeological Survey for the 2.4 km (1.4 mi) Sadiq Switch-Sweetgum 138kV Transmission Line and Sadiq Switch Greenfield Projects in Porter Township, Scioto County, Ohio* by Ryan J. Weller (Weller & Associates, Inc. 2022).

A literature review, visual inspection, surface collection, shovel probe and shovel test unit excavation was completed as part of the investigations. One (1) previously identified archaeological sites is located within the project area, Ohio Archaeological Inventory (OAI) #33SC0692. The site was previously determined not eligible for listing in the National Register of Historic Places (NRHP). One (1) new archaeological site was identified during survey, OAI#33SC0696. The site is recommended not eligible for listing in the NRHP. Our office agrees with this recommendation and no additional archaeological survey is needed.

Montgomery Cemetery (OGSID 10958) is located immediately adjacent to the project area, according to SHPO's online GIS website. Weller & Associates, Inc. was unable to identify the cemetery during fieldwork. Our office was able to confirm the likely location of the cemetery through a local historian. Montgomery Cemetery is likely located south of Mill Road, on the eastern bank of Pine Creek. With this updated location, the project as proposed will not affect Montgomery Cemetery.

The following comments pertain to the *History/Architecture Investigations for the 2.4 km (1.4 mi) Sadiq Switch-Sweetgum 138kV Transmission Line and Sadiq Switch Greenfield Projects in Porter Township, Scioto County, Ohio* by Scott McIntosh (Weller & Associates, Inc. 2022).

A literature review and field survey were completed as part of the investigations. A total of six (6) 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 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: 1094927, 1095033

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: 21-1131; AEP Sadiq Switch and Sadiq Switch - Sweetgum 138 kV Line Projects

Project: The proposed project involves a new 3-way switch structure with permanent access road and 100' x 100' gravel pad as well as a new greenfield route that is approximately 1.5 miles in length.

Location: The proposed project is located in Porter Township, 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:

Eastern Spadefoot (*Scaphiopus holbrookii*), E

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 $\geq$ 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*)
fanshell (*Cyprogenia stegaria*)
northern riffleshell (*Epioblasma torulosa rangiana*)
pink mucket (*Lampsilis orbiculata*)
purple cat's paw (*Epioblasma o. obliquata*)
rayed bean (*Villosa fabalis*)
sheepnose (*Plethobasus cyphyus*)
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*)

This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: https://ohiodnr.gov/static/documents/wildlife/permits/dow-protocol-ohio-mussel-survey.pdf

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*)
northern madtom (*Noturus stigmosus*)
popeye shiner (*Notropis ariommus*)
shoal chub (*Macrhybopsis hyostoma*)
shortnose gar (*Lepisosteus platostomus*)
shovelnose sturgeon (*Scaphirhynchus-platorynchus*)

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. The DOW recommends that an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the project area. If suitable habitat is determined to be present; the DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. Due to the location, 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: Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Projects, Scioto County, Ohio
Date: Monday, December 20, 2021 11:12:01 AM
Attachments: image.png
image.png

TAILS# 03E15000-2022-TA-0499

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

Jonathon V Rose

From: Kearns, Michelle <Michelle.Kearns@stantec.com>
Sent: Monday, January 13, 2025 11:44 AM
To: Jonathon V Rose
Cc: Jeffrey Davis
Subject: [EXTERNAL] FW: ODNR Project No. 21-1128 Althea-Sweetgum 138 kV Transmission Line Project in Scioto Co.

Jonathon,

The avoidance/minimization plan was included in the Althea – Sweetgum project. Below is the email from ODNR.

Thanks,

Michelle

Direct: 614-643-4412
Mobile: 614-256-3462

From: Matthew.Stooksbury@dnr.ohio.gov <Matthew.Stooksbury@dnr.ohio.gov>
Sent: Wednesday, October 23, 2024 9:14 AM
To: Kearns, Michelle <Michelle.Kearns@stantec.com>
Cc: Jeffrey Davis <ohiofrogs@gmail.com>
Subject: ODNR Project No. 21-1128 Althea-Sweetgum 138 kV Transmission Line Project in Scioto Co.

Hello Michelle,

The DOW also concurs that the Avoidance/Minimization Plan outlined by Mr. Davis is sufficient in minimizing impacts to the Eastern Spadefoot for the ODNR Project No. 21-1128 Althea-Sweetgum 138 kV Transmission Line Project in Scioto Co.. Please continue to coordinate with Mr. Davis to implement the plan. If there are any questions, please let me know.

-Matt

Matt Stooksbury
Compliance Coordinator
2045 Morse Rd G-2
Columbus, OH 43229
Email: matthew.stooksbury@dnr.ohio.gov

Support Ohio's wildlife. Buy a license or stamp at wildohio.gov.

Appendix E Wetland Delineation Report

Sadiq Switch and Sadiq Switch – Sweetgum 138kV Line Project, Scioto County, Ohio

Ecological Survey 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

October 11, 2022

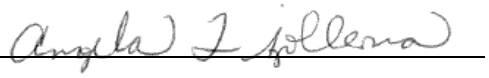
Sign-off Sheet

This document entitled Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Project Ecological Survey Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of AEP Ohio Transmission Company, Inc. (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 

(signature)

Charlie Allen

Reviewed by 

(signature)

Angela Sjollema

Reviewed by 

(signature)

Michelle Kearns

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LIST OF APPENDICES

1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing to construct a new 3-way switch structure with associated access road and gravel pad (Sadiq Switch) and a greenfield 138 kV (kilovolt) line extending approximately 1.5 miles connecting the new Sadiq Switch to Sweetgum Station (Sadiq Switch – Sweetgum 138 kV Line) (the Project) located east of Allentown, Scioto County, Ohio (Figure 1, Appendix B). A 100-foot wide corridor, totaling approximately 15 acres (the Project area), was surveyed for the proposed 138 kV line and switch structure 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 August 30-31, and September 13, 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 Federal Register/Vol. 67, No. 10 (USACE 2002) and determined as potential Waters of the U.S. (WOTUS) in reference to the current guidance per interpretation of WOTUS that is consistent with the pre-2015 regulatory regime (40 CFR 230.3(s)) (USEPA 2022). 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 August 30-31, and September 13, 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 Sadiq Switch and Sadiq Switch-Sweetgum 138 kV Line Project, 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
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 American sycamore (*Platanus occidentalis*), honey locust (*Gleditsia triacanthos*), black walnut (*Juglans nigra*), American elm (*Ulmus americana*), box elder (*Acer negundo*) in the overstory and Japanese knotweed (*Reynoutria japonica*) and fall sneezeweed (*Helenium autumnale*) in the understory/herbaceous.	No	3.71
Pasture	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species included Kentucky bluegrass (*Poa pratensis*), and red fescue (*Festuca rubra*).	No	3.13
Agricultural Field	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Dominated by planted corn (*Zea mays*).	No	2.97
Maintained Lawn	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant	No	2.47

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
	species included orchard grass (*Dactylis glomerata*), yellow nutsedge (*Cyperus rotundus*), red fescue, Kentucky bluegrass, common dandelion (*Taraxacum officinale*), and common selfheal (*Prunella vulgaris*).		
Old Field	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant species included daisy fleabane (*Erigeron annuus*), Canadian goldenrod (*Solidago canadensis*), giant ironweed (*Vernonia gigantea*), annual ragweed (*Ambrosia artemisiifolia*), Kentucky bluegrass, common dandelion, and Johnson grass (*Sorghum halepense*).	No	1.90
Maintained ROW	Moderate to Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders, planted non-native species, and native highly tolerant taxa). Dominant plant species included annual ragweed, Kentucky bluegrass, and red fescue.	No	0.32
Existing Roadway	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	0.72
Industrial Land	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa).	No	0.10
		TOTAL	**15.32**

3.2 WETLANDS

No wetlands were delineated within the Project area during the field surveys on August 30-31, and September 13, 2022. The Project area contains two NWI features. Table 2 lists the NWI features

found within the Project area. None of the NWI features were identified as wetlands. A wetland determination sample point, included in Appendix C, was collected within the Project area as a base representation.

3.3 STREAMS

Two streams were delineated within the Project area during the field surveys on August 30-31, and September 13, 2022. The Project area contains one mapped National Hydrography Data (NHD) feature, Pine Creek. Figure 2 (Appendix B) shows the location of the streams identified within the Project area. Representative stream photographs are included in Appendix D-1 of this report (photo locations are shown on Figure 2, Appendix B). The completed stream forms (HHEI and QHEI) are included in Appendix C. Information regarding the stream resources within the Project area and proposed impacts are summarized in Table 3 below and in Appendix A.

3.4 OPEN WATERS

No open waters (i.e., ponds, lakes) were delineated within the Project area during the field surveys completed on August 30-31, and September 13, 2022.

Table 2. Summary of NWI Disposition within the Sadiq Switch and Sadiq Switch-Sweetgum 138 kV Line Project, Scioto County, Ohio

NWI Code	NWI Description	Figure 2 Page Number	Related Field Inventoried Resource	Comments
R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded	3	Stream 1, Pine Creek	Delineated as a perennial stream, Stream 1, Pine Creek.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	3	Stream 2	Delineated as an intermittent stream, Stream 2.

Table 3. Summary of Stream Resources Found within the Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Project, Scioto County, Ohio

Stream ID	Location			Stream Type[2]	Stream Name[3]	Delineated Length (feet)	Bankful width (feet)	OHWM width[4] (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing	Proposed Impacts	
	Latitude	Longitude	Photo Location[1]						Method[5]	Score	Category/ Rating/ OAC Designation[6]			Fill type	Length LF
Stream 1, Pine Creek	38.69807	-82.84701	1	Perennial	Pine Creek	146	40	40	QHEI	78.5	Excellent	Ineligible	TBD	TBD	TBD
Stream 2	38.69848	-82.85039	3	Intermittent	UNT to Pine Creek	103	5	2.5	HHEI	46	Class II PHW	Ineligible	TBD	TBD	TBD
Total Delineated Length Within Project Area						**249**						**Total Proposed Impacts**			**TBD**

[1] Appendix B – Figure 2 and Appendix D – Photo log D-1
[2] Stream Classification is based on the 22250 federal Register/Vol. 85, No. 10 (USACE 2002)
[3] UNT = Un-named tributary
[4] OHWM = Ordinary High Water Mark
[5] HHEI = Headwater Habitat Evaluation Index; QHEI = Qualitative Habitat Evaluation Index
[6] PHW = Primary Headwater

3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 4. Summary of Potential Federal and Ohio State-Listed Species within the Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Project, Scioto County, Ohio

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix E)	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 2022b). 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 forging habitat (second growth deciduous forest) was observed within the Project area.	**ODNR** - This Project lies within the range of the Indiana bat. Therefore, ODNR DOW recommends that habitat be conserved wherever possible. If suitable habitat occurs within the Project area and trees need to be cut, the ODNR DOW recommends cutting 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. Seasonal clearing is recommended to avoid adverse effects to Indiana bats.	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 (PE)	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 2022a). 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 forging habitat (second growth 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 habitat be conserved wherever possible. If suitable habitat occurs within the Project area and trees need to be cut, the ODNR DOW recommends cutting 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. Seasonal tree clearing is recommended to avoid adverse effects to the northern long-eared bat. 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 E)	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 forging habitat (second growth 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 habitat be conserved wherever possible. If suitable habitat occurs within the Project area and trees need to be cut, the ODNR DOW recommends cutting 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** - 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	PE	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 forging habitat (second growth deciduous forest) was observed within the Project area.	**ODNR** - This Project lies within the range of the tricolored bat. Therefore, ODNR DOW recommends that habitat be conserved wherever possible. If suitable habitat occurs within the Project area and trees need to be cut, the ODNR DOW recommends cutting 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** - 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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix E)	Potential Impacts and Avoidance Dates
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. Preferred habitat is swiftly moving water. The high oxygen concentrations in swift streams may be necessary for survival. It is a species of riffle areas of smaller streams, and as such has faired better than larger river species (NatureServe 2022).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
Pink Mucket/ *Lampsilis orbiculata*	E	E	Found in waters with strong currents, rocky or boulder substrates, with depths up to about one meter, but is also found in deeper waters with slower currents and sand and gravel substrates (NatureServe 2022).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
Rayed Bean/ *Villosa fabalis*	E	E	Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, which increase substrate stability (NatureServe 2022, Parmalee and Bogan 1998). 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 (Parmalee and Bogan 1998).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** – Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
Butterfly/ *Ellipsaria lineolata*	E	N/A	This mussel prefers stable substrate containing rock, gravel and sand in swift currents of large rivers (NatureServe 2022).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** – The Project is within the range of this species. ODNR DOW state that the Project must not have an impact on freshwater native mussels. Therefore, if in-water work is planned in any Group 1, 2, 3, 4 or streams with a watershed ≥ 5 square miles, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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)	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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 occur in waters with high turbidity and dissolved solids (NatureServe 2022).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

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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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix E)	Potential Impacts and Avoidance Dates
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 meters; 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 Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	No suitable habitat was observed within the Project area. Therefore, no impacts to this species are anticipated.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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).	Potentially suitable habitat (Stream 1, Pine Creek) was observed within the Project area.	**ODNR** - The Project is within the range of this species. DOW recommends no in-water work in perennial streams from March 15 – June 30 to reduce impacts to this species and their habitat. If no in-water work is proposed in a perennial stream, the Project is not likely to impact this species. **USFWS** - No comments received.	Potentially suitable habitat was observed within the Project area. However, it is anticipated that no in-water work in a perennial stream is proposed by AEP. Therefore, impacts to this species are not anticipated. If any work is proposed within a perennial stream, AEP will proceed in accordance with agency requirements.
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 –** The Project is within the range of the eastern hellbender. 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 to this species 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** - The Project is within range of the timber rattlesnake. 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 to this species 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** – The Natural Heritage Database has a record of this species at or within a one-mile radius of the Project area. The DOW recommends that an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the Project area. If suitable habitat is determined to be present; the DOW recommends that a presence/absence survey be conducted.	The DOW recommends an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the Project area. If suitable habitat is determined to be present, the DOW recommends that a presence/absence survey be conducted.

Common/Scientific Names	*State Listed Status	*Federally Listed Status	Typical Habitat	Habitat Observed	Agency Comment** (Appendix E)	Potential Impacts and Avoidance Dates
					USFWS - No comments received.	
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 -** The Project is within range of the green salamander. 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 to this species are anticipated.
Midland Mud Salamander/*Pseudotriton montanus diastictus*	T	N/A	Muddy springs, slow floodplain streams, and swamps along slow streams; backwater ponds and marshes created by beaver activity (NatureServe 2022).	No suitable habitat was observed within the Project area.	**ODNR** - The Project is within the range of the midland mud salamander. 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 to this species are anticipated.
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** - The Project is within the range of the Allegheny woodrat. 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 to this species are anticipated.

*Status key: E=Endangered; PE=Proposed 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 August 30-31, and September 13, 2022. During the field surveys, two streams totaling approximately 249 linear feet consisting of one intermittent stream, approximately 103 linear feet, and one perennial stream, Pine Creek a USGS-named stream, approximately 146 linear feet, were delineated within the Project area. No wetlands 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 were 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. 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. The desktop assessment (Appendix B – Figure 4) did not identify any abandoned underground mines, active mines or karst features within 0.25 miles of the Project area and no potential hibernacula were observed during field surveys (ODNR Division of Geological Survey 2022a, ODNR Division of Mineral Resources and Geological Survey 2022b). However, potentially suitable summer foraging and roosting habitat was observed in the Project area. AEP will determine if any summer tree clearing is necessary in areas containing suitable 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, snuffbox; state-listed endangered butterfly, ebonyshell, elephant-ear, little spectaclecase, long-solid, monkeyface, Ohio pigtoe, pyramid pigtoe, sharp-ridged pocketbook, wartyback, washboard, yellow sandshell; and the state-listed threatened black sandshell, fawnsfoot, and threehorn wartyback. The DOW stated that the Project must not have an impact on freshwater native mussels at the Project site. The DOW recommends, if in-water work is planned in a Group 1, 2, 3, 4 stream or a stream with a drainage area ≥ 5 square miles, the applicant should provide information to indicate no mussel impacts will occur. Potentially suitable habitat, Pine Creek (Stream 1), for several state and/or federal mussel species occurs within the Project area. However, AEP anticipates that no in-water work will occur in a perennial stream. Therefore,

impacts to these species are not anticipated. If AEP plans to impact a perennial stream as part of this Project, they will proceed in accordance with ODNR DOW recommendations.

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, northern madtom, popeye shiner, shoal chub, shortnose gar, and shovelnose sturgeon; the state-listed threatened American eel, blue sucker, channel darter, paddlefish, river darter and Tippecanoe darter. The ODNR DOW recommends no in-water work in perennial streams from March 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. However, if no in-water work is proposed in a perennial stream, this Project is not likely to impact these species. Potentially suitable habitat, Pine Creek (Stream 1), for several of the state-listed fish species is present within the Project area. AEP anticipates that no in-water work in a perennial stream will occur for the Project. Therefore, impacts to these species are not anticipated. If AEP plans to impact a perennial stream as part of this Project, they will proceed in accordance with ODNR recommendations.

According to the ODNR response letter, the Project is within the range of the eastern hellbender, a state-listed endangered species and federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. 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 timber rattlesnake, a state-listed endangered species and federal species of concern. Timber rattlesnakes utilize wooded areas for foraging and deep rock crevices as den sites for overwintering. 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. Additionally, the Natural Heritage Database has records of eastern spadefoot either within the Project or within a one-mile radius of the Project area. Breeding habitats may include flooded agricultural fields or other water holding depressions. The DOW recommends that an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the Project area. If suitable habitat is determined to be present, DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The Project is also within 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. 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 Project is also within the range of the state-listed endangered Allegheny woodrat. The Allegheny woodrat utilizes rocky outcrops such as cliffs and caves in forested areas. 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.

A technical assistance request letter was also submitted to the USFWS on December 15, 2021. The 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 is within the range of the Indiana bat and the northern long-eared bat. Therefore, USFWS recommends avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with the Ohio Ecological Service 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, USFWS recommends removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. If implementation of this seasonal clearing recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. No potential hibernacula were observed within the Project area, however, potentially suitable summer foraging and roosting habitat in the form of second growth deciduous forest, was observed within the Project area. AEP will determine if any tree clearing is necessary in areas containing suitable 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 E).

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Appendix A IMPACT TABLES

Summary of NWI Disposition within the Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Project, Scioto County, Ohio

NWI Code	NWI Description	Figure 2 Page Number	Related Field Inventoried Resource	Comments
R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded	3	Stream 1, Pine Creek	Delineated as a perennial stream, Stream 1, Pine Creek.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	3	Stream 2	Delineated as an intermittent stream, Stream 2.

Summary of Stream Resources Found within the Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Project, Summit County, Ohio

Stream ID	Location			Stream Type[2]	Stream Name[3]	Delineated Length (feet)	Bankful width (feet)	OHWM width[4] (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing	Proposed Impacts	
	Latitude	Longitude	Photo Location[1]						Method[5]	Score	Category/ Rating/ OAC Designation[6]			Fill type	Length LF
Stream 1, Pine Creek	38.69807	-82.84701	1	Perennial	Pine Creek	146	40	40	QHEI	78.5	Excellent	Ineligible	TBD	TBD	TBD
Stream 2	38.69848	-82.85039	3	Intermittent	UNT to Pine Creek	103	5	2.5	HHEI	46	Class II PHW	Ineligible	TBD	TBD	TBD
Total Delineated Length Within Project Area						**249**						**Total Proposed Impacts**			**TBD**

[1] Appendix B – Figure 2 and Appendix D – Photo log D-1
[2] Stream Classification is based on the 22250 federal Register/Vol. 85, No. 10 (USACE 2002)
[3] UNT = Un-named tributary
[4] OHWM = Ordinary High Water Mark
[5] HHEI = Headwater Habitat Evaluation Index; QHEI = Qualitative Habitat Evaluation Index
[6] PHW = Primary Headwater

Appendix B FIGURES

B.1 PROJECT LOCATION MAP

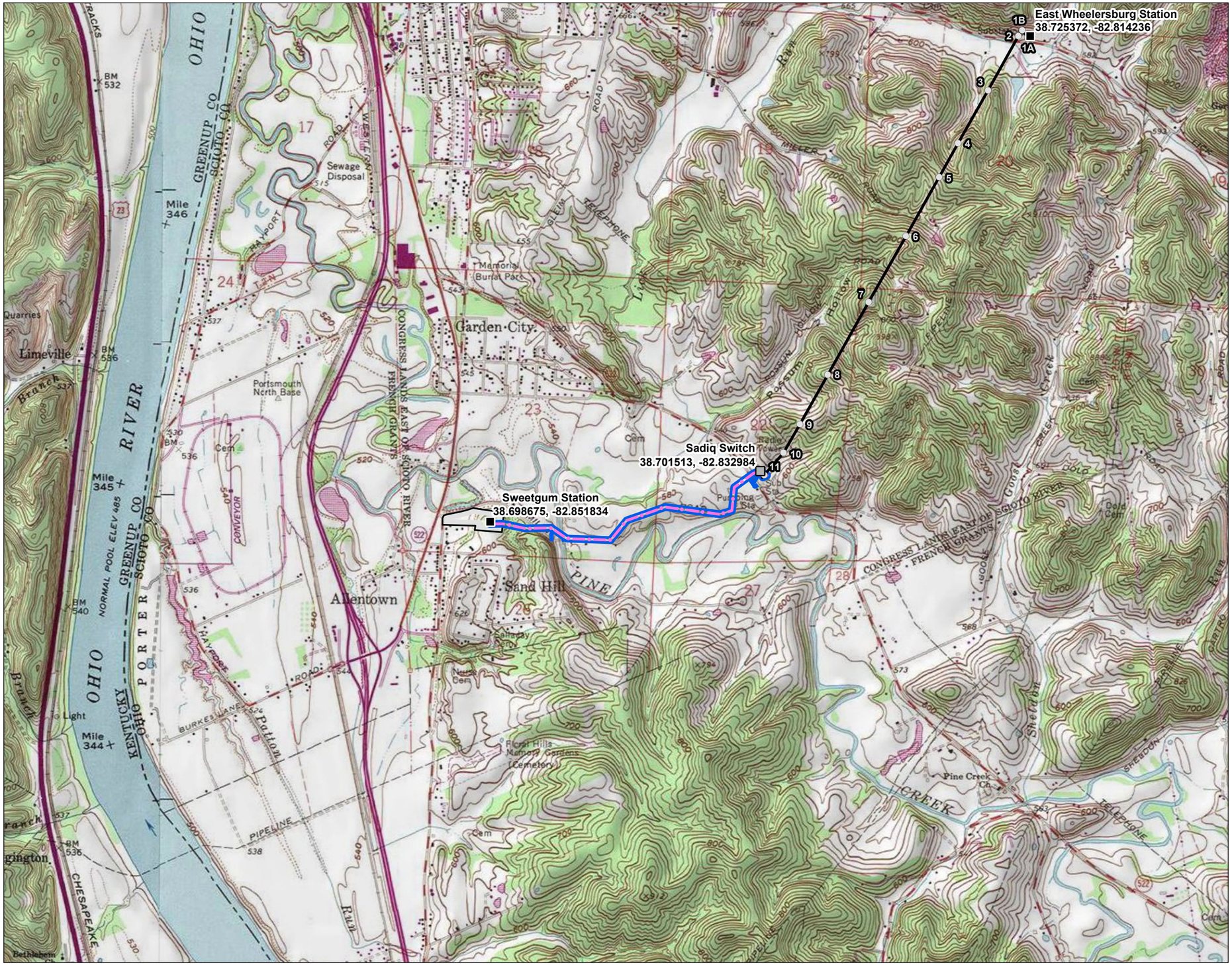


Figure No.

1

Title

Project Location Map

Client/Project 193708588

AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

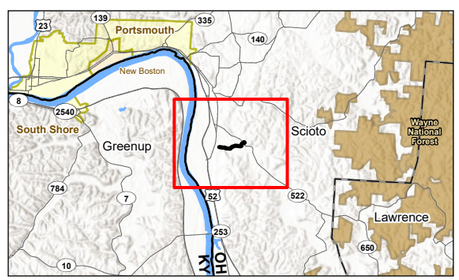
N

0 1,000 2,000 Feet

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

Legend

- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary



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 - Wheelersburg, OH/KY (1985)

Stantec

B.2 WETLAND AND WATERBODY DELINEATION MAP

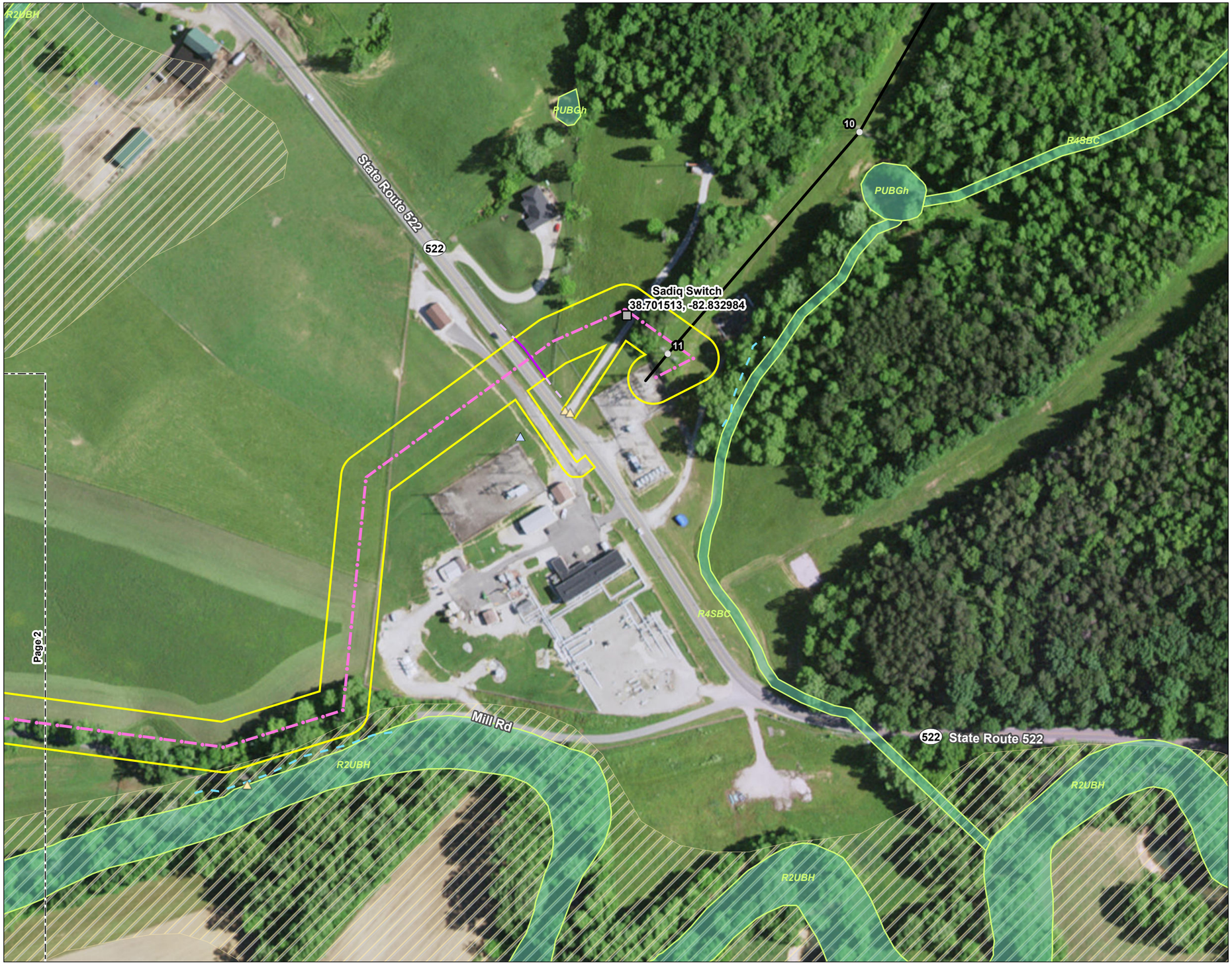


Figure No.
2

Title
Wetland and Waterbody Delineation Map

Client/Project 193708588
AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

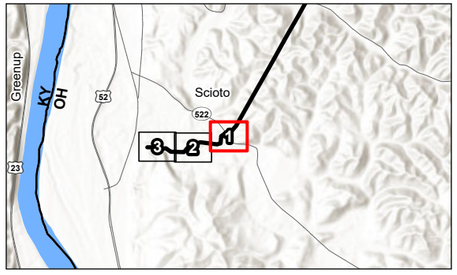
N

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

Legend
- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary
- Photo Location
- Existing Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- 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

Figure No.
2

Title
Wetland and Waterbody Delineation Map

Client/Project 193708588
AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

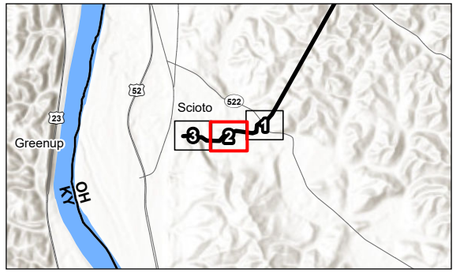
N

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

Legend
- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary
- Photo Location
- Existing Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- 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

Figure No.

2

Title

Wetland and Waterbody Delineation Map

Client/Project 193708588

AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

N

0 100 200 Feet

(At original document size of 11x17)
1:2,400

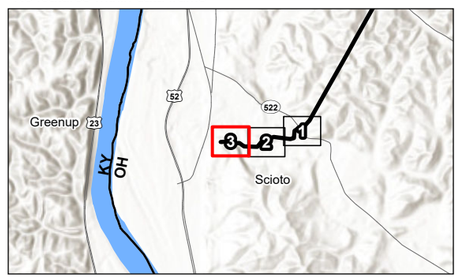
Legend

- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary
- Photo Location
- Existing Culvert
- Storm Drain
- Wetland Determination Sample Point
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- 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

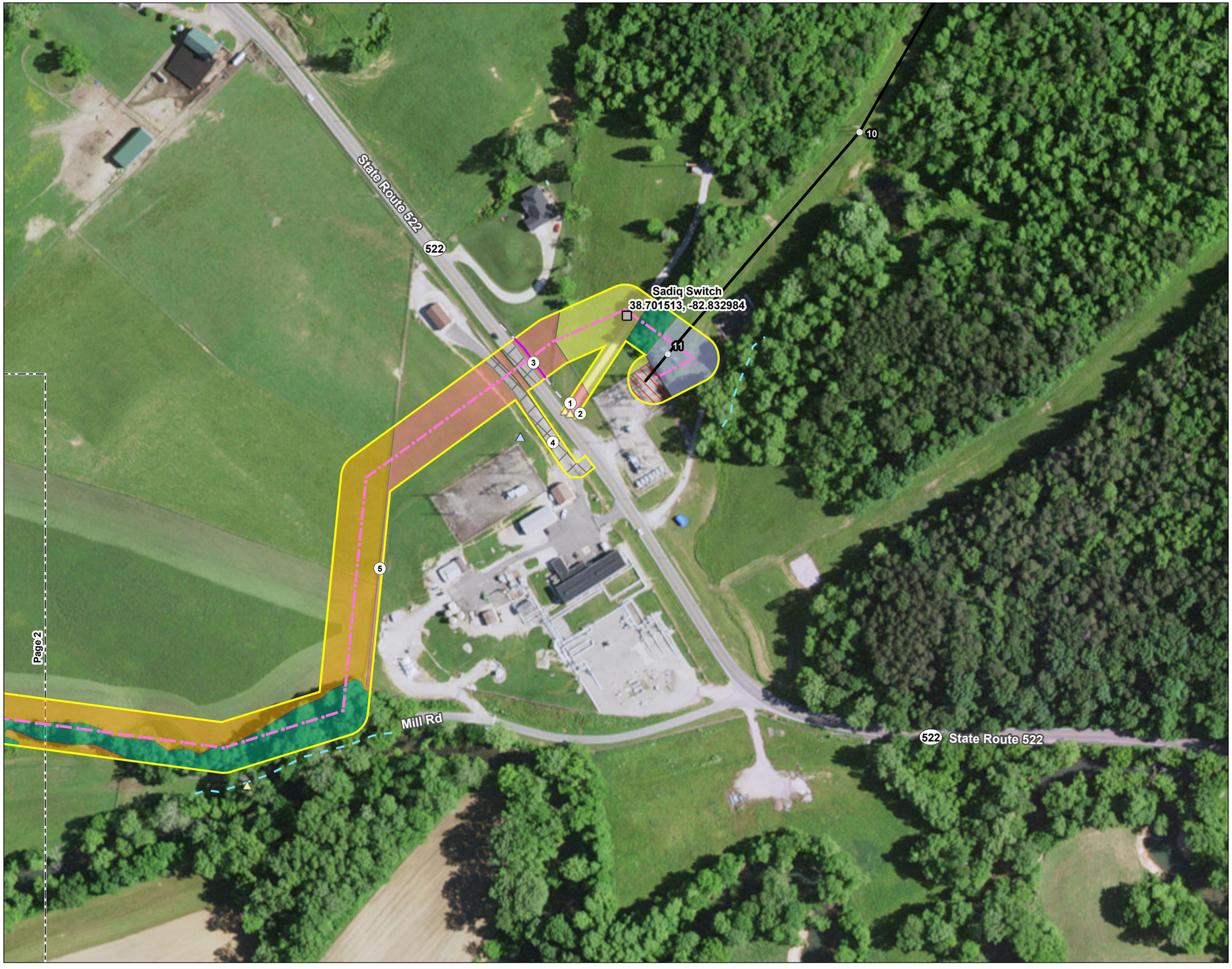


Figure No.
3

Title
Habitat Assessment Map

Client/Project 193708588
AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

N

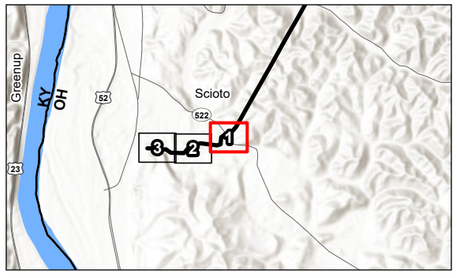
0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend

- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary
- Photo Location
- Existing Culvert
- Storm Drain
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Approximate Wetland

Habitat Area

- Agricultural Field
- Pasture
- Old Field
- Maintained Lawn
- Maintained ROW
- Second Growth Forest
- Industrial Land
- Existing Roadway



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

Stantec

Figure No.
3

Title
Habitat Assessment Map

Client/Project 193708588
AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
TR by AS on 2022-09-27
IR by MK on 2022-09-30

N

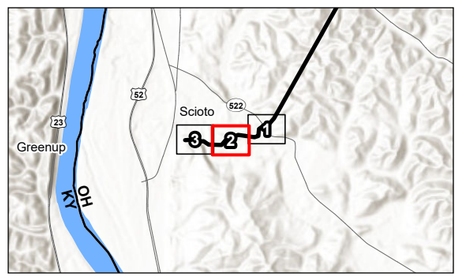
0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend

- AEP Substation
- AEP Switch
- Existing Structure
- Existing Transmission Line
- Proposed Transmission Line
- Project Area
- Proposed Sweetgum Station Boundary
- Photo Location
- Existing Culvert
- Storm Drain
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Field Delineated Waterway
- Approximate Waterway
- Field Delineated Waterway Area
- Approximate Wetland

Habitat Area

- Agricultural Field
- Pasture
- Old Field
- Maintained Lawn
- Maintained ROW
- Second Growth Forest
- Industrial Land
- Existing Roadway



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

Stantec

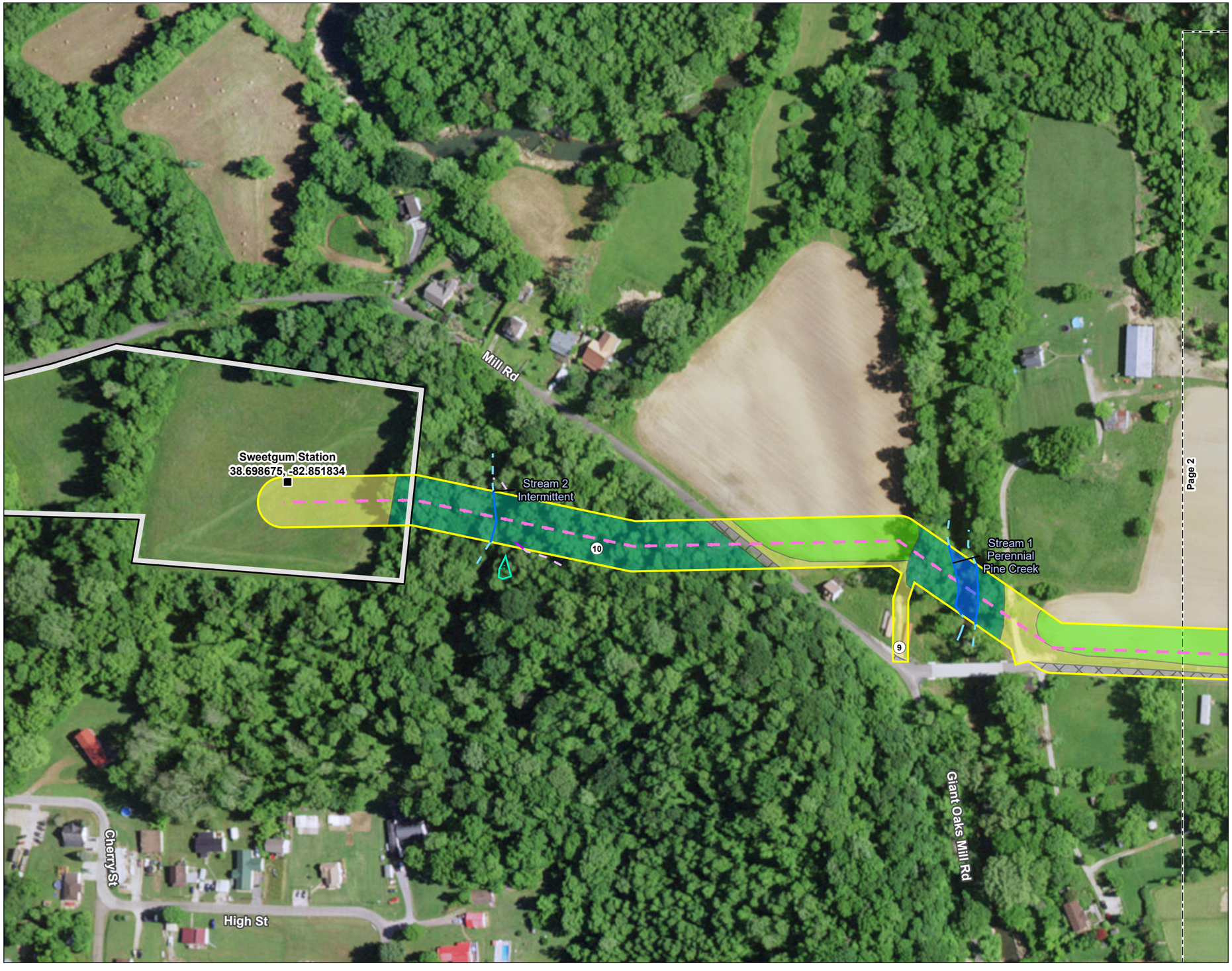


Figure No.
3

Title
Habitat Assessment Map

Client/Project 193708588
AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JLH on 2022-09-07
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0 100 200 Feet
(At original document size of 11x17)
1:2,400

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- AEP Switch
- Existing Structure
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- Proposed Transmission Line
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- Approximate Upland Drainage Feature
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- Approximate Waterway
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Habitat Area

- Agricultural Field
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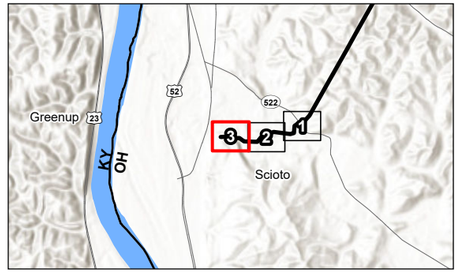
- Old Field
- Maintained Lawn
- Maintained ROW
- Second Growth Forest
- Industrial Land
- Existing Roadway



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

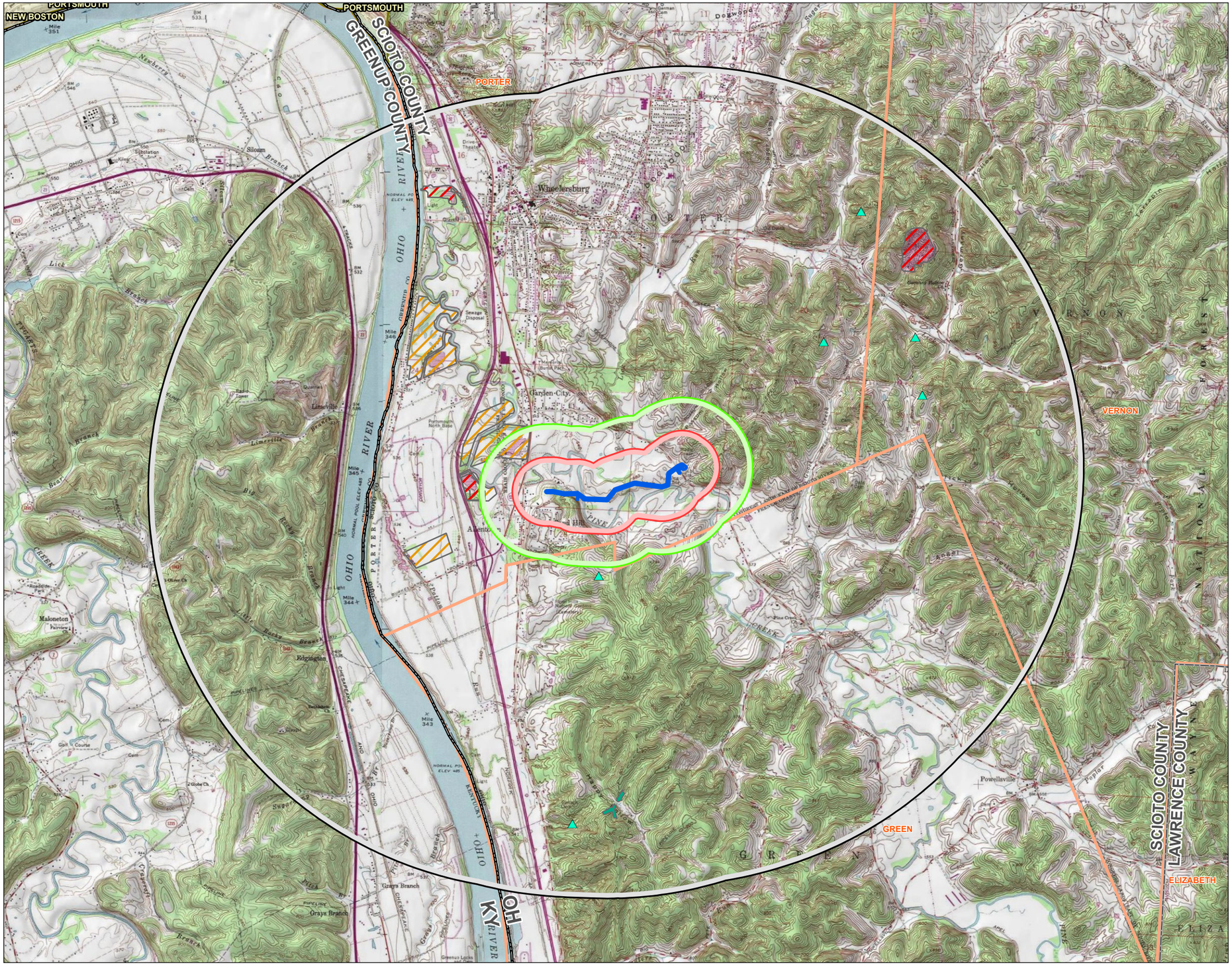


Figure No.

4

Title

Bat Hibernacula Desktop Study Map

Client/Project 193708588

AEP Ohio Transmission Company, Inc.
Sadiq Switch and Sadiq Switch-Sweetgum
138 kV Line Project

Project Location
Scioto County, Ohio

Prepared by JDS on 2022-09-22
TR by AS on 2022-09-27
IR by MK on 2022-09-30

N

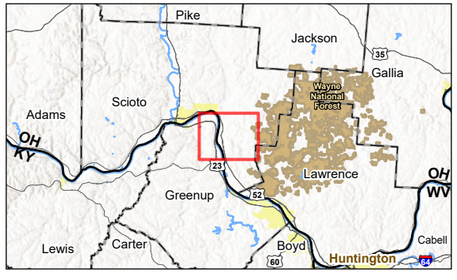
0 2,000 4,000 Feet

(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
- Township Boundary
- Municipal Boundary
- Karst Feature *
- Area of Karst Geology*
- Abandoned Underground Mine
- Inactive Mine*
- Active Surface Mine*
- Inactive Surface Mine Area
- Active Surface Mine Area
- Surface Mine Area (Unknown Status)*
- Abandonded Surface Mine Area*
- Abandoned Underground Mine Area

*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 - Wheelersburg, OH/KY (1985), Portsmouth, OH/KY (1977)

Stantec

Appendix C FIELD COLLECTED DATA FORMS

C.1 WETLAND DETERMINATION FORM

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Sadiq Switch - Sweetgum City/County: Scioto Sampling Date: 09/13/2022

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

Investigator(s): M. Kearns, Z True Section, Township, Range: T002N, R020W, S23

Landform (hillside, terrace, etc.): Side slope Local relief (concave, convex, none): Convex Slope %: 3

Subregion (LRR or MLRA): LRR N MLRA 124 Lat: 38.698107 Long: -82.84734 Datum: WGS84

Soil Map Unit Name: Nolin silt loam, 0 to 3 percent slopes, occasionally flooded 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 X	No ____	**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: NA

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: SP01

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species	Indicator Status
1. *Platanus occidentalis*	25	Yes	FACW
2. *Acer saccharinium*	15	Yes	FACW
3. *Acer negundo*	15	Yes	FAC
4.			
5.			
6.			
7.			
	55	= 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. Fallopia japonica	50	Yes	FACU
2. Dioscorea oppositifolia	20	Yes	UPL
3. Vernonia gigantea	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	= 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: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (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.)
25% open ground

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
0-16	10YR 3/3	100					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: Rock/refusal

Depth (inches): 16

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

Remarks:

C.2 HHEI FORM

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **46**

SITE NAME/LOCATION: **Sadiq Switch - Sweetgum / Scioto County, Ohio**

SITE NUMBER: **Stream 2** RIVER BASIN: **Ohio River** DRAINAGE AREA (mi²): **0.10**

LENGTH OF STREAM REACH (ft): **103** LAT.: **38.69848** LONG.: **-82.85039** RIVER CODE: _____ RIVER MILE: _____

DATE: **08/31/22** SCORER: **T. Gillette** COMMENTS: **Intermittent**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	80%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9** **TOTAL NUMBER OF SUBSTRATE TYPES:** **2**

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

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

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **10**

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

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

COMMENTS: **TOB W-5' D- 1.5 OHWM W-2.5' D- 4"** **AVERAGE BANKFULL WIDTH (meters):** **1.52**

HHEI Metric Points

Substrate Max = 40: **11** (A + B)

Pool Depth Max = 30: **15**

Bankfull Width Max=30: **20**

This information must also be completed

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

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

COMMENTS: _____

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

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

COMMENTS: _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Pine Creek** Distance from Evaluated Stream **0.16**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: **Wheelersburg, OH** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Scioto** Township / City: **Porter Twp**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **08/31/22** Quantity: **0.03**

Photograph Information: **Upstream, Downstream, Substrates**

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

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

Field Measures: Temp (°C) **22.20** Dissolved Oxygen (mg/l) _____ pH (S.U.) **7.50** Conductivity (µmhos/cm) **150**

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

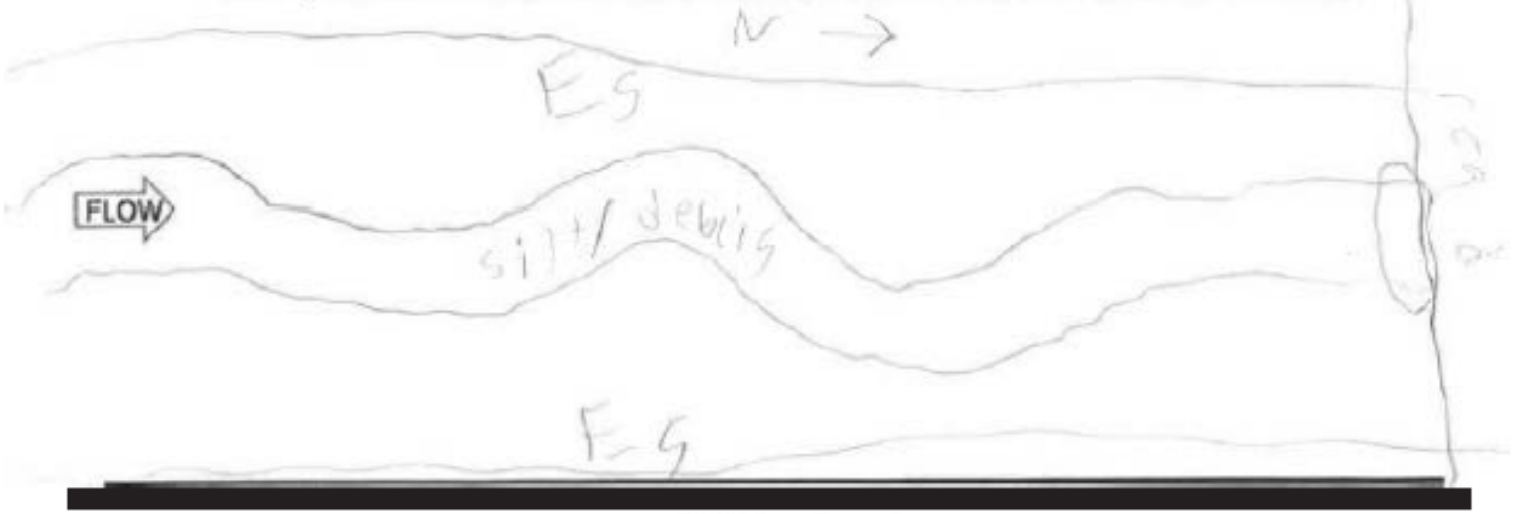
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Comments Regarding Biology: _____

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

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



C.3 QHEI FORM

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 78.5

Stream & Location: Stream 1, Pine Creek — **RM:** _ _ _._ **Date:** 8 / 31 / 22

Sadiq Switch - Sweetgum — **Scorers Full Name & Affiliation:** Tyler Gillette / Stantec

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 38 . 698076 / 82. 847014 — Office verified location ☐

1] SUBSTRATE

Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]	10	10	☐ ☐ DETRITUS [3]		
☐ ☑ COBBLE [8]	60	60	☐ ☐ MUCK [2]		
☑ ☐ GRAVEL [7]	30	30	☐ ☐ SILT [2]		
☐ ☐ SAND [6]			☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]					

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☑ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☑ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

SILT / EMBEDDEDNESS

QUALITY
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☑ FREE [1]
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☑ NONE [1]

Comments

Substrate 18 *Maximum 20*

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

0	UNDERCUT BANKS [1]	1	POOLS > 70cm [2]	0	OXBOWS, BACKWATERS [1]
1	OVERHANGING VEGETATION [1]	0	ROOTWADS [1]	0	AQUATIC MACROPHYTES [1]
1	SHALLOWS (IN SLOW WATER) [1]	2	BOULDERS [1]	2	LOGS OR WOODY DEBRIS [1]
0	ROOTMATS [1]				

AMOUNT Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☑ MODERATE 25-75% [7]
- ☐ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Comments

Cover *Maximum 20* 13

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☑ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☑ GOOD [5]
- ☐ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☑ NONE [6]
- ☐ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☑ HIGH [3]
- ☐ MODERATE [2]
- ☐ LOW [1]

Comments

Channel *Maximum 20* 16

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

EROSION

L	R	
☑	☑	NONE / LITTLE [3]
☐	☐	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

RIPARIAN WIDTH

L	R	
☐	☐	WIDE > 50m [4]
☑	☑	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

FLOOD PLAIN QUALITY

L	R	
☐	☐	FOREST, SWAMP [3]
☑	☑	SHRUB OR OLD FIELD [2]
☑	☑	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian *Maximum 10* 7.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☑ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH Check ONE (*Or 2 & average*)
- ☑ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☑ VERY FAST [1]
- ☑ FAST [1]
- ☐ MODERATE [1]
- ☑ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☑ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool / Current *Maximum 12* 8

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☑ BEST AREAS > 10cm [2]
- ☐ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☑ MAXIMUM > 50cm [2]
- ☐ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☑ STABLE (e.g., Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☑ NONE [2]
- ☐ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Comments

Riffle / Run *Maximum 8* 8

6] GRADIENT

(3.04 ft/mi)

DRAINAGE AREA

(168 mi²)

- ☐ VERY LOW - LOW [2-4]
- ☑ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

%POOL: 10 %GLIDE: 0

%RUN: 30 %RIFFLE: 60

Gradient *Maximum 10* 8

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☑ OTHER

STAGE

1st -sample pass-	2nd
☐ HIGH	☐
☐ UP	☐
☑ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☑ OTHER

_____ meters

CLARITY

1st --sample pass--	2nd
☑ < 20 cm	☒
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

CANOPY

- ☐ > 85%- OPEN
- ☑ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass _____ cm

2nd _____ cm

Comment RE: Reach consistency/ Is reach typical of steam?*, Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

pH: 7.1

Conductivity: 240

Temperature 37.2 degree C

TOB- W-40' D-2.5' OHWM W-40' D-1.5'

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☑ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

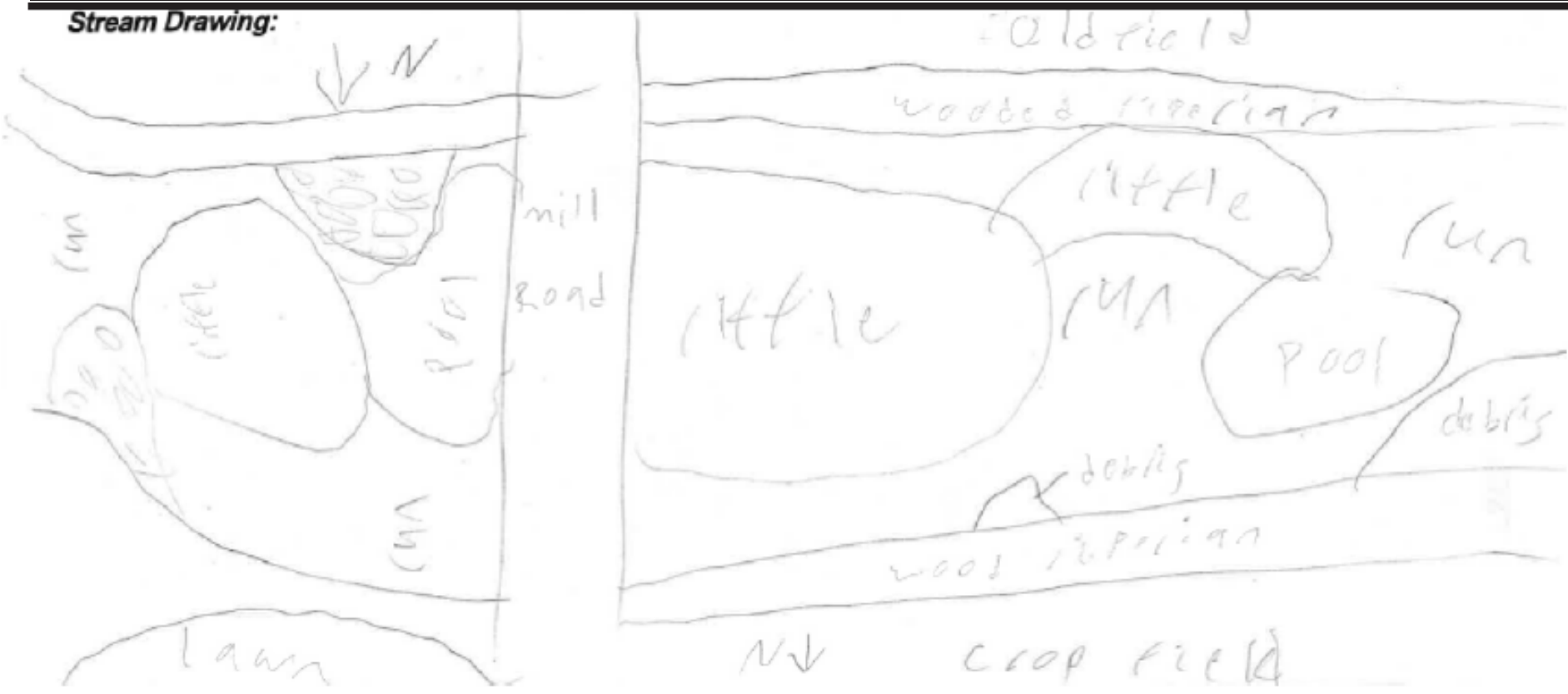
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

x̄ width	40'
x̄ depth	1.5
max. depth	
x̄ bankfull width	40'
bankfull x̄ depth	2.5
W/D ratio	
bankfull max. depth	
floodprone x^2 width	
entrench. ratio	

Legacy Tree:

Stream Drawing:



Appendix D REPRESENTATIVE PHOTOGRAPHS

D.1 WETLAND AND WATERBODY PHOTOGRAPHS

Photo Location 1. View of Stream 1, Pine Creek. Photograph taken facing upstream, south.

Photo Location 1. View of Stream 1, Pine Creek. Photograph taken facing downstream, north.

Photo Location 1. View of Stream 1, Pine Creek, typical substrates.

Photo Location 2. View of wetland determination sample point (SP01, upland). Photograph taken facing south.

Photo Location 2. View of wetland determination sample point (SP01, upland), soil profile.

Photo Location 3. View of Stream 2. Photograph taken facing upstream, south.

Photo Location 3. View of Stream 2. Photograph taken facing downstream, north.

Photo Location 3. View of Stream 2, typical substrates.

Representative Photographs
October 11, 2022

D.2 HABITAT PHOTOGRAPHS

Photo Location 1. View of maintained lawn and existing gravel path. Photograph taken facing northeast.

Photo Location 2. View of culvert. Photograph taken facing north.

Photo Location 2. View of culvert. Photograph taken facing south.

Photo Location 3. View of maintained lawn. Photograph taken facing northeast.

Photo Location 3. View of maintained lawn and existing roadway. Photograph taken facing southwest.

Photo Location 4. View of existing roadway. Photograph taken facing northwest.

Photo Location 4. View of existing roadway. Photograph taken facing southeast.

Photo Location 5. View of pasture habitat. Photograph taken facing south.

Photo Location 6. View of pasture habitat. Photograph taken facing northeast.

Photo Location 6. View of pasture habitat. Photograph taken facing northwest.

Photo Location 7. View of representative upland drainage feature. Photograph taken facing west.

Photo Location 7. View of representative upland drainage feature. Photograph taken facing east.

Photo Location 8. View of agricultural field habitat. Photograph taken facing east.

Photo Location 8. View of agricultural field habitat. Photograph taken facing west.

Photo Location 9. View of old field habitat. Photograph taken facing east.

Photo Location 9. View of old field habitat. Photograph taken facing west.

Photo Location 10. View of second growth deciduous forest. Photograph taken facing south.

Photo Location 10. View of second growth deciduous forest. Photograph taken facing north.

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: 21-1131; AEP Sadiq Switch and Sadiq Switch - Sweetgum 138 kV Line Projects

Project: The proposed project involves a new 3-way switch structure with permanent access road and 100' x 100' gravel pad as well as a new greenfield route that is approximately 1.5 miles in length.

Location: The proposed project is located in Porter Township, 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:

Eastern Spadefoot (*Scaphiopus holbrookii*), E

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 $\geq$ 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*)
fanshell (*Cyprogenia stegaria*)
northern riffleshell (*Epioblasma torulosa rangiana*)
pink mucket (*Lampsilis orbiculata*)
purple cat's paw (*Epioblasma o. obliquata*)
rayed bean (*Villosa fabalis*)
sheepnose (*Plethobasus cyphyus*)
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*)

This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: https://ohiodnr.gov/static/documents/wildlife/permits/dow-protocol-ohio-mussel-survey.pdf

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*)
northern madtom (*Noturus stigmosus*)
popeye shiner (*Notropis ariommus*)
shoal chub (*Macrhybopsis hyostoma*)
shortnose gar (*Lepisosteus platostomus*)
shovelnose sturgeon (*Scaphirhynchus-platorynchus*)

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. The DOW recommends that an approved herpetologist conducts a habitat suitability survey to determine if suitable habitat is present within the project area. If suitable habitat is determined to be present; the DOW recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. Due to the location, 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: Sadiq Switch and Sadiq Switch – Sweetgum 138 kV Line Projects, Scioto County, Ohio
Date: Monday, December 20, 2021 11:12:01 AM
Attachments: image.png
image.png

TAILS# 03E15000-2022-TA-0499

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