# Construction Notice for the South Kenton-Scioty Solar 138 kV Generation Tie Line Project

PUCO Case No. 26-0566-EL-BNR

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

Submitted by:
AEP Ohio Transmission Company, Inc.

May 20, 2026

# CONSTRUCTION NOTICE

## AEP Ohio Transmission Company, Inc.

## South Kenton – Scioty Solar 138 kV Generation Tie Line

### 4906-6-05 Accelerated Application Requirements

AEP Ohio Transmission Company, Inc. (the Company) provides 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

**Provide the name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a letter of notification or construction notice application.**

The Company proposes to construct the South Kenton–Scioty Solar 138 kV Generation Tie Line Project (the "Project"), in Buck Township, Hardin County, Ohio. The purpose of the Project is to provide a 138 kV interconnection to the Scioty Solar facility proposed by Heelstone Renewable Energy, an Independent Power Producer (IPP). The PJM Queue Position is AG1-554. Less than 0.1 mile of 138 kV transmission line will be constructed between the Company's South Kenton Station to a point of interconnection with the IPP transmission line located just south of the substation fence. The Project will be built entirely on land owned by the Company or under option by the IPP. The location of the Project is shown on **Figure 1** and **Figure 2** in **Appendix A**.

The Project meets the requirements for a Construction Notice (CN) as defined by Item 1 (d)(i) of Appendix A to Ohio Administrative Code Section 4906-1-05, *Application Requirement Matrix for Electric Power Transmission Lines*:

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

The Project has been assigned Case No. 26-0566-EL-BNR.

### B(2) Statement of Need

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

Heelstone Renewable Energy plans to build a 49.9 MW Maximum Facility Output (MFO) (32.7 MW Capacity) solar generating facility in Hardin County, Ohio. As a part of the AG1-554 IPP Interconnection Service Agreement, the Company will be required to construct a 138kV generation tie line from the Company's South Kenton station to the point of interconnection for the solar facility. Advanced transmission technologies were not considered for this gen-tie line project.

Failure to move forward with the proposed Project will result in the Company's inability to serve the customer's generation interconnection request, thereby jeopardizing the customer's required in-service date per the FERC approved Interconnection Service Agreement.

A PJM network number was assigned to the Project, n8999. The Board has approved the generating facility (Case # 20-1814-EL-BGN). The Project was identified in the Company's 2026 Long Term Forecast Report on page 28 (See **Appendix B**).

### B(3) Project Location

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

The location of the Project in relation to existing transmission lines and substations is shown on **Figure 1**, in **Appendix A**.

### B(4) Alternatives Considered

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

The Project provides interconnection with an IPP solar facility. Due to the location of the existing station and IPP point of interconnection, short transmission line length, and minimal land use impacts in the Project area, no other alternatives were considered for the Project. Any other alternative would add additional length to the Project without any additional benefit. This alternative is located within agricultural land and the existing substation with no impacts to wetlands, streams, or known cultural resource areas. Therefore, this Project represents the most suitable location and is the most appropriate solution for meeting the Company's needs in the area.

### B(5) Public Information Program

**Describe its public information program to inform affected property owners and residents of the nature of the project and the proposed timeframe for project construction and restoration activities.**

The Project will be located entirely within properties owned by the Company or under option by the IPP, with no additional property owners or tenants affected. The Company maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project.

### B(6) Construction Schedule

**Provide an anticipated construction schedule and proposed in-service date of the project.**

Construction of the Project is planned to begin in January 2027 with an anticipated in-service date of April 2027.

### B(7) Area Map

**Provide a map of at least 1:24,000 scale clearly depicting the facility and proposed limits of disturbance with clearly marked streets, roads, and highways, and an aerial image.**

**Figure 1, in Appendix A**, identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle maps of Mount Victory and Kenton, Ohio. **Appendix A, Figure 2** displays the Project components on a 2023 aerial photograph.

### B(8) Property Agreements

**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 required for the Project are provided in **Table 1**, below.

**Table 1 – Property Agreements**

| Property Parcel Number | Agreement Type | Easement or Option Obtained (Yes/No) |
|---|---|---|
| 041200300000 | Company Affiliate Owned | N/A |
| 041200200000 | Easement (Property Under Option by IPP) | Yes |

**B(9) Technical Features**

**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 is estimated to include the following:

Voltage: 138kV
Conductors: 795 kcmil 26/7 DRAKE ACSR
Static Wire: (2) DNO-12739 (144-count OPGW)
Insulators: Polymer
ROW Width: 100 feet
Structure Type: One (1) single circuit, steel 3-pole dead end

**B(9)(b) Electric and Magnetic Fields**

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

No occupied residences or institutions are located within 100 feet of the Project.

**B(9)(c) Project Cost**

**The estimated capital cost of the project.**

The cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $900,000 using a Class 4 estimate. The costs for this Project will be recovered through total reimbursement by the IPP.

**B(10) Social and Ecological Impacts**

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

**B(10)(a) Land Use**

**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 location includes the South Kenton Station property and a portion of adjacent property that has historically been used for agriculture but is currently under option by the IPP. The surrounding vicinity is primarily agricultural land with scattered woodlots. An aerial photograph of the Project vicinity is provided as **Figure 2**. The Project is mapped within Buck Township in Hardin County The Project does not anticipate the need to clear forested land.

### B(10)(b) Agricultural Land

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

The Project Area consists of the South Kenton Station property and a current agricultural parcel under option by the IPP for their collector distribution substation. Based on data received from the Hardin County Auditor's office on April 8, 2026, there are no agricultural district parcels within the potential disturbance area of the Project. The Project parcels are not part of an Ohio Department of Agriculture easement.

### B(10)(c) Archaeological and Cultural Resources

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

A cultural resource survey and report were conducted by the Company's consultant for the Project in November 2024. Correspondence from the State Historic Preservation Office ("SHPO") was received in December, see **Appendix C**. The SHPO stated that that the Project will have no adverse effect on historic properties and that no further archaeological work is necessary.

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

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

A summary of anticipated permits and authorizations for the Project is provided in **Table 2**, below. There are no other known local, state, or federal requirements that must be met prior to commencement of the Project.

**Table 2 – Anticipated Permits**

| Permit/Authorization/Coordination | Agency | Date |
|---|---|---|
| Storm Water Pollution Prevention Plan | Ohio Environmental Protection Agency | Obtained January 2026 |
| | Hardin County | |
| Notice Criteria | Federal Aviation Administration | Submitted through Criteria Tool on 3/26/2026, no further action required |
| Clean Water Act Section 404/401 | United States Army Corps of Engineers | Not Applicable |

| | | |
|---|---|---|
| | Ohio Environmental Protection Agency | |
| Archaeology/Architectural | Ohio Historic Preservation Office | Coordination complete 12/6/2024, no additional work required |
| Threatened and Endangered Species | United States Fish and Wildlife Service | Consultation complete 6/12/2023 |
| Threatened and Endangered Species | Ohio Department of Natural Resources | Consultation complete 5/19/2023 |

**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.**

On April 19, 2023, coordination letters were submitted to the United State Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review of the Project for potential impacts to state and/or federally protected species. ODNR and USFWS provided responses on May 19, 2023 and June 12, 2023, respectively. Copies of the agencies' responses are presented in **Appendix C**.

**Table 4**, in **Appendix D** lists the federal and state threatened or endangered species in the Project area.

Based on the nature of the proposed Project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated.

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

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

The Company's consultant conducted a wetland and stream delineation survey in the Project study area on April 19, 2023 and August 6, 2025, and prepared an Ecological Survey Report, which is provided in **Appendix D**. The survey of the Project area identified one stream, no wetlands, and no ponds. The

stream is not crossed by the proposed Project and no in-water work is proposed. The Project construction activities are not expected to result in discharge of fill in any delineated features.

Based on a review of the Protected Areas Database of the United States as well as the Conservation Easement Database, there are no state or national parks, forests, wildlife areas or mapped conservation easements in the vicinity of the Project.

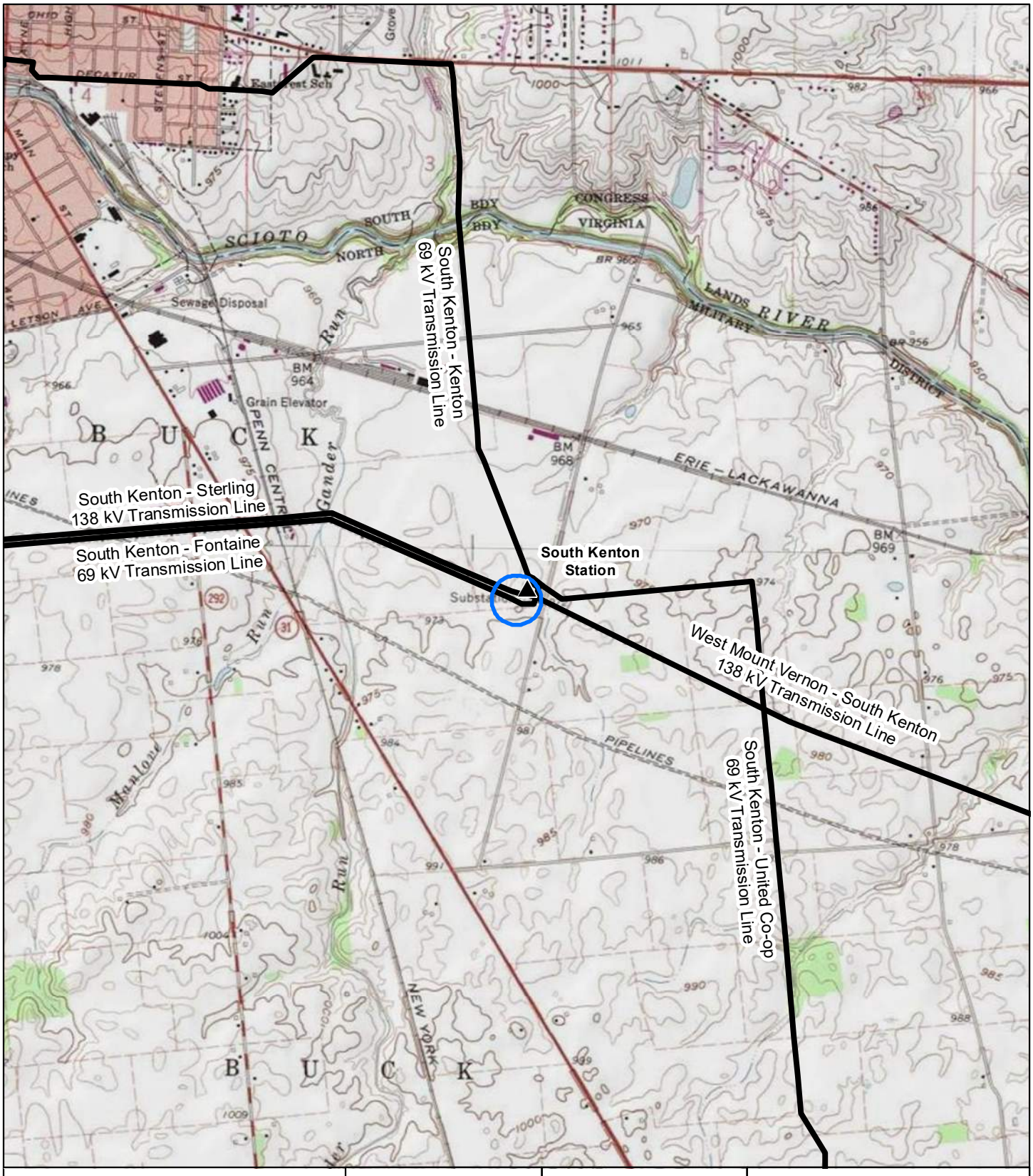
The FEMA Flood Insurance Rate Map ("FIRM") was reviewed to identify any floodplains/flood hazard areas that have been mapped within the Project Area (specifically, map number 39159C0025D). Based on this mapping, no FEMA-designated 100-year floodplains are crossed by the proposed alignment. No floodplain permits are necessary.

### 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




Project
Existing Transmission
Existing Station

Data Sources: AEP,
ESRI USA Topo Maps

Ohio State Plane North
NAD 1983

March 31, 2026

PROJECT LOCATION

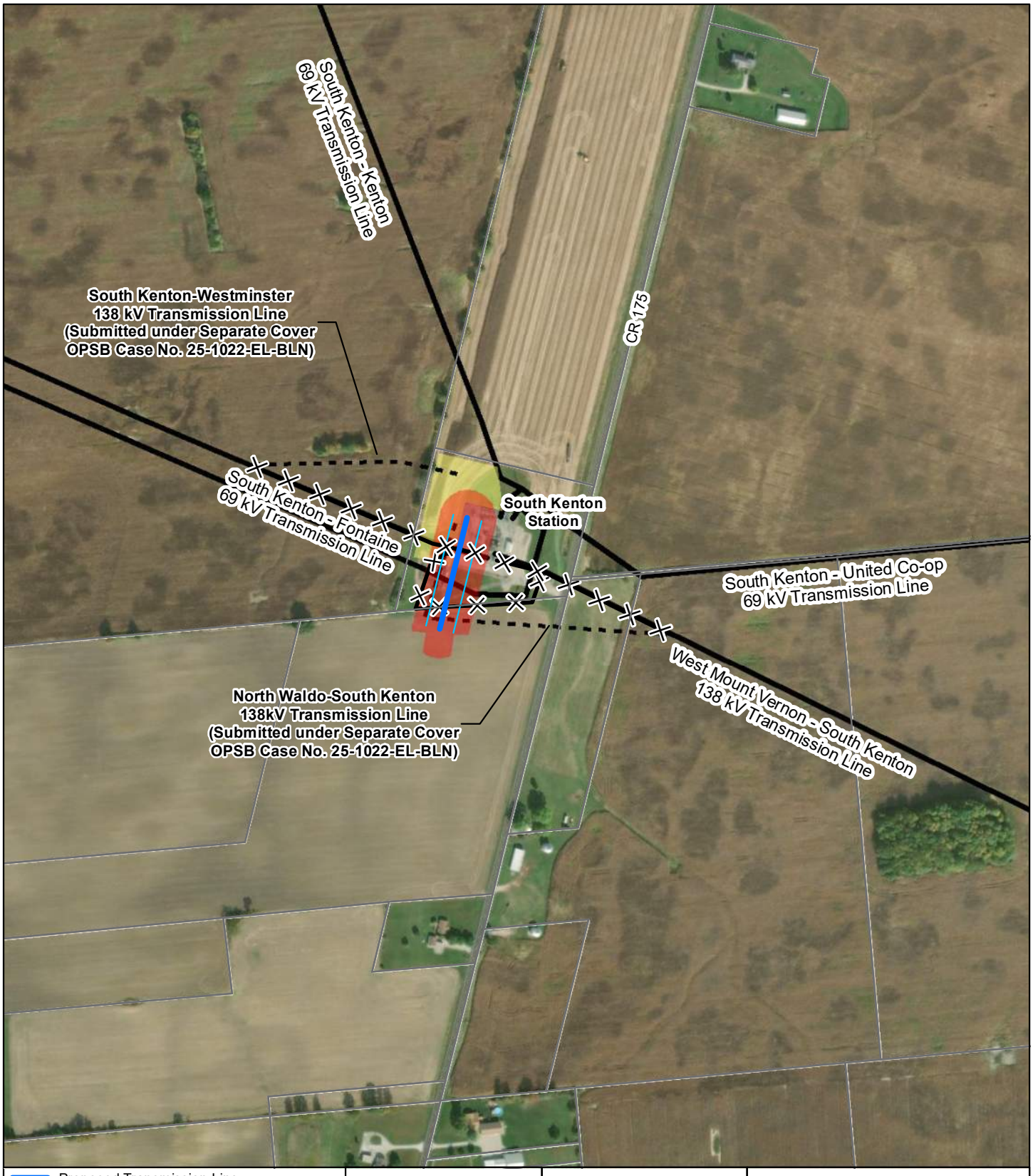

HARDIN COUNTY, OHIO

# FIGURE 1
# TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

**South Kenton-Scioty Solar**
**138 kV Generation Tie Line**

0 1,000 2,000 3,000
Feet




Proposed Transmission Line
Proposed Right-of-way
Project Corridor
Proposed Transmission Line Relocation (Submitted Separately)
Transmission Line Removal
Existing Transmission Line
Approximate Distribution Station Expansion
Parcel Boundary

Data Sources: AEP, ESRI World Imagery

Ohio State Plane North
NAD 1983

March 31, 2026

PROJECT LOCATION


HARDIN COUNTY, OHIO

# FIGURE 2
# PROJECT AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

**South Kenton-Scioty Solar**
**138 kV Generation Tie Line**

0 250 500 750
Feet

# Appendix B Long Term Forecast Report

| | | |
|---|---|---|
| 6 | CONSTRUCTION: | 2026 |
| 7 | CAPITAL INVESTMENT: | $4.01 M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Steel |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | Rebuild & retire aging infrastructure |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Potential for increased transmission line outages |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | South Kenton - Scioty Solar (TP2022019 AG1-554) |
| 2 | POINTS OF ORIGIN AND TERMINATION | South Kenton - Scioty Solar INTERMEDIATE STATION - N/A |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | 0.05 mi / 100 ft / 1 circuit |
| 4 | VOLTAGE: DESIGN / OPERATE | 138 / 138 kV |
| 5 | APPLICATION FOR CERTIFICATE: | 2025 |
| 6 | CONSTRUCTION: | 2026 - 2027 |
| 7 | CAPITAL INVESTMENT: | $0.8 M (reimbursable) |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Steel |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | Service to new customer |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Unable to serve new customer |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Continental - Platter Creek 69 KV (formerly Mark Center Switch) (TP2026002 b4026) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Continental - Platter Creek 69 KV INTERMEDIATE STATION - Sherwood, Auglaize, South Rice SW and North Continetal SW |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~ 22 mi / 60 ft / 1 Circuit (~14.48 miles of line work) |
| 4 | VOLTAGE: DESIGN / OPERATE | 69 kV / 69 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2030 |
| 7 | CAPITAL INVESTMENT: | $ 28 M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Wood |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | To fix overloaded for N-1 outages |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Increased risk of equipment failure, reliability, and operational issues |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Kenton - South Kenton No. 2 (TP2026006 B3970) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Kenton - South Kenton 69kV INTERMEDIATE STATION - N/A |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~4.92 mi / 60 ft / 1 circuits (~2.87 mi of Line rebuild) |
| 4 | VOLTAGE: DESIGN / OPERATE | 69 kV / 69 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2029 |
| 7 | CAPITAL INVESTMENT: | $ 13.19 M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Wood |
| 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: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Kirk - West Millersport & Hyatt (OP) - West Millersport 345 KV ( b4068.27 TP2026012) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Kirk - West Millersport 345 KV INTERMEDIATE STATION - N/A |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~9.47 mi / 150 ft / 2 Circuit (6.4 miles of work) |
| 4 | VOLTAGE: DESIGN / OPERATE | 345 KV / 345 KV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2030 |
| 7 | CAPITAL INVESTMENT: | $ 24M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Steel |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | To fix N-1-1 overloads |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Increased risk of equipment failure, reliability, and operational issues |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Hyatt-Maliszewski No.2 138 KV & Hyatt (OP) - West Millersport 345 KV (b4068.28 TP2026036) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Hyatt-Maliszewski 138kV INTERMEDIATE STATION - N/A Hyatt - West Millersport 345kV INTERMEDIATE STATION - N/A |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | 38 mi / 150 ft / 2 Circuit ( ~5.25 mi of line work) |
| 4 | VOLTAGE: DESIGN / OPERATE | 345 KV / 345 KV & 138 kV / 138 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2030 |
| 7 | CAPITAL INVESTMENT: | $ 34.13 M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Steel |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | To fix N-1-1 overloads |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Increased risk of equipment failure, reliability, and operational issues |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Fort Steuben - South Toronto & Hammondsville - South Toronto 69 kV (s3724 TP2021600) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Fort Steuben - South Toronto INTERMEDIATE STATION - Sunset Blvd sw Hammondsville - South Toronto 69 kV INTERMEDIATE STATION - West Toronto Stratton(op), Sugar Rove Sw |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~19.45 miles / 60 ft / 1 circuit (~18.5 mi single circuit & ~0.95 mi double Circuit) |
| 4 | VOLTAGE: DESIGN / OPERATE | 69 kV / 69 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2025 |
| 7 | CAPITAL INVESTMENT: | $82.7 M |
| 8 | PLANNED SUBSTATION: | Croxton Switch |
| 9 | SUPPORTING STRUCTURES: | Steel |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | Rebuild aging infrastructure |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Potential for increased transmission line outages |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Fort Steuben - South Toronto & Hammondsville - South Toronto 69 kV (TP2021600 b3298) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Fort Steuben - South Toronto INTERMEDIATE STATION - Sunset Blvd sw Hammondsville - South Toronto 69 kV INTERMEDIATE STATION - West Toronto Stratton(op), Sugar Rove Sw |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~0.8 miles / 60 ft / 2 Circuit |
| 4 | VOLTAGE: DESIGN / OPERATE | 69 kV / 69 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2025 |
| 7 | CAPITAL INVESTMENT: | $2.83 M |
| 8 | PLANNED SUBSTATION: | Croxton Switch |
| 9 | SUPPORTING STRUCTURES: | Wood |
| 10 | PARTICIPATION WITH OTHER UTILITIES | N/A |
| 11 | PURPOSE OF THE PLANNED TRANSMISSION LINE | Rebuild aging infrastructure |
| 12 | CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION | Potential for increased transmission line outages |
| 13 | MISCELLANEOUS: | |
| 14 | Advanced Transmission Technologies | Advanced Transmission Technologies do not offer enough benefits in lieu of a traditional/robust solution needed for this specific case. |
| 1 | LINE NAME AND NUMBER: | Fort Steuben - South Toronto 69 kV (TP2021600 b3308) |
| 2 | POINTS OF ORIGIN AND TERMINATION | Fort Steuben - South Toronto INTERMEDIATE STATION - Sunset Blvd sw |
| 3 | RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS | ~0.5 miles / 60 ft / 1 Circuit |
| 4 | VOLTAGE: DESIGN / OPERATE | 69 kV / 69 kV |
| 5 | APPLICATION FOR CERTIFICATE: | TBD |
| 6 | CONSTRUCTION: | 2025 |
| 7 | CAPITAL INVESTMENT: | $0.73M |
| 8 | PLANNED SUBSTATION: | N/A |
| 9 | SUPPORTING STRUCTURES: | Steel |

# Appendix C  Agency Correspondence

In reply, refer to
2024-HAR-62952

December 6, 2024

Ryan J. Weller
Weller & Associates, Inc.
1395 West Fifth Avenue
Columbus, Ohio 43212
rweller@wellercrm.com

**RE: South Kenton Station Upgrades Project, Buck Township, Hardin County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received on November 8, 2024, regarding the proposed South Kenton Station Upgrades Project in Buck Township, Hardin 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 (OPSB) rules for siting this project (OAC 4906-4 & 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the 2.7 ha (6.6 ac) South Kenton Station Upgrades Project in Buck Township, Hardin County, Ohio* by Ryan J. Weller and Scott McIntosh (Weller & Associates, Inc. 2024). This submission addresses proposed upgrades to the existing South Kenton Station facility in Hardin County, Ohio. A literature review, visual inspection, surface collection and subsurface investigations (shovel probe and shovel test unit excavation) were conducted as part of these investigations. Disturbance related to the construction of the existing station facility was noted in portions of the project area. There were no previously documented archaeological sites located within the project area and no new archaeological sites were identified through these investigations. Our office agrees that no additional archaeological survey is needed.

A literature review and field survey for architectural resources were conducted as part of the investigations. One (1) resource fifty years of age or older was identified in the Area of Potential Effects (APE). It is Weller's recommendation that this resource is not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendation of eligibility. Therefore, we agree that there will be no effect on historic resources as a result of the project.

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 cultural resources are discovered during the implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me by e-mail at cgullett@ohiohistory.org, or Ms. Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Catherine Gullett, Project Reviews Coordinator - Archaeology
Resource Protection and Review
State Historic Preservation Office

RPR Serial No. 1105693

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

May 19, 2023

Daniel Godec
Stantec Consulting Services, Inc.
10200 Alliance Road, Suite 300
Cincinnati OH 45242

**Re:** 23-0437; South Kenton-North Waldo 138 kV Line Rebuild

**Project:** The proposed project involves rebuilding a 138 kV Line from Kenton to North Waldo.

**Location:** The proposed project is located in Buck & Dudley Townships of Hardin County, and Bowling Green, Green Camp, Pleasant, & Richland Townships of Marion 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 within one mile of the project area:

Least Darter (*Etheostoma microperca*), SC
Elktoe (*Alasmidonta marginata*), SC
Creek Heelsplitter (*Lasmigona compressa*), SC
Rainbow (*Villosa iris*), SC

The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Conservation status abbreviations are as follows: 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 = federally endangered, and FT = federally threatened.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

**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 portion of the project west of Township Road 199 in Hardin County is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, 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 endangered 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 bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. However, if trees are present within this area, (outside of the area delineated above) 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.

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 & NORTHERN LONG-EARED 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 Eileen Wyza, 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 clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the purple lilliput (*Toxolasma lividus*), a state endangered mussel, and the pondhorn (*Uniomerus tetralasmus*), a state threatened mussel. This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), 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. 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, 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. If there is no in-water work proposed, impacts to mussels are not likely.

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 aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. 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. A list of approved herpetologists has been provided for your convenience.

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the trumpeter swan (*Cygnus buccinator*), a state threatened bird. Trumpeter swans prefer large marshes and lakes ranging in size from 40 to 150 acres. They like shallow wetlands one to three feet deep with a diverse mix of plenty of emergent and submergent vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through June 15. If this habitat will not be impacted, this project is not likely to have an impact on this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this type of habitat will not be impacted, the 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.

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

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

June 12, 2023

Project Code: 2023-0068762

Dear Mr. Godec:

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, endangered, and proposed 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 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.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

*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.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared 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, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

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
Eileen Wyza, ODNR-DOW

# Appendix D Ecological Survey Report

# South Kenton Station Expansion Project

## Ecological Survey Report

Prepared for:

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

Prepared by:

Stantec Consulting Services, Inc.
10200 Alliance Road, Suite 300
Blue Ash, OH 45242

August 15, 2025

# Sign-off Sheet

This document entitled South Kenton Station Expansion Project Ecological Survey Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of AEP Ohio Transmission Company, Inc. 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 Kate Bomar

(signature)

**Kate Bomar**

Reviewed by

(signature)

**Aaron Kwolek**

Reviewed by Daniel J. Godec

(signature)

**Dan Godec**

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# 1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing construction activities associated with the South Kenton Station Expansion Project (the Project). AEP plans to conduct construction activities to rebuild/expand the existing South Kenton 138 kV substation (South Kenton Station) (Figure 1, Appendix A). The Project area was surveyed for wetlands, waterbodies, open water features, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on April 19, 2023, and August 6, 2025. 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. The approximate locations of these features are shown on the Figure 2 map in Appendix A 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 mapping, National Wetlands Inventory (NWI) mapping, 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 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010). 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). Functional assessment of streams identified 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) data forms. The centerline of each waterway and/or the OHWM of each waterway was identified and surveyed using a handheld sub-meter accuracy global positioning system (GPS) unit and mapped with geographic information system (GIS) software. Additionally, the locations of ponds/open water features and 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 B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by federally listed or state-listed species that have the potential to occur within Hardin County.

# 3.0 RESULTS

## 3.1 TERRESTRIAL HABITAT

Stantec completed field surveys for threatened and endangered species or their habitats on April 19, 2023, and August 6, 2025. Figure 3 (Appendix A) shows the vegetation communities/habitats and land cover types identified within the Project area and the locations of any identified rare, threatened, or endangered species habitat observed within the Project area during the time of the habitat assessment surveys. Representative photographs of the vegetation communities/habitats and land cover types identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 3, Appendix A). Information regarding the vegetation communities/habitats/land cover types identified within the Project area is provided in Table 1.

**Table 1. Vegetation Communities and Land Cover Types Found within the South Kenton Station Expansion Project Area, Hardin County, Ohio**

| Vegetation Communities and Land Cover Types within the Project Area | Degree of Human-Related Ecological Disturbance | Unique, Rare, or High Quality? | Approximate Acreage Within Project Area |
|---|---|---|---|
| Agricultural Land | Extreme Disturbance/Ruderal Community dominated by planted row crop species such as corn (*Zea mays*), and soybean (*Glycine max*). | No | 8.20 |
| Maintained Lawn | Extreme Disturbance/Ruderal Community (dominated by planted non-native species, opportunistic invaders, and/or native highly tolerant taxa). Common plant species included common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), narrowleaf plantain (*Plantago lanceolata*), tall fescue (*Schedonorus arundinaceus*), and perennial ryegrass (*Lolium perenne*). | No | 3.43 |
| Existing Road | Extreme Disturbance/existing paved road or other paved area (little to no vegetation is present in these habitats). | No | 0.29 |
| Industrial Land | Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats). | No | 1.55 |
| New Field | Extreme Disturbance/Ruderal Community. Common plant species included tall fescue, smooth brome (*Bromus inermis*), frost aster (*Symphotrichum pilosum*), ticktrefoil (*Desmodium* sp.), eastern poison ivy (*Toxicodendron radicans*), | No | 1.05 |

| 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 |
|---|---|---|---|
| | orchardgrass (*Dactylis glomerata*), and Queen Anne's lace (*Daucus carota*). | | |
| Mixed Early Successional/Second Growth Deciduous Forest | Moderate Disturbance (mixed communities of herbaceous, shrub, and canopy strata of varying quality). Dominant species included Amur honeysuckle (*Lonicera maackii*), black walnut (*Juglans nigra*), white oak (*Quercus alba*), prickly ash (*Zanthoxylum americanum*), and white mulberry (*Morus alba*). | No | 0.24 |
| | | **TOTAL** | **14.76** |

## 3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project area and evaluated three wetland determination sample points on April 19, 2023, and August 6, 2025. As a result of the field surveys, Stantec did not identify any wetlands within the Project area. Figure 2 (Appendix A) shows the locations of the wetland determination sample points evaluated by Stantec within the Project area. Representative photographs of the wetland determination sample point locations are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed wetland determination data forms are included in Appendix D. A summary of the disposition of NWI-mapped wetlands within the Project area is provided in Table 2.

**Table 2. Summary of NWI Disposition within the South Kenton Station Expansion Project Area, Hardin County, Ohio**

| NWI Code | NWI Description | Figure 2 Page Number | Related Field Inventoried Resource(s) | Comments |
|---|---|---|---|---|
| R4SBC | Riverine, intermittent, streambed, seasonally flooded | 1 | Stream 1 | Stream 1 was delineated within the mapped NWI feature. The completed HHEI and QHEI data forms for this stream are provided in Appendix D. Representative photographs are available in Appendix C. |

## 3.3 STREAMS

Stantec completed field surveys for streams (waterways) within the Project area on April 19, 2023, and August 6, 2025. One unnamed intermittent (Stream 1) was identified within the Project area. Figure 2 (Appendix A) shows the location of the stream identified by Stantec within the Project area and representative photographs of the stream are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed HHEI and QHEI data forms for Stream 1 are included in Appendix D. Information regarding the identified stream is provided in Table 3.

**Table 3. Summary of Stream Resources Found within the South Kenton Station Expansion Project Area, Hardin County, Ohio**

| Stream ID | Location | | Stream Type | Stream Name[1] | Delineated Length (feet) | Bankfull Width (feet) | OHWM Width (feet) | Field Evaluation | | | Ohio EPA 401 Eligibility | Stream Crossing? | Proposed Impacts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Latitude | Longitude | | | | | | Method | Score[2,3] | Category/ Rating/ OAC Use Designation[2,3,4] | | | Fill Type | Area (acre) |
| Stream 1 | 40.623549 | -83.579418 | Intermittent | UNT to Scioto River | 250 | 5 | 2 | HHEI/ QHEI | 71/44.5 | Class III PHW/Fair | Eligible | TBD[5] | TBD[5] | TBD[5] |
| | | | | **TOTAL** | **250** | | | | | | | | **TOTAL** | TBD[5] |

[1]UNT = Unnamed Tributary
[2]Based on the designated use evaluation presented in the Field Methods for Evaluating Primary Headwater Habitat Streams in Ohio, Version 4.0 (OEPA 2020).
[3]Based on the designated use evaluation presented in the Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (OEPA 2006).
[4]Based on Ohio Administrative Code (OAC) 3745-1-16.
[5]TBD – To be determined. Impact information and stream crossing information is unknown at this time.

## 3.4 OPEN WATERS

No open water features (ponds) were identified within the Project area during the field surveys that took place on April 19, 2023, and August 6, 2025.

## 3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

**Table 4. Summary of Potential Federally Listed and Ohio State-Listed Species within the South Kenton Station Expansion Project Area, Hardin County, Ohio**

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| **Reptiles** | | | | | | |
| Eastern Massasauga/*Sistrurus catenatus* | E | T | Habitats range from sphagnum bogs, fens, swamps, marshes, shrub-dominated peatlands, wet meadows, and floodplains to dry woodlands; this snake prefers seasonal wetlands with a mixture of open grass-sedge areas and short closed canopy (edge situations) (NatureServe 2023). | No potentially suitable habitat (large areas of wet meadows, bogs, fens, and marshes) was observed within the Project area. | **ODNR** – The Project is within the range of the eastern massasauga. The ODNR 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 ODNR recommends that a presence/absence survey be conducted or an avoidance/minimization plan be developed and implemented by the approved herpetologist.<br><br>**USFWS** - Due to the project type, size, and location, we do not anticipate adverse effects to this species. | No potentially suitable habitat (large areas of wet meadows, bogs, fens, and marshes) was observed within the Project area. However, the ODNR 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 ODNR recommends that a presence/absence survey be conducted or an avoidance/minimization plan be developed and implemented by the approved herpetologist. |
| **Fish** | | | | | | |
| Least Darter/*Etheostoma microperca* | SOC | N/A | Habitat includes quiet, vegetated lakes, headwaters, creeks, and small rivers, where the species usually occurs over mud and sand. The least darter inhabits weedy portions of lakes and of clear streams with sluggish flow (NatureServe 2023). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** – ODNR has records of the least darter within one mile of Project area. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| **Mussels** | | | | | | |
| Elktoe/*Alasmidonta marginata* | SOC | N/A | Although it occurs in large to medium sized streams, it is more typical of smaller streams. Habitat often includes small streams with good current and sand or gravel bottoms at depths of several inches to two feet (NatureServe 2023). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** – ODNR has records of the elktoe within one mile of Project area. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| Rainbow/*Villosa iris* | SOC | N/A | This mussel inhabits small streams, living within and below riffles on a sand, gravel or mud bottom in water less than a meter deep (WDNR 2022). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** – ODNR has records of the rainbow within one mile of Project area. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| Pondhorn/*Uniomerus tetralasmus* | T | N/A | This species occurs in fine gravel in moderate current. It may be encountered in shallow, quiet, or slow-moving water at depths seldom exceeding two feet. This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is typically found buried in a substrate of fine sand and mud in shallow sloughs and ditches, and it is a species tolerant of adverse habitat conditions, surviving for periods of weeks or even months buried in the bottoms or banks of dried-up ponds (Parmalee and Bogan 1998; NatureServe 2023). | No potentially suitable habitat (perennial streams and ditches; ponds) was observed within the Project area. | **ODNR** – The Project area is within the range of the pondhorn mussel. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams and ditches; ponds) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| Purple Lilliput/*Toxolasma lividus* | E | N/A | This species can inhabit fine-particle substrates and sand, gravel, or cobbles and boulders in riffles or flats immediately above riffles. This species is reported from the headwaters of small to medium sized rivers (NatureServe 2023). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** - The Project area is within the range of the purple liliput mussel. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| Rayed Bean/*Villosa fabalis* | E | E | Habitat includes gravel or sandy substrates, especially in areas of thick roots of aquatic plants and increased substrate stability (NatureServe 2023; 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). | No potentially suitable habitat (perennial streams) was observed within the Project area. | ODNR – The Project area is within the range of the rayed bean mussel. The ODNR 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 aquatic species.<br><br>**USFWS** – Due to the project type, size, and location, we do not anticipate adverse effects to this species. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| Clubshell/*Pleurobema clava* | E | E | The clubshell occurs in medium to small rivers and streams, containing clean, coarse sand and cobble substrates (USFWS 1994). The clubshell is usually found within the current, where it may live several inches underneath the surface. It is most common in the downstream ends of riffles and islands (Watters et al. 2009). The clubshell is mostly considered an Ohio River system species, including the Tennessee, Cumberland, Kanawha, and Wabash River drainages. However, it is also found within the Maumee River system of Lake Erie. Although historically the clubshell was originally described as occurring within Lake Erie, only one record of its occurrence there has been found (Watters et al. 2009). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** – The Project area is within the range of the clubshell mussel. The ODNR 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 aquatic species.<br><br>**USFWS** - Due to the project type, size, and location, we do not anticipate adverse effects to this species. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| Creek Heelsplitter/*Lasmigona compressa* | SOC | N/A | This species occurs principally in rivers and streams of various sizes, even in very small creeks and is rare in lakes. It is found on substrates of gravel, sand, or mud (NatureServe 2023). | No potentially suitable habitat (perennial streams) was observed within the Project area. | **ODNR** – ODNR has records of the creek heelsplitter within one mile of Project area. The ODNR 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 aquatic species.<br><br>**USFWS** – No comments received. | No potentially suitable habitat (perennial streams) was observed within the Project area. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable. |
| **Mammals** | | | | | | |
| 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 2023b). 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). | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable roosting habitat was observed within the Project area. No potential bat hibernacula were observed within the Project area. | **ODNR** – The entire state of Ohio is within the range of the Indiana bat. The ODNR recommends tree cutting only occurs from October 1 through 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 if possible. In addition, ODNR recommends a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the Project area, please send this information to the ODNR for project recommendations.<br><br>Additionally, the portion of the South Kenton-North Waldo 138 kV Line Rebuild Project west of Township Road 199 in Hardin County is within the vicinity of records for the Indiana bat. Because | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable summer roosting habitat was observed within the Project area. Additionally, AEP intends to clear trees between October 1 and March 31. If any summer tree clearing is required, AEP will proceed accordingly with agency recommendations to avoid impacts to this species. Additionally, a desktop bat hibernacula habitat assessment was completed by Stantec. No abandoned underground mines were identified within 0.25 miles of the Project area as a result of the assessment, but an area of karst geology was identified that overlaps the entirety of the Project area (Appendix A, Figure 4). No mine openings, caves, or any other potentially suitable hibernacula were observed within the Project area during the field surveys completed by Stantec.<br><br>**Avoidance Dates: April 1 – September 30** |

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| | | | | | presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with the ODNR.<br><br>**USFWS** – The Indiana bat occurs throughout the State of Ohio. Should the proposed project site contain trees ≥3 inches dbh, USFWS recommends avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with the USFWS 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, the USFWS recommends removal of any trees ≥3 inches dbh only occur between October 1 and March 31. | |
| Northern Long-eared Bat/*Myotis septentrionalis* | E | E | The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2020). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010). | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable roosting habitat was observed within the Project area. No potential bat hibernacula were observed within the Project area. | **ODNR** – The entire state of Ohio is within the range of the northern long-eared bat. The ODNR recommends tree cutting only occurs from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 if possible. In addition, The ODNR recommends a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the Project area, please send this information to the ODNR for project recommendations.<br><br>**USFWS** - The northern long-eared bat occurs throughout the state of Ohio. Should the proposed project site contain trees ≥3 inches dbh, USFWS recommends avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with USFWS is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable summer roosting habitat was observed within the Project area. Additionally, AEP intends to clear trees between October 1 and March 31. If any summer tree clearing is required, AEP will proceed accordingly with agency recommendations to avoid impacts to this species. Additionally, a desktop bat hibernacula habitat assessment was completed by Stantec. No abandoned underground mines were identified within 0.25 miles of the Project area as a result of the assessment, but an area of karst geology was identified that overlaps the entirety of the Project area (Appendix A, Figure 4). No mine openings, caves, or any other potentially suitable hibernacula were observed within the Project area during the field surveys completed by Stantec.<br><br>**Avoidance Dates: April 1 – September 30** |

Results
August 15, 2025

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| | | | | | trees ≥3 inches dbh cannot be avoided, USFWS recommends removal of any trees ≥3 inches dbh only occur between October 1 and March 31. | |
| Little Brown Bat/*Myotis lucifugus* | E | N/A | The little brown bat is found throughout Ohio. This species seems to prefer to forage over water but also forages among trees in rather open areas (Harvey et al. 1999). During summer, it typically inhabits buildings, attics, church belfries, barns and outbuildings, and occasionally more natural habitats such as sloughing bark of a dead tree. During summer, two types of roosts are utilized: day roosts and night roosts. Day roosts are the maternity colony roost, while little brown bats often roost in other areas where they rest and congregate to digest their food in between foraging bouts. In Ohio, this species typically utilizes caves and mines as hibernacula, although at least one hibernaculum was found to be located in an attic of an old building (Brack et al. 2010). | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable roosting habitat was observed within the Project area. No potential bat hibernacula were observed within the Project area. | **ODNR** – The entire state of Ohio is within the range of the little brown bat. The ODNR recommends tree cutting only occurs from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 if possible. In addition, ODNR recommends a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the Project area, please send this information to Eileen Wyza for project recommendations.<br><br>**USFWS** – No comments received. | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable summer roosting habitat was observed within the Project area. Additionally, AEP intends to clear trees between October 1 and March 31. If any summer tree clearing is required, AEP will proceed accordingly with agency recommendations to avoid impacts to this species. Additionally, a desktop bat hibernacula habitat assessment was completed by Stantec. No abandoned underground mines were identified within 0.25 miles of the Project area as a result of the assessment, but an area of karst geology was identified that overlaps the entirety of the Project area (Appendix A, Figure 4). No mine openings, caves, or any other potentially suitable hibernacula were observed within the Project area during the field surveys completed by Stantec.<br><br>**Avoidance Dates: April 1 – September 30** |
| Tri-colored Bat/*Perimyotis subflavus* | E | PE | The tricolored bat is found throughout Ohio. This species has been found to forage above and within a variety of habitats, including woodlands, agricultural fields, grassy areas, and over streamside vegetation (Sparks et al. 2011). Maternity colonies have often been found within clusters of dead leaves, hanging in trees. Maternity colonies have also been found in or on buildings. Little is known of male tri-colored bats in summer, but it is thought that they are probably solitary and spend their days in similar situations, as well as crevices, caves and mines (Brack et al. 2010). In Ohio, this species typically utilizes caves and mines as hibernacula, utilizing a variety of situations, including very cold areas near cave entrances to deeper passages that seem to be too warm for other species of bats (Brack et al. 2010). | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable roosting habitat was observed within the Project area. No potential bat hibernacula were observed within the Project area. | **ODNR** – The entire state of Ohio is within the range of the tri-colored bat. The ODNR recommends tree cutting only occurs from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 if possible. In addition, ODNR recommends a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if there are potential hibernacula present within the Project area. If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the Project area, please send this information to the ODNR for project recommendations.<br><br>**USFWS** - This bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased | One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable summer roosting habitat was observed within the Project area. Additionally, AEP intends to clear trees between October 1 and March 31. If any summer tree clearing is required, AEP will proceed accordingly with agency recommendations to avoid impacts to this species. Additionally, a desktop bat hibernacula habitat assessment was completed by Stantec. No abandoned underground mines were identified within 0.25 miles of the Project area as a result of the assessment, but an area of karst geology was identified that overlaps the entirety of the Project area (Appendix A, Figure 4). No mine openings, caves, or any other potentially suitable hibernacula were observed within the Project area during the field surveys completed by Stantec.<br><br>**Avoidance Dates: April 1 – September 30** |

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| | | | | | significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tri-colored bat. | |
| **Birds** | | | | | | |
| Northern Harrier/*Circus hudsonius* | E | N/A | Harriers hunt low over grasslands, with wings held in a distinctive dihedral (V-shape). This is a common migrant and winter species; nesters are much rarer, although they occasionally breed in large marshes and grasslands (ODNR 2018). Northern harriers appear to be associated with large tracts of undisturbed habitat. They are uncommon in blocks of contiguous grassland less than 100 hectares (Slater and Rock 2005). | No suitable nesting habitat (large marshes and grasslands) was observed within the Project area. | **ODNR** – The Project is within the range of the northern harrier. This is a common migrant and winter species in Ohio. Nesters are much rarer, although they occasionally nest in loose colonies in large marshes and grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species.<br><br>**USFWS** – No comments received. | Northern harriers require large tracts of wetlands and/or grasslands that are 100 hectares (247 acres) or more for suitable breeding/nesting habitat (Slater and Rock 2005). No suitable nesting habitat (large tracts of wetlands and/or grasslands) were observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable. |
| Upland Sandpiper/*Bartramia longicauda* | E | N/A | Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP) (ODNR 2018). Upland sandpipers are primarily restricted to extensive, open tracts of short grassland habitats. These habitats also include edges of highway rights-of-way and airfields. (NatureServe 2023). | No potentially suitable nesting habitat (large areas of pastures, hayfields, or other grassland habitats) was observed within the Project area. | **ODNR** - The Project is within the range of the upland sandpiper. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this type of habitat will not be impacted, the project is not likely to impact this species.<br><br>**USFWS** - No comments received. | No potentially suitable nesting habitat was observed within the Project area. The tracts of grassland/hayfield/pasture habitats within the Project area are likely too small to attract nesting upland sandpipers. Therefore, no impacts are anticipated and avoidance dates are not applicable. |
| Trumpeter Swan/*Cygnus buccinator* | T | N/A | The trumpeter swan is found in ponds, lakes, and marshes, breeding in areas of reeds, sedges or similar emergent vegetation, primarily on freshwater, occasionally in brackish situations, wintering on open ponds, lakes and sheltered bays and estuaries (NatureServe 2023). | No suitable nesting habitat (large marshes and lakes) was observed within the Project area. | **ODNR** – The Project is within the range of the trumpeter swan. Trumpeter swans prefer large marshes and lakes ranging in size from 40 to 150 acres. They like shallow wetlands one to three feet deep with a diverse mix of plenty of emergent and submergent vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through June 15. If this habitat | No suitable nesting habitat was observed within the Project area. Therefore, no impacts are anticipated and avoidance dates are not applicable. |

Results
August 15, 2025

| Common Name/ Scientific Name | State Listed Status[1,2] | Federally Listed Status[1,3] | Typical Habitat | Habitat Observed | Agency Comments (Appendix B) | Potential Impacts and Avoidance Dates |
|---|---|---|---|---|---|---|
| | | | | | will not be impacted, this Project is not likely to have an impact on this species.<br><br>**USFWS** - No comments received. | |

[1]E=Endangered; T=Threatened; PE=Proposed Endangered; SOC=Species of Concern; N/A=Not Applicable
[2]According to ODNR, State Listed Wildlife and Plant Species by County (ODNR 2023a).
[3]According to the USFWS Information for Planning and Consultation website (USFWS 2023a).

# 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 April 19, 2023, and August 6, 2025. No wetlands or open waters were identified within the Project area. One intermittent stream was identified within the Project area, an unnamed tributary to the Scioto River. See Table 3 for more information regarding the stream identified within the Project area.

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

An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on April 19, 2023. The ODNR Office of Real Estate response letter dated May 19, 2023 (Appendix B) states that the natural heritage database has records of the following species within one mile of the Project area: least darter, elktoe, rainbow, and creek heelsplitter. However, there is no in-water work proposed in a perennial stream and therefore, this project is not likely to impact these species. Each of these species are addressed in more detail in Table 4.

In addition, the ODNR stated that the entire state of Ohio is within the range of the Indiana bat, northern long-eared bat, little brown bat, and the tricolored bat. During the spring and summer (April 1 through September 30), these bat species predominantly roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. The ODNR recommends tree cutting only occurs from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with dbh ≥ 20 if possible.

The ODNR also recommended that a desktop habitat assessment be conducted, followed by a field assessment if needed, to determine if there are potential bat hibernacula present within 0.25 miles of the Project area. Stantec completed a desktop habitat desktop assessment in accordance with the 2023 Range-wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2023b) utilizing available ODNR websites, including data on known abandoned or active mines (ODNR 2023b) and locations of known or suspected karst geology (ODNR 2023c). No abandoned or active underground mines were identified within the Project area or within 0.25 miles of it as part of the desktop assessment. The desktop assessment identified an area of karst geology that encompasses the entirety of the Project area (Figure 4, Appendix A). However, no underground openings, caves, or any other potentially suitable bat hibernacula were observed within the Project area during the field surveys completed by Stantec. Therefore, no impacts to potential bat hibernacula are anticipated.

Additionally, according to the ODNR, the portion of the South Kenton-North Waldo 138 kV Line Rebuild Project located south of County Road 130 in Hardin County is within the vicinity of known

records of the Indiana bat. Because presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with the ODNR.

One potentially suitable roost tree was identified within the Project area (Figure 3). No other potentially suitable summer roosting habitat or hibernacula for the Indiana bat, northern long-eared bat, tri-colored bat, and little brown bat was identified within the Project area. Additionally, AEP intends to clear trees between October 1 and March 31, as applicable. If any summer tree clearing is required, AEP will proceed with agency recommendations to avoid impacts to these bat species.

The Project is within the range of the northern harrier, a state endangered bird. Northern harriers require large tracts of wetlands and/or grasslands that are 100 hectares (247 acres) or more for suitable breeding/nesting habitat (Slater and Rock 2005). No suitable nesting habitat (large tracts of wetlands and/or grasslands) were observed within the Project area. Therefore, no impacts are anticipated, and avoidance dates are not applicable.

The Project is within the range of the state endangered and federally threatened eastern massasauga. ODNR 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 ODNR recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed and implemented by the approved herpetologist. No suitable habitat for the eastern massasauga (large areas of wet meadows, bogs, fens, and marshes) was observed by Stantec within the Project area.

The Project is within the range of the trumpeter swan. No potentially suitable nesting habitat (large marshes and lakes) was observed within the Project area. Therefore, this project is not likely to impact this species.

The Project is within the range of the state endangered and federally endangered clubshell and rayed bean mussels, state endangered purple lilliput mussel, and the state threatened pondhorn mussel. However, as stated, no in-water work is proposed in a perennial stream. Therefore, this Project is not likely to impact these species.

A technical assistance request letter was submitted to the USFWS on April 19, 2023. The USFWS response letter dated June 12, 2023, recommends that impacts to wetland and other water resources be avoided or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation (Appendix B).

According to the USFWS response letter, all projects in the state of Ohio lie within the range of the federally endangered Indiana bat, the federally endangered northern long-eared bat, and the federally proposed endangered tri-colored bat. In Ohio, presence of these species is assumed wherever suitable habitat occurs unless a presence/probable absence survey has been performed to document probable absence. The USFWS response letter states that, should the

Project site contain trees ≥3 inches dbh, the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, the USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommended that summer presence/probable absence surveys be conducted between June 1 and August 15. AEP intends to clear trees between October 1 and March 31, as applicable. If any summer tree clearing is required, AEP will proceed with agency recommendations to avoid impacts to these bat species.

The USFWS stated that due to the Project type, size, and location they do not anticipate adverse effects to any other federally endangered, threatened, or proposed species or proposed or designated critical habitat.

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# Appendix A FIGURES

## A.1 FIGURE 1 – PROJECT LOCATION MAP

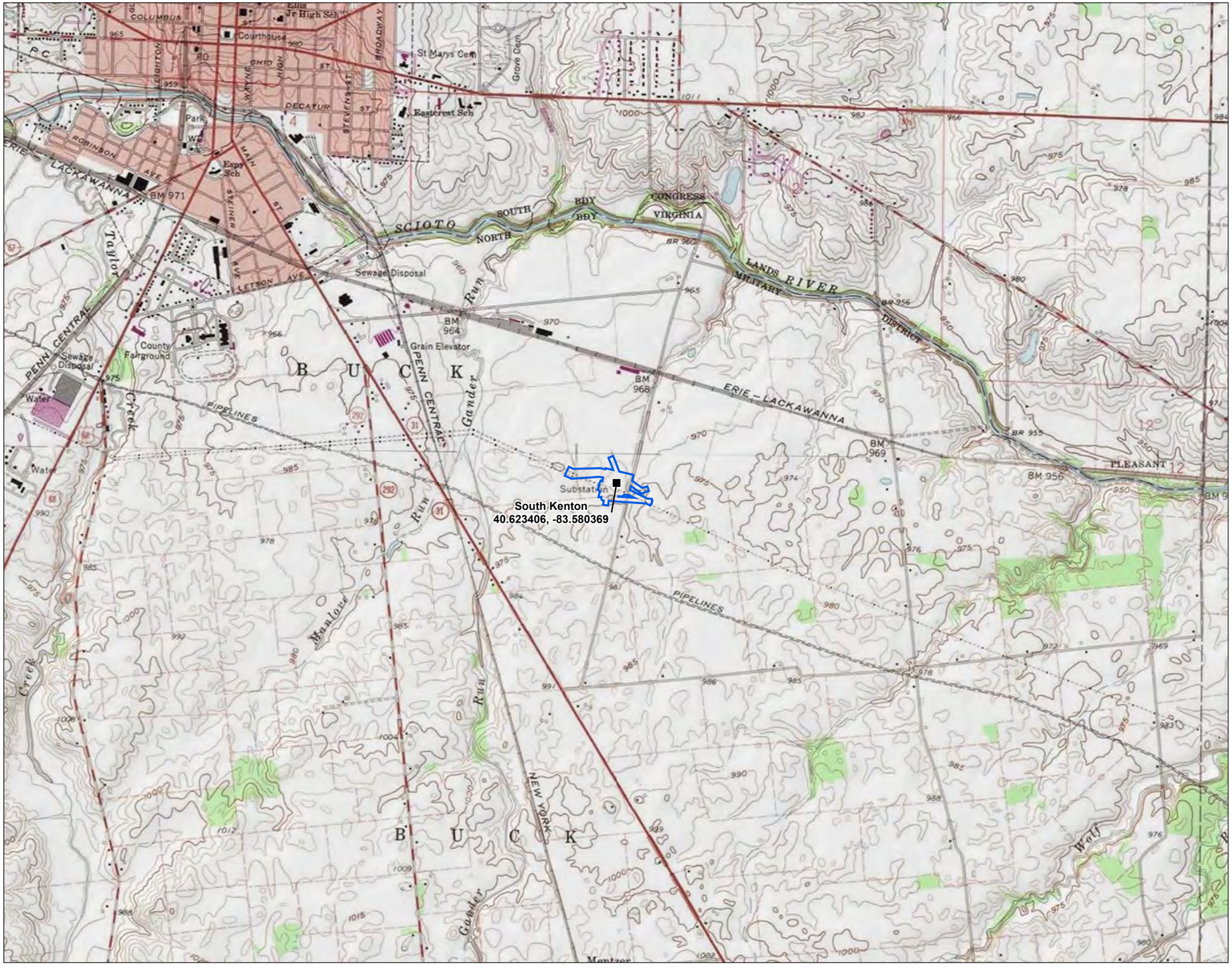



*Figure No.*

**1**

*Title*

## Project Location Map

*Client/Project* 239001092

AEP Ohio Transmission Company, Inc.
South Kenton Station Expansion Project

*Project Location*
T. of Buck,
Hardin Co., OH

Prepared by MEK on 2025-08-13
TR by JD on 2025-08-13
IR by DJG on 2025-08-13

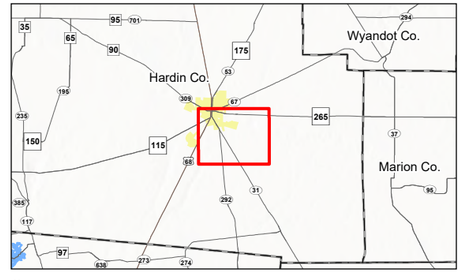
N

0 1,000 2,000 Feet

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

Legend

- Existing Substation
- Project Area




***Notes***

**1.** Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
**2.** Data Sources: Stantec, AEP, Esri, USGS, USCB
**3.** Background: USGS 7.5' Topographic Quadrangles: Kenton (1961), Mt Victory (1961)

Stantec

# A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP


*Figure No.*
**2**

*Title*
## Wetland and Waterbody Delineation Map

*Client/Project* 239001092
AEP Ohio Transmission Company, Inc.
South Kenton Station Expansion Project

*Project Location*
T. of Buck,
Hardin Co., OH

Prepared by MEK on 2025-08-13
TR by JD on 2025-08-13
IR by DJG on 2025-08-13

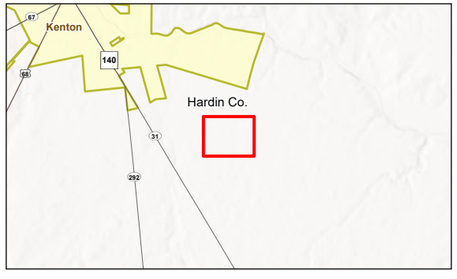
N

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

Legend
- Existing Substation
- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Existing Transmission Line
- Existing Transmission Line to be Removed
- Proposed Transmission Line
- Project Area
- Photo Location
- Existing Culvert
- Wetland Determination Sample Point
- Field Delineated Waterway
- Approximate Waterway
- Approximate Upland Drainage Feature
- 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 North FIPS 3401 Feet
**2.** Data Sources: Stantec, AEP, Esri, USGS, FEMA, USFWS, OGRIP, USCB
**3.** Background: NAIP 2023

Stantec

# A.3 FIGURE 3 – HABITAT ASSESSMENT MAP

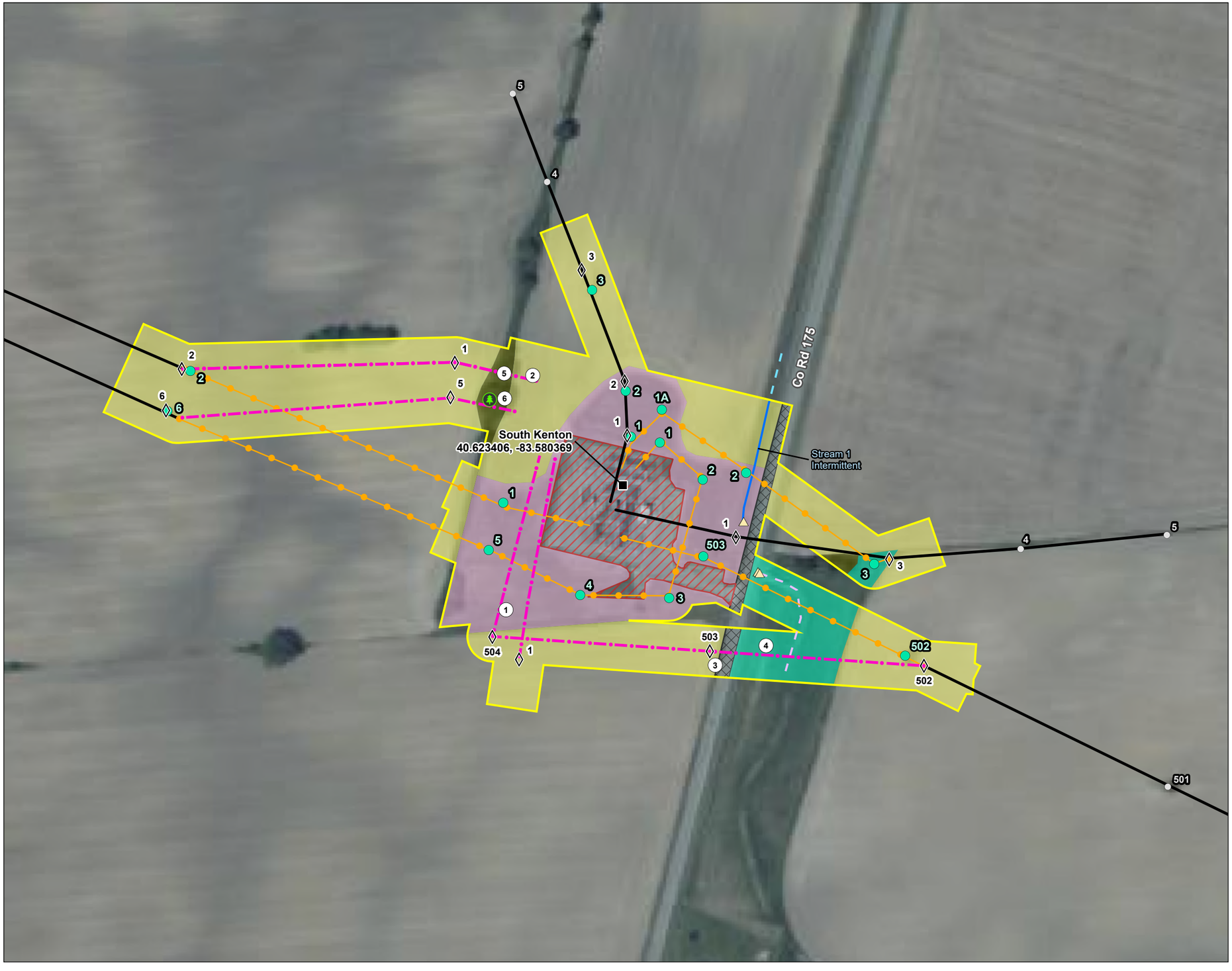



*Figure No.*
**3**

*Title*
## Habitat Assessment Map

*Client/Project* 239001092
AEP Ohio Transmission Company, Inc.
South Kenton Station Expansion Project

*Project Location*
T. of Buck,
Hardin Co., OH

Prepared by MEK on 2025-08-13
TR by JD on 2025-08-13
IR by DJG on 2025-08-13

N

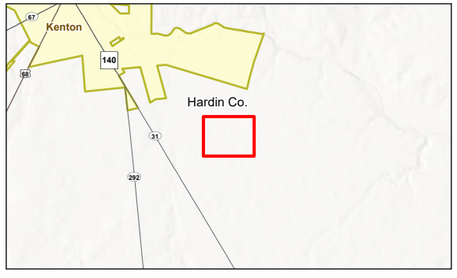
0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend

- Existing Substation
- Existing Structure
- Existing Structure to be Removed
- Proposed Structure
- Existing Transmission Line
- Existing Transmission Line to be Removed
- Proposed Transmission Line
- Project Area
- Photo Location
- Existing Culvert
- Potential Roost Tree
- Field Delineated Waterway
- Approximate Waterway
- Approximate Upland Drainage Feature

Habitat Area

- Mixed Early Successional/Second Growth Deciduous Forest
- Agricultural Land
- New Field
- Maintained Lawn
- Existing Road
- Industrial Land




***Notes***
**1.** Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
**2.** Data Sources: Stantec, AEP, Esri, USGS, OGRIP, USCB
**3.** Background: NAIP 2023

Stantec

# A.4 FIGURE 4 – BAT HIBERNACULA DESKTOP STUDY MAP

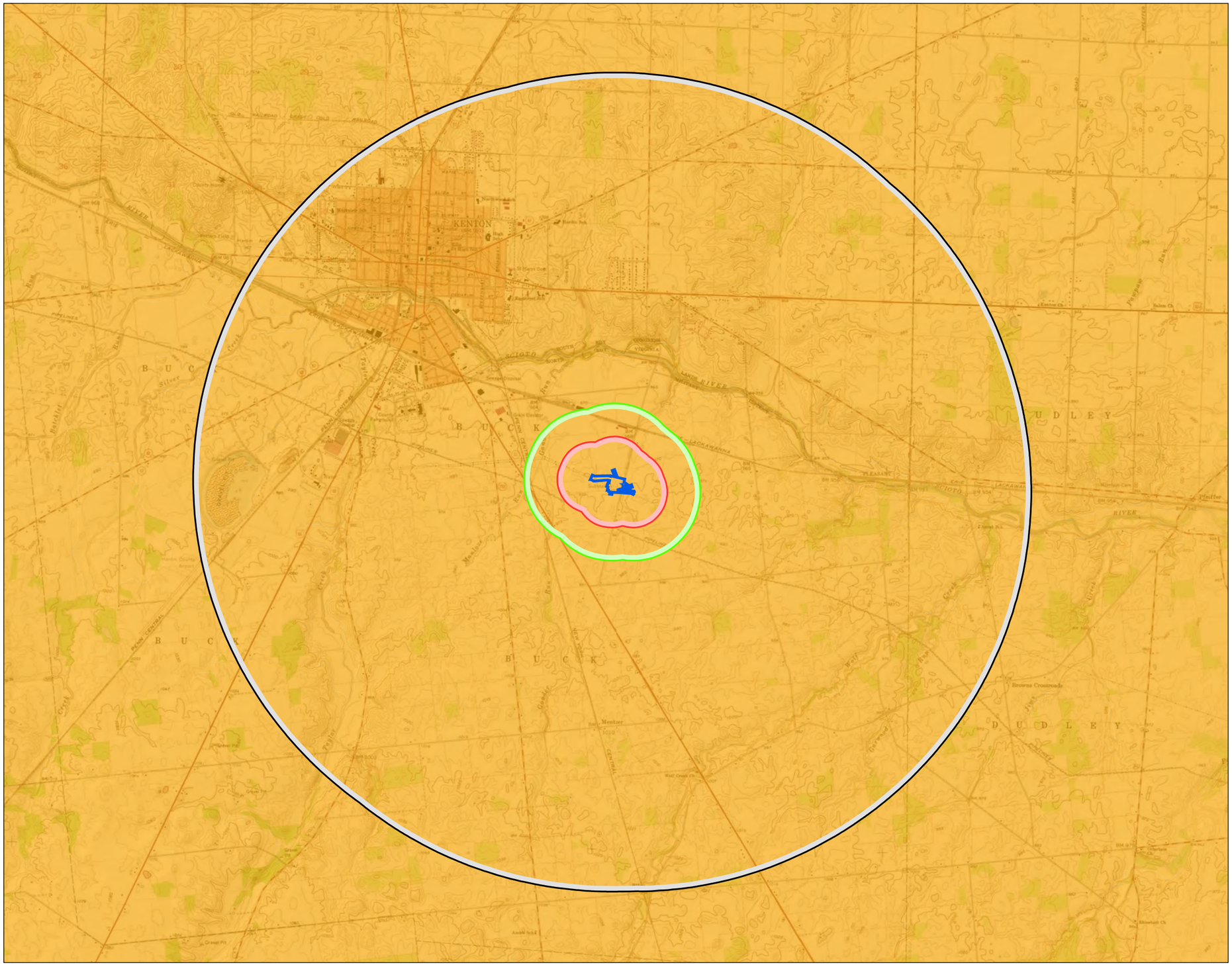



*Figure No.*
**4**

*Title*
## Bat Hibernacula Desktop Study Map

*Client/Project* 239001092
AEP Ohio Transmission Company, Inc.
South Kenton Station Expansion Project

*Project Location*
T. of Buck,
Hardin Co., OH

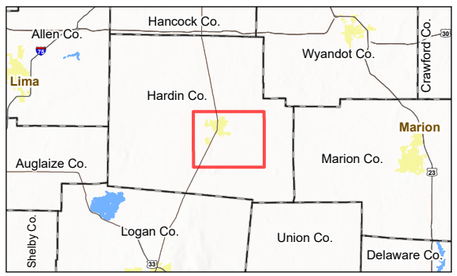
Prepared by MEK on 2025-08-13
TR by JD on 2025-08-13
IR by DJG on 2025-08-13

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
- Karst Feature*
- Area of Karst Geology
- Mine Opening*
- Underground Mine*

*No features within data frame




***Notes***
**1.** Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
**2.** Data Sources: Stantec, AEP, Esri, USGS, ODNR, USCB
**3.** Background: USGS 30' x 60' Topographic Quadrangles - Marion, OH (1986)

Stantec

# Appendix B 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*

May 19, 2023

Daniel Godec
Stantec Consulting Services, Inc.
10200 Alliance Road, Suite 300
Cincinnati OH 45242

**Re:** 23-0437; South Kenton-North Waldo 138 kV Line Rebuild

**Project:** The proposed project involves rebuilding a 138 kV Line from Kenton to North Waldo.

**Location:** The proposed project is located in Buck & Dudley Townships of Hardin County, and Bowling Green, Green Camp, Pleasant, & Richland Townships of Marion 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 within one mile of the project area:

Least Darter (*Etheostoma microperca*), SC
Elktoe (*Alasmidonta marginata*), SC
Creek Heelsplitter (*Lasmigona compressa*), SC
Rainbow (*Villosa iris*), SC

The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Conservation status abbreviations are as follows: 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 = federally endangered, and FT = federally threatened.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

**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 portion of the project west of Township Road 199 in Hardin County is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in this area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, 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 endangered 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 bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. The DOW recommends tree cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. However, if trees are present within this area, (outside of the area delineated above) 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.

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 & NORTHERN LONG-EARED 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 Eileen Wyza, 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 clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the purple lilliput (*Toxolasma lividus*), a state endangered mussel, and the pondhorn (*Uniomerus tetralasmus*), a state threatened mussel. This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), 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. 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, 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. If there is no in-water work proposed, impacts to mussels are not likely.

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 aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. 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. A list of approved herpetologists has been provided for your convenience.

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, the project is not likely to impact this species.

The project is within the range of the trumpeter swan (*Cygnus buccinator*), a state threatened bird. Trumpeter swans prefer large marshes and lakes ranging in size from 40 to 150 acres. They like shallow wetlands one to three feet deep with a diverse mix of plenty of emergent and submergent vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through June 15. If this habitat will not be impacted, this project is not likely to have an impact on this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this type of habitat will not be impacted, the 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.

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

# United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

June 12, 2023

Project Code: 2023-0068762

Dear Mr. Godec:

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, endangered, and proposed 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 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.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

*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.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared 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, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

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
Eileen Wyza, ODNR-DOW

# Appendix C REPRESENTATIVE PHOTOGRAPHS

## C.1 WETLAND AND WATERBODY PHOTOGRAPHS


Photo Location 1. View of upland (agricultural land and maintained lawn habitat) at wetland determination point SP01. Photograph taken facing north.


Photo Location 1. View of upland (agricultural land and maintained lawn habitat) at wetland determination point SP01. Photograph taken facing south.


Photo Location 2. View of upland (maintained lawn habitat and industrial land) at wetland determination point SP02. Photograph taken facing east.


Photo Location 2. View of upland (maintained lawn habitat) at wetland determination point SP02. Photograph taken facing west.


Photo Location 3. View of upland (maintained lawn and agricultural land habitat) at wetland determination point SP03. Photograph taken facing north.


Photo Location 3. View of upland (maintained lawn habitat) at wetland determination point SP03. Photograph taken facing south.


Photo Location 4. View of Stream 1. Photograph taken facing upstream/north.


Photo Location 4. View of Stream 1. Photograph taken facing downstream/south.


Photo Location 4. View of substrates of Stream 1.


Photo Location 5. View of upland drainage feature. Photograph taken facing west.


Photo Location 6. Representative view of existing culvert. Photograph taken facing east.


Photo Location 7. View of upland (new field habitat and mixed early successional/second growth deciduous forest) at wetland determination point SP04. Photograph taken facing north.


Photo Location 7. View of upland (new field habitat) at wetland determination point SP04. Photograph taken facing south.


Photo Location 8. View of upland (new field habitat) at wetland determination point SP05. Photograph taken facing north.

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AEP Ohio Transmission Company, Inc.
South Kenton Station Expansion Project
Hardin County, Ohio


Photo Location 8. View of upland (new field habitat) at wetland determination point SP05. Photograph taken facing south.

# C.2 HABITAT PHOTOGRAPHS


Photo Location 1. Representative view of industrial land (South Kenton Station) and maintained lawn within the Project area. Photograph taken facing northeast.


Photo Location 2. Representative view of agricultural land within the Project area. Photograph taken facing south.


Photo Location 3. Representative view of existing road within the Project area. Photograph taken facing east.


Photo Location 4. Representative view of new field habitat within the Project area. Photograph taken facing east.


Photo Location 5. Representative view of mixed early successional/second growth deciduous forest habitat within the Project area. Photograph taken facing east.

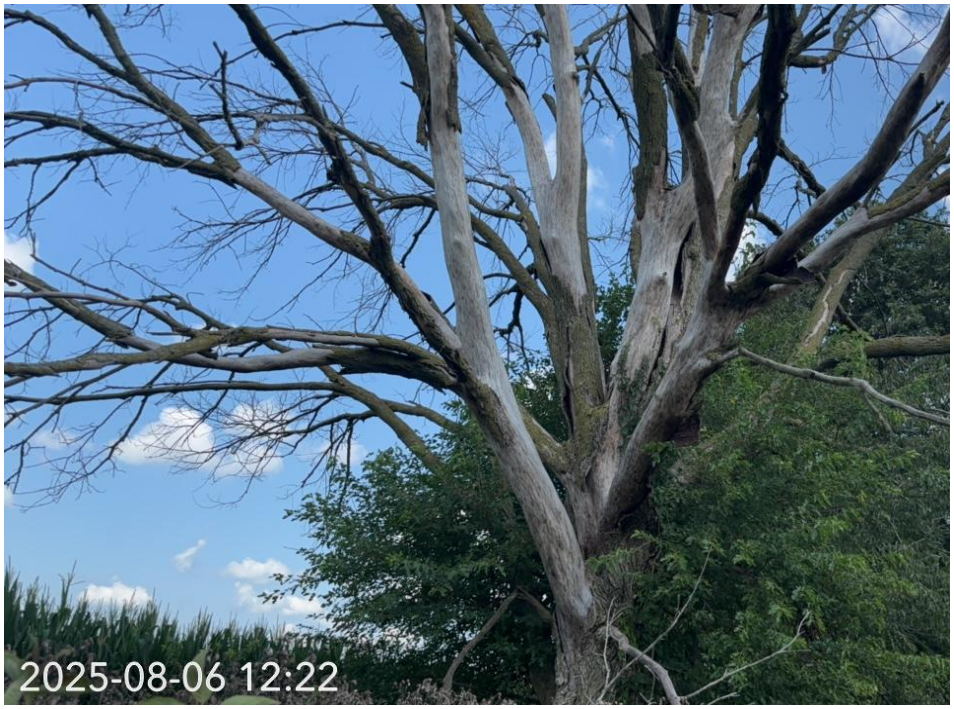



Photo Location 6. Representative view of a potential bat roost tree observed within the Project area. Photograph taken facing northwest.

# Appendix D DATA FORMS

## D.1 WETLAND DETERMINATION DATA FORMS

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

| | | | |
|---|---|---|---|
| Project/Site: | South Kenton Station Expansion Project | Stantec Project #: | 239001092 |
| Applicant: | AEP Ohio Transmission Company Inc. | | |
| Investigator #1: | Aaron Kwolek | Investigator #2: | Savannah Pheanis |
| Soil Unit: | PkA - Pewamo silty clay loam, 0 to 1 percent slopes | NWI/WWI Classification: | N/A |
| Landform: | Plain | Local Relief: | None |
| Slope (%): | 0 | Latitude: 40.623296 | Longitude: -83.581140 Datum: -- |

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

| | |
|---|---|
| Date: | 04/19/23 |
| County: | Hardin |
| State: | Ohio |
| Wetland ID: | N/A |
| Sample Point: | **SP01** |
| Community ID: | UPL |
| Section: | -- |
| Township: | -- |
| Range: | -- Dir: -- |

## SUMMARY OF FINDINGS

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | ☐ Yes ☑ No | Hydric Soils Present? | ☐ Yes ☑ No |
| Wetland Hydrology Present? | ☐ Yes ☑ No | Is This Sampling Point Within A Wetland? | ☐ **Yes** ☑ **No** |

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators** (Check here if indicators are not present ☑)

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

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | ☐ Yes ☑ No | Depth: | (in.) |
| Water Table Present? | ☐ Yes ☑ No | Depth: | (in.) |
| Saturation Present? | ☐ Yes ☑ No | Depth: | (in.) |

**Wetland Hydrology Present?** ☐ Yes ☑ No

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

Remarks:

## SOILS

Map Unit Name: PkA - Pewamo silty clay loam, 0 to 1 percent slopes

**Profile Description** (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

| Top Depth | Bottom Depth | Horizon | Matrix Color (Moist) | Matrix % | Redox Features Color (Moist) | Redox Features % | Redox Features Type | Redox Features Location | Texture (e.g. clay, sand, loam) |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 16 | 1 | 10YR 4/4 | 100 | -- -- | -- | -- | -- | silty clay loam |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- -- | -- | -- | -- | -- |

**NRCS Hydric Soil Field Indicators** (check here if indicators are not present ☑)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

**Indicators for Problematic Soils** [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

**Restrictive Layer (If Observed)** Type: Depth:

**Hydric Soil Present?** ☐ Yes ☑ No

Remarks:

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

Project/Site: South Kenton Station Expansion Project | Wetland ID: N/A | Sample Point: SP01

## VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

| | Species Name | % Cover | Dominant | Ind.Status |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Sapling/Shrub Stratum (Plot size: 15 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Herb Stratum (Plot size: 5 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | *Festuca arundinacea* | 50 | Y | UPL |
| 2. | *Taraxacum officinale* | 10 | N | FACU |
| 3. | *Plantago lanceolata* | 10 | N | FACU |
| 4. | *Achillea millefolium* | 10 | N | FACU |
| 5. | *Fragaria vesca* | 10 | N | UPL |
| 6 | *Trifolium repens* | 10 | N | FACU |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| 11. | -- | -- | -- | -- |
| 12. | -- | -- | -- | -- |
| 13. | -- | -- | -- | -- |
| 14. | -- | -- | -- | -- |
| 15. | -- | -- | -- | -- |
| | Total Cover = | 100 | | |

Woody Vine Stratum (Plot size: 30 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Remarks:

### Dominance Test Worksheet

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

### Prevalence Index Worksheet

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL spp. | 0 | x 1 = | 0 |
| FACW spp. | 0 | x 2 = | 0 |
| FAC spp. | 0 | x 3 = | 0 |
| FACU spp. | 40 | x 4 = | 160 |
| UPL spp. | 60 | x 5 = | 300 |
| Total | 100 (A) | | 460 (B) |

Prevalence Index = B/A = *4.600*

### Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

### Definitions of Vegetation Strata:

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

**Sapling/Shrub -** Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

**Woody Vines -** All woody vines greater than 3.28 ft. in height.

**Hydrophytic Vegetation Present** ☐ Yes ☑ No

**Additional Remarks:**

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

| | | | |
|---|---|---|---|
| Project/Site: | South Kenton Station Expansion Project | Stantec Project #: | 239001092 |
| Applicant: | AEP Ohio Transmission Company Inc. | | |
| Investigator #1: | Tyler Gillette | Investigator #2: | Perry Gardiner |
| Soil Unit: | Pk: Pewano silty clay loam, 0-1% slopes | NWI/WWI Classification: | |
| Landform: | Terrace | Local Relief: | Convex |
| Slope (%): | 0 | Latitude: 40.61963 | Longitude: -83.581305 Datum: WGS84 |

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

| | |
|---|---|
| Date: | 04/19/23 |
| County: | Hardin |
| State: | Ohio |
| Wetland ID: | N/A |
| Sample Point: | **SP02** |
| Community ID: | UPL |
| Section: | -- |
| Township: | -- |
| Range: | -- Dir: -- |

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks: Upland within station property

## HYDROLOGY

**Wetland Hydrology Indicators** (Check here if indicators are not present ☑)

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

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | ☐ Yes | ☑ No | Depth: (in.) |
| Water Table Present? | ☐ Yes | ☑ No | Depth: (in.) |
| Saturation Present? | ☐ Yes | ☑ No | Depth: (in.) |

**Wetland Hydrology Present?** ☐ Yes ☑ No

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

Remarks:

## SOILS

Map Unit Name: Pk: Pewano silty clay loam, 0-1% slopes

**Profile Description** (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

| Top Depth | Bottom Depth | Horizon | Matrix Color (Moist) | | Matrix % | Redox Features Color (Moist) | | Redox Features % | Redox Features Type | Redox Features Location | Texture (e.g. clay, sand, loam) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 1 | 10YR | 4/3 | 100 | -- | -- | -- | -- | -- | silty clay loam |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**NRCS Hydric Soil Field Indicators** (check here if indicators are not present ☑)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

**Indicators for Problematic Soils** [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

**Restrictive Layer (If Observed)** Type: Depth:

**Hydric Soil Present?** ☐ Yes ☑ No

Remarks:

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

Project/Site: South Kenton Station Expansion Project | Wetland ID: N/A | Sample Point: SP02

## VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

| | Species Name | % Cover | Dominant | Ind.Status |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Sapling/Shrub Stratum (Plot size: 15 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Herb Stratum (Plot size: 5 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | *Taraxacum officinale* | 30 | Y | FACU |
| 2. | *Trifolium pratense* | 20 | Y | FACU |
| 3. | *Trifolium repens* | 10 | N | FACU |
| 4. | *Poa pratensis* | 40 | Y | FAC |
| 5. | -- | -- | -- | -- |
| 6 | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| 11. | -- | -- | -- | -- |
| 12. | -- | -- | -- | -- |
| 13. | -- | -- | -- | -- |
| 14. | -- | -- | -- | -- |
| 15. | -- | -- | -- | -- |
| | Total Cover = | 100 | | |

Woody Vine Stratum (Plot size: 30 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Remarks:

### Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***33%*** (A/B)

### Prevalence Index Worksheet

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL spp. | 0 | x 1 = | 0 |
| FACW spp. | 0 | x 2 = | 0 |
| FAC spp. | 40 | x 3 = | 120 |
| FACU spp. | 60 | x 4 = | 240 |
| UPL spp. | 0 | x 5 = | 0 |
| Total | 100 (A) | | 360 (B) |

Prevalence Index = B/A = ***3.600***

### Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

### Definitions of Vegetation Strata:

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

**Sapling/Shrub -** Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

**Woody Vines -** All woody vines greater than 3.28 ft. in height.

**Hydrophytic Vegetation Present** ☐ Yes ☑ No

**Additional Remarks:**

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

| | | | |
|---|---|---|---|
| Project/Site: | South Kenton Station Expansion Project | Stantec Project #: | 239001092 |
| Applicant: | AEP Ohio Transmission Company Inc. | | |
| Investigator #1: | Tyler Gillette | Investigator #2: | Perry Gardiner |
| Soil Unit: | Pk: Pewano silty clay loam, | NWI/WWI Classification: | |
| Landform: | Terrace | Local Relief: | Convex |
| Slope (%): | 0 | Latitude: 40.62347 | Longitude: -83.579623 Datum: WGS84 |

Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes ☐ No

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed?
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

| | |
|---|---|
| Date: | 04/19/23 |
| County: | Hardin |
| State: | Ohio |
| Wetland ID: | N/A |
| Sample Point: | **SP03** |
| Community ID: | UPL |
| Section: | -- |
| Township: | -- |
| Range: | -- Dir: -- |

## SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Is This Sampling Point Within A Wetland? ☐ **Yes** ☑ **No**

Remarks: Upland Maintained lawn within station property

## HYDROLOGY

**Wetland Hydrology Indicators** (Check here if indicators are not present ☑)

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

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | ☐ Yes ☑ No | Depth: | (in.) |
| Water Table Present? | ☐ Yes ☑ No | Depth: | (in.) |
| Saturation Present? | ☐ Yes ☑ No | Depth: | (in.) |

**Wetland Hydrology Present?** ☐ Yes ☑ No

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

Remarks:

## SOILS

Map Unit Name: Pk: Pewano silty clay loam,

**Profile Description** (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

| Top Depth | Bottom Depth | Horizon | Matrix Color (Moist) | | Matrix % | Redox Features Color (Moist) | | Redox Features % | Redox Features Type | Redox Features Location | Texture (e.g. clay, sand, loam) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 21 | 1 | 10YR | 4/3 | 100 | -- | -- | -- | -- | -- | silty clay loam |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

**NRCS Hydric Soil Field Indicators** (check here if indicators are not present ☑)
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral
- ☐ S3 - 5 cm Mucky Peat or Peat
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Muck Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

**Indicators for Problematic Soils** [1]
- ☐ A16 - Coast Prairie Redox
- ☐ S7 - Dark Surface
- ☐ F12 - Iron-Manganese Masses
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

**Restrictive Layer (If Observed)** Type: Depth:

**Hydric Soil Present?** ☐ Yes ☑ No

Remarks:

# WETLAND DETERMINATION DATA FORM
**Midwest Region**

Project/Site: South Kenton Station Expansion Project | Wetland ID: N/A | Sample Point: SP03

## VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

| | Species Name | % Cover | Dominant | Ind.Status |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Sapling/Shrub Stratum (Plot size: 15 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| 6. | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Herb Stratum (Plot size: 5 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | *Taraxacum officinale* | 40 | Y | FACU |
| 2. | *Trifolium pratense* | 20 | Y | FACU |
| 3. | *Trifolium repens* | 10 | N | FACU |
| 4. | *Poa pratensis* | 30 | Y | FAC |
| 5. | -- | -- | -- | -- |
| 6 | -- | -- | -- | -- |
| 7. | -- | -- | -- | -- |
| 8. | -- | -- | -- | -- |
| 9. | -- | -- | -- | -- |
| 10. | -- | -- | -- | -- |
| 11. | -- | -- | -- | -- |
| 12. | -- | -- | -- | -- |
| 13. | -- | -- | -- | -- |
| 14. | -- | -- | -- | -- |
| 15. | -- | -- | -- | -- |
| | Total Cover = | 100 | | |

Woody Vine Stratum (Plot size: 30 ft radius)

| | | | | |
|---|---|---|---|---|
| 1. | -- | -- | -- | -- |
| 2. | -- | -- | -- | -- |
| 3. | -- | -- | -- | -- |
| 4. | -- | -- | -- | -- |
| 5. | -- | -- | -- | -- |
| | Total Cover = | 0 | | |

Remarks:

### Dominance Test Worksheet

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: ***33%*** (A/B)

### Prevalence Index Worksheet

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL spp. | 0 | x 1 = | 0 |
| FACW spp. | 0 | x 2 = | 0 |
| FAC spp. | 30 | x 3 = | 90 |
| FACU spp. | 70 | x 4 = | 280 |
| UPL spp. | 0 | x 5 = | 0 |
| Total | 100 (A) | | 370 (B) |

Prevalence Index = B/A = ***3.700***

### Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No Dominance Test is > 50%
- ☐ Yes ☑ No Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No Morphological Adaptations (Explain) *
- ☐ Yes ☑ No Problem Hydrophytic Vegetation (Explain) *

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

### Definitions of Vegetation Strata:

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

**Sapling/Shrub -** Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

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

**Woody Vines -** All woody vines greater than 3.28 ft. in height.

**Hydrophytic Vegetation Present** ☐ Yes ☑ No

**Additional Remarks:**

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Midwest Region**
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

*OMB Control #: 0710-0024, Exp: 09/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: South Kenton Station Expansion | City/County: Hardin County | Sampling Date: 08/06/2025
Applicant/Owner: AEP Ohio Transmission Company Inc, | State: OH | Sampling Point: SP04
Investigator(s): Malea Casey, Abbey Dunn | Section, Township, Range:
Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave
Slope (%): 0-1 | Lat: 40.62281 | Long: -83.579282 | Datum: WGS84
Soil Map Unit Name: Pewamo silty clay loam, 0 to 1 percent slopes | NWI classification: R4SBC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X

Remarks:

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Ulmus americana* | 3 | No | FACW |
| 2. *Celtis occidentalis* | 2 | No | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 5 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 ft) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 | =Total Cover | |
| **Herb Stratum** (Plot size: 5 ft) | | | |
| 1. *Bromus inermis* | 75 | Yes | FACU |
| 2. *Daucus carota* | 30 | No | UPL |
| 3. *Symphyotrichum pilosum* | 15 | No | FACU |
| 4. *Cirsium arvense* | 15 | No | FACU |
| 5. *Dipsacus fullonum* | 15 | No | FACU |
| 6. *Dactylis glomerata* | 10 | No | FACU |
| 7. *Heracleum maximum* | 10 | No | FACW |
| 8. *Calystegia pubescens* | 10 | No | UPL |
| 9. *Cichorium intybus* | 5 | No | FACU |
| 10. | | | |
| | 185 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 ft) | | | |
| 1. | | | |
| 2. | | | |
| | 0 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 13 | x 2 = | 26 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | 135 | x 4 = | 540 |
| UPL species | 40 | x 5 = | 200 |
| Column Totals: | 190 (A) | | 772 (B) |

Prevalence Index = B/A = 4.06

**Hydrophytic Vegetation Indicators:**

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

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

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

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

## SOIL

Sampling Point: SP04

**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 3/2 | 100 | | | | | Silt 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)
- ___Depleted Below Dark Surface (A11)
- ___Thick Dark Surface (A12)
- ___Iron Monosulfide (A18)
- ___Sandy Mucky Mineral (S1)
- ___5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ____ Iron-Manganese Masses (F12)
- ___Red Parent Material (F21)
- ___Very Shallow Dark Surface (F22)
- ___Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

Surface Water Present? Yes ____ No 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:

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Midwest Region**
See ERDC/EL TR-10-16; the proponent agency is CECW-COR

*OMB Control #: 0710-0024, Exp: 09/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: South Kenton Station Expansion | City/County: Hardin County | Sampling Date: 08/06/2025
Applicant/Owner: AEP Ohio Transmission Company Inc. | State: OH | Sampling Point: SP05
Investigator(s): Malea Casey, Abbey Dunn | Section, Township, Range:
Landform (hillside, terrace, etc.): Terrace | Local relief (concave, convex, none): Concave
Slope (%): 1 | Lat: 40.622504 | Long: -83.579243 | Datum: WGS84
Soil Map Unit Name: Pewamo silty clay loam, 0 to 1 percent slopes | NWI classification: R4SBC
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

**Is the Sampled Area within a Wetland?** Yes ____ No X

Remarks:
New field area between paved road and agricultural field

## VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15 ft)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 | =Total Cover | |
| **Herb Stratum (Plot size: 5 ft)** | | | |
| 1. *Bromus inermis* | 80 | Yes | FACU |
| 2. *Daucus carota* | 25 | No | UPL |
| 3. *Dipsacus fullonum* | 20 | No | FACU |
| 4. *Symphyotrichum pilosum* | 15 | No | FACU |
| 5. *Toxicodendron radicans* | 10 | No | FAC |
| 6. *Solanum carolinense* | 5 | No | FACU |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 155 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30 ft)** | | | |
| 1. | | | |
| 2. | | | |
| | 0 | =Total Cover | |

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 120 | x 4 = | 480 |
| UPL species | 25 | x 5 = | 125 |
| Column Totals: | 155 (A) | | 635 (B) |

Prevalence Index = B/A = 4.1

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

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

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

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

## SOIL

Sampling Point: SP05

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

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-16 | 10YR 4/2 | 100 | | | | | Silt 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)
- ___Depleted Below Dark Surface (A11)
- ___Thick Dark Surface (A12)
- ___Iron Monosulfide (A18)
- ___Sandy Mucky Mineral (S1)
- ___5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ____ Iron-Manganese Masses (F12)
- ___Red Parent Material (F21)
- ___Very Shallow Dark Surface (F22)
- ___Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

Secondary Indicators (minimum of two required)

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

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No 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:

# D.2 HHEI/QHEI DATA FORMS

# Headwater Habitat Evaluation Index Field Form

**HHEI Score (sum of metrics 1+2+3)** 71

SITE NAME/LOCATION South Kenton Station Expansion Project

SITE NUMBER Stream 1 RIVER BASIN Scioto RIVER CODE _____ DRAINAGE AREA (mi²) 0.85 mi²

LENGTH OF STREAM REACH (ft) 200 LAT 40.623254 LONG -83.579502 RIVER MILE _____

DATE 4/19/23 SCORER Gillette COMMENTS _____

**NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions**

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

**1. SUBSTRATE (Estimate percent of every type 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] | | ☐ | SILT [3 pt] | 10 |
| ☐ | BOULDER (>256 mm) [16 pts] | | ☐ | LEAF PACK/WOODY DEBRIS [3 pts] | 10 |
| ☐ | BEDROCK [16 pts] | | ☐ | FINE DETRITUS [3 pts] | |
| ☒ | COBBLE (65-256 mm) [12 pts] | 40 | ☐ | CLAY or HARDPAN [0 pt] | |
| ☒ | GRAVEL (2-64 mm) [9 pts] | 30 | ☐ | MUCK [0 pts] | |
| ☐ | SAND (<2 mm) [6 pts] | | ☐ | ARTIFICIAL [3 pts] | 10 |

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 40 (A) 21

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5

TOTAL NUMBER OF SUBSTRATE TYPES:

**HHEI Metric Points**

**Substrate Max = 40**

26

**A + B**

**2. Maximum Pool Depth** ***(Measure the maximum pool depth within the 61 meter (200 feet)*** 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 [5pts] |
| ☒ | > 10 - 22.5 cm [25 pts] | ☐ | NO WATER OR MOIST CHANNEL [0pts] |

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 15

**Pool Depth Max = 30**

25

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

| | | | |
|---|---|---|---|
| ☐ | > 4.0 meters (> 13') [30 pts] | ☐ | > 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 (> 4' 8" - 9' 7") [20 pts] | | |

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 1.6

**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 | | |
|---|---|---|---|
| ☐ | ☐ | Wide >10m | |
| ☐ | ☐ | Moderate 5-10m | |
| ☐ | ☐ | Narrow <5m | |
| ☒ | ☒ | None | |

FLOODPLAIN QUALITY (Most Predominant per Bank)

| L | R | | |
|---|---|---|---|
| ☐ | ☐ | Mature Forest, Wetland | |
| ☐ | ☐ | Immature Forest, Shrub or Old Field | |
| ☒ | ☒ | Residential, Park, New Field | |
| ☐ | ☐ | Fenced Pasture | |
| ☐ | ☐ | Conservation Tillage | |
| ☐ | ☐ | Urban or Industrial | |
| ☐ | ☐ | Open Pasture, Row Crop | |
| ☐ | ☐ | Mining or Construction | |

COMMENTS Maintained lawn

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

☒ Stream Flowing ☐ Moist Channel, isolated pools, no flow (intermittent)

☐ Subsurface flow with isolated pools (interstitial) ☐ 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 44.5 (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Scioto River Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Mt. Victory NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Hardin Township/City: Kenton

### MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 4/17/23 Quantity: 0.05"

Photo-documentation Notes: _____

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

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) 13.8 Dissolved Oxygen (mg/l) / pH (S.U.) 8.1 Conductivity (umhos/cm) .78

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

Additional comments/description of pollution impacts: _____

### BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) / Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) / Species observed (if known): _____

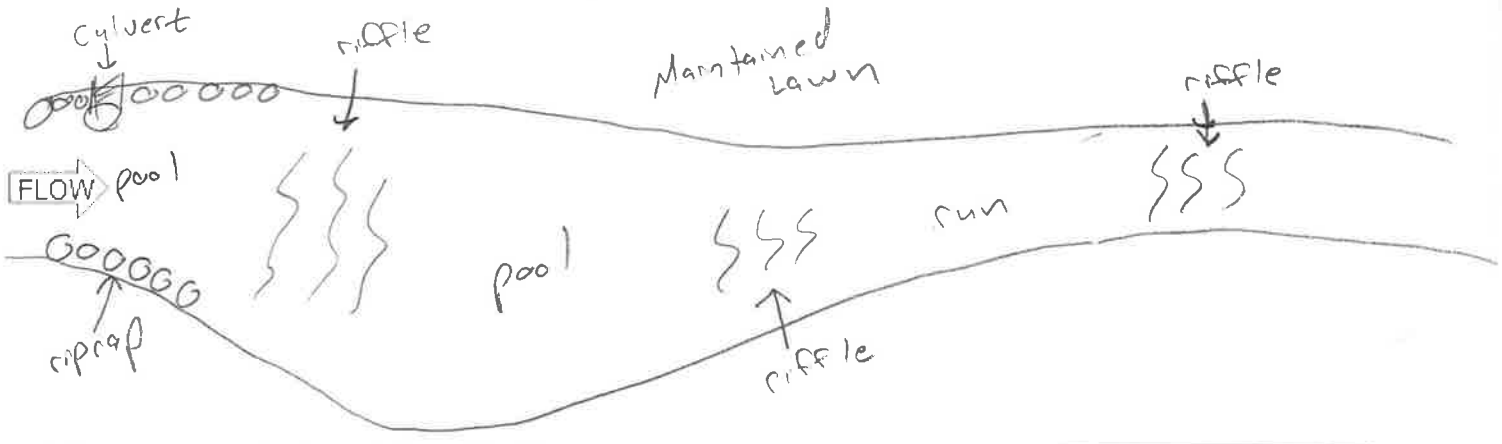
Salamanders Observed? (Y/N) / Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) / Species observed (if known): _____

Comments Regarding Biology: Not Conducted

## 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



TGP6301

# Ohio EPA — Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 44.5

Stream & Location: South Kenton Station Expansion Project RM: ___.__ Date: 4/19/2023

Stream 1 Scorers Full Name & Affiliation: Tyler Gillett C. / Stantec

River Code: ___-___-___ STORET #: _____ Lat./Long.: (NAD 83 - decimal °) 40.623254 / 83.579502 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] | | | ☐☐ DETRITUS [3] | 10 | 10 |
| ☒☐ COBBLE [8] | 40 | 40 | ☐☐ MUCK [2] | | |
| ☐☒ GRAVEL [7] | 30 | 30 | ☐☐ SILT [2] | 10 | 10 |
| ☐☐ SAND [6] | | | ☐☐ ARTIFICIAL [0] | 10 | 10 |
| ☐☐ BEDROCK [5] | | | (Score natural substrates; ignore sludge from point-sources) | | |

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

Comments

Check ONE (Or 2 & average)

| ORIGIN | SILT / EMBEDDEDNESS | QUALITY |
|---|---|---|
| ☐ LIMESTONE [1] | | ☐ HEAVY [-2] |
| ☒ TILLS [1] | | ☐ MODERATE [-1] |
| ☐ WETLANDS [0] | | ☒ NORMAL [0] |
| ☐ HARDPAN [0] | | ☐ FREE [1] |
| ☐ SANDSTONE [0] | | ☐ EXTENSIVE [-2] |
| ☐ RIP/RAP [0] | | ☐ MODERATE [-1] |
| ☐ LACUSTURINE [0] | | ☒ NORMAL [0] |
| ☐ SHALE [-1] | | ☐ NONE [1] |
| ☐ COAL FINES [-2] | | |

Substrate: 16 (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] | 0 POOLS > 70cm [2] | 0 OXBOWS, BACKWATERS [1] | |
| 0 OVERHANGING VEGETATION [1] | 0 ROOTWADS [1] | 1 AQUATIC MACROPHYTES [1] | |
| 0 SHALLOWS (IN SLOW WATER) [1] | 1 BOULDERS [1] | 1 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: 6

## 3] CHANNEL MORPHOLOGY
Check ONE in each category (Or 2 & average)

| SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|---|---|---|---|
| ☐ HIGH [4] | ☐ EXCELLENT [7] | ☐ NONE [6] | ☐ HIGH [3] |
| ☐ MODERATE [3] | ☐ GOOD [5] | ☐ RECOVERED [4] | ☒ MODERATE [2] |
| ☒ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☐ LOW [1] |
| ☐ NONE [1] | ☒ POOR [1] | ☒ RECENT OR NO RECOVERY [1] | |

Comments

Channel Maximum 20: 6

## 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) | RIPARIAN WIDTH (L / R) | FLOOD PLAIN QUALITY (L / R) |
|---|---|---|
| ☐☐ NONE / LITTLE [3] | ☐☐ WIDE > 50m [4] | ☐☐ FOREST, SWAMP [3] |
| ☒☒ MODERATE [2] | ☐☐ MODERATE 10-50m [3] | ☐☐ SHRUB OR OLD FIELD [2] |
| ☐☐ HEAVY / SEVERE [1] | ☐☐ NARROW 5-10m [2] | ☒☐ RESIDENTIAL, PARK, NEW FIELD [1] |
| | ☐☐ VERY NARROW < 5m [1] | ☐☐ FENCED PASTURE [1] |
| | ☒☒ NONE [0] | ☐☒ OPEN PASTURE, ROWCROP [0] |
| | | ☐☐ CONSERVATION TILLAGE [1] |
| | | ☐☐ URBAN OR INDUSTRIAL [0] |
| | | ☐☐ MINING / CONSTRUCTION [0] |

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

Comments

Riparian Maximum 10: 2.5

## 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]
- ☒ SLOW [1]
- ☐ VERY FAST [1]
- ☐ INTERSTITIAL [-1]
- ☒ FAST [1]
- ☐ INTERMITTENT [-2]
- ☒ MODERATE [1]
- ☐ 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: 4

**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 | RUN DEPTH | RIFFLE / RUN SUBSTRATE | RIFFLE / RUN EMBEDDEDNESS |
|---|---|---|---|
| ☐ BEST AREAS > 10cm [2] | ☐ MAXIMUM > 50cm [2] | ☐ STABLE (e.g., Cobble, Boulder) [2] | ☐ NONE [2] |
| ☐ BEST AREAS 5-10cm [1] | ☒ MAXIMUM < 50cm [1] | ☒ MOD. STABLE (e.g., Large Gravel) [1] | ☐ LOW [1] |
| ☒ BEST AREAS < 5cm [metric=0] | | ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0] | ☒ MODERATE [0] |
| | | | ☐ EXTENSIVE [-1] |

Comments

Riffle / Run Maximum 8: 0

## 6] GRADIENT (14.7 ft/mi)
**DRAINAGE AREA** (1.49 mi²)
- ☐ VERY LOW - LOW [2-4]
- ☐ MODERATE [6-10]
- ☒ HIGH - VERY HIGH [10-6]

%POOL: 60 %GLIDE: 0
%RUN: 30 %RIFFLE: 10

Gradient Maximum 10: 10

## 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

61 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

PH 9.1

Conductivity .78 78

Temp 13.9°c

## 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 2'
- x̄ depth 6"
- max. depth 6"
- x̄ bankfull width 5'
- bankfull x̄ depth 2'
- W/D ratio
- bankfull max. depth
- floodprone $x^2$ width
- entrench. ratio

*Legacy Tree:*

## Stream Drawing:

N →